

FOUR STAR FUEL SPILL REMEDIATION REPORT

Four Star Supply, Inc.
355 NW State Street
Pullman, Washington

Project Number: 223516.00

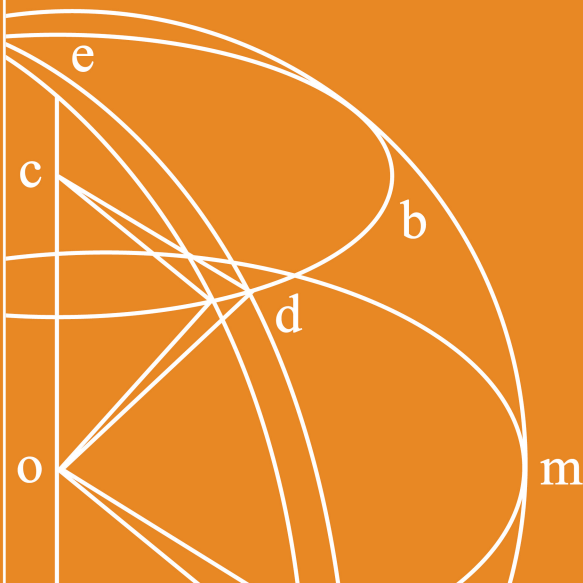
April 6, 2023

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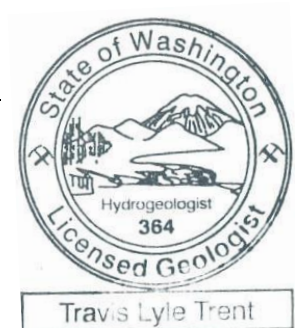
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Report Integrity

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1.0 INTRODUCTION

On April 25, 2022, Four Star Supply Inc. (Four Star) identified a diesel fuel leak from an Above Ground Storage Tank (AST) located on Parcel 10850058130001 in Pullman, Washington. The diesel leaked into a concrete secondary containment that failed resulting in discharge to site soils beneath the concrete. The leak resulted in a discernable sheen to the adjacent South Fork Palouse River (SFPR).



Initial response activities consisted of placement of containment booms and sorbent pads within the SFPR and the use of absorbent clay to remove the spilt diesel fuel from the secondary containment. Reported calculations indicated that approximately 400-gallons of diesel fuel were released from the failed AST. The Site is recognized on the Washington State Cleanup Program as Grange Supply Company Pullman (Cleanup Site ID 16631, Facility/Site ID 3394273, UST ID 171).

Emergency services, Department of Transportation, and Department of Ecology staff responded to the accident. Fulcrum Environmental Consulting, Inc. (Fulcrum) was retained by Four Star to respond to the initial event, assist with regulatory permitting documents, oversee independent cleanup actions for the release, conduct confirmatory sampling, and to prepare this project summary report. Able Clean-up Technologies Inc. (Able) was retained by Four Star to provide spill response and cleanup services. Plateau Archaeological Investigations, LLC (Plateau) was retained by Four Star to conduct Archaeological monitoring during excavation activities.

Remedial excavation of contaminated site soils was performed in two (2) phases. Phase I initial remedial excavation for diesel contaminated soil associated with the April 2022 fuel release and Phase II remedial excavation of historical petroleum contaminated soils. Laboratory analytical identified the contaminants of concern (COCs); gasoline, diesel, benzene, toluene, ethylbenzene, and xylenes to be above MTCA Method A Cleanup Levels throughout site soils. All current and historic contaminated soil was removed from the subject site other than the stream bank. Contaminated soils remained at property margins shared with NW State Street, Poplar Street, and an adjacent building.

Removed soil was transported to Roach Construction Land Farm located in Genesee, Idaho for treatment. A total of 4,246 cubic yards (CY) of petroleum contaminated soil (PCS) was excavated from the site.

See Figure 1 for a general site location map. Figure 2 for a presentation of the soil samples collected for site characterization. Figure 3 for a presentation of the sidewall confirmation soil sample locations. Figure 4 for a presentation of the pit bottom confirmation soil sample locations.



Figure 5 for a presentation of the extent of remaining petroleum contaminated soil. Figure 6 for an aerial presentation of the engineered clay barriers. Figure 7 for a cross sectional presentation of the engineered clay barriers. Figure 8 for a cross sectional presentation of the engineered shoreline cap. Figure 9 for a presentation of proposed groundwater monitoring well locations.

Relevant professional certifications are presented in Appendix A. Site Specific Health and Safety Plan is presented in Appendix B. Site Specific Remedial Work Plan is presented in Appendix C. The Sampling and Analysis Plan and Quality Assurance Project Plan is presented in Appendix D. Incident Waste Management and Disposal Plan Appendix E. Permitting Documents are presented in Appendix F. Site photographs are presented in Appendix G. The soil sample results summary tables are presented in Appendix H. Waste disposal receipts are presented in Appendix I. Complete laboratory analytical reports are presented in Appendix J. Documentation from the terrestrial ecology evaluation is located in Appendix K. Plateau Archaeological Investigations, LLC (Plateau) Archaeological Monitoring Report is presented in Appendix L. The Natural Resource Damages Assessment is presented in Appendix M.

1.1 Site Description and Incident Background

Four Star identified a diesel AST located on Parcel 10850058130001 in Pullman, Washington that developed a fuel leak. The property is listed on the Whitman County Assessor Site to be owned by Grange Supply Company. The failed AST was estimated to have started leaking sometime after 9:00 am on April 22, 2022 and the leak was discovered at 6:30 am on April 25, 2022 when the spill cleanup response activities began. The diesel AST leaked into a concrete secondary containment that was fractured and the spill migrated downward into site soils with subsequent impact (sheen) observed in near shore waters of the adjacent South Fork Palouse River (SFPR).



Initial response activities conducted by Four Star staff and Able consisted of capture of remaining free product in the containment area, deploying containment booms, sorbent booms, sorbent pads and absorbent clay. Approximately 400-gallons of diesel was calculated to have been released to the SFPR. Response efforts within the SFPR recovered approximately 132-gallons of the released volume (34%) and 41-gallons were recovered within the first 24-hours of the spill response.





The Natural Resource Damages Assessment (NRDA) was completed by Windward Environmental, LLC and is presented in Appendix I. The subject site presents as commercial area in downtown Pullman, Washington situated next to the SFPR with vegetated riverbanks on the north and south sides of the SFPR. A commercial building is west of the excavation site, the SFPR is north of the excavation site, NW State Street is east of the excavation site, and Poplar Street bounds the excavation site to the south.

2.0 SCOPE OF SERVICES

Fulcrum's scope of work was to direct an independent cleanup action on behalf of the property owner. Services included loss characterization, response action permitting and oversight, confirmation sampling, and project reporting.

Project services were completed under the direction of Travis Trent, a Washington State Licensed Hydrogeologist and Certified Industrial Hygienist with over 27-years of experience in remediation of petroleum contaminated soils. Mr. Trent was assisted in field services and project reporting by Scott Groat, a Washington State Licensed Geologist, and Ethan Ducken, a Geologist-in-Training, also with Fulcrum. Relevant professional certifications are presented in Appendix A.

Fulcrum subcontracted TestAmerica Laboratories Inc (TestAmerica), an Ecology-accredited laboratory (Accreditation No. C569), of Spokane, Washington, and Libby Environmental, an Ecology-accredited laboratory (Accreditation No. C855) to provide laboratory services.

3.0 DISCUSSION OF PERTINENT REGULATIONS AND GUIDANCE

Fulcrum utilized the following guidance to complete remedial cleanup activities consistent with applicable Washington State regulations.

3.1 MTCA Regulations

In March 1989, the Model Toxics Control Act (MTCA) went into effect in Washington State. The MTCA regulations, WAC 173-340, 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 (3) 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 became effective August 15, 2001, and 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.

3.3 Guidance Criteria

Fulcrum has utilized applicable portions of the Washington State Department of Ecology's, *Guidance for Petroleum Contaminated Soil* (June of 2016) and *Model Remedies for Sites with Petroleum Contaminated Soil* (December 2017) as guidance for site characterization, remedial design, and confirmatory sampling. Ecology's *Model Remedies for Sites with Petroleum Contaminated Soils* (Revised December 2017) was used as guidance for the remedial action.

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 hydrogeological conditions. The following subsections describe regional and local subsurface site settings.

4.1 Regional Setting

The site is located immediately adjacent to the South Fork Palouse River within the west central portion of Pullman, Washington and sits atop soil and alluvium. The subject site is located in Whitman County which rests on the east margin of the Columbia Basin province and within the Palouse region of southeast Washington, a vast region characterized by smooth rolling hills formed by glacial generated winds which cover a dissected lava plain. The bedrock of the area was formed by a series of massive volcanic eruptions that took place during the Miocene and Pliocene epochs, around 15-5 million years ago.





The underlying lava flows, part of the Columbia River Basalt Group, are nearly horizontal and form bluffs and low cliffs along major streams in the area. The area has a semi-arid climate, with hot summers and cold winters, and receives most of its precipitation in the form of snow between October through March each year.

4.2 Local Physical Setting

Elevation for the site is between approximately 2,336 and 2,346 feet above mean sea level as identified by the United States Geological Survey National Map Viewer. Site area soils are identified by the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey as the Caldwell silt loam. During onsite activities, soil was identified as a gravelly silty loam, transitioning to a sandy gravel, cobbles and boulders mix, over a clayey sand, and then transitioning into a clay layer. Bedrock was not encountered during site excavations.

Groundwater flow was not determined as part of this remedial action but is presumed to follow regional topography flowing north towards the South Fork Palouse River. According to the Washington State Department of Ecology's online database five (5) groundwater wells are located within one (1) mile of the site. The wells reported groundwater at a depths between 6 feet to 270 feet below ground surface (bgs). Groundwater below the Grange Supply property was encountered periodically at a depth of approximately 8 feet below the surface of the adjacent river.

5.0 REMEDIATION ACTIVITIES

Following collection of free product and deployment of booms, the leaking AST and adjacent USTs were all pumped free of product after which the ASTs were removed and the concrete secondary containment was demolished and removed to allow access to the underlying contaminated soils. Table 1 presents a summary of the principal actions taken in the remedial response. Archaeological monitoring was conducted during all excavation activities with no identified concerns. See Appendix L for Plateau Archaeological Investigation's report.

Table 1: Work Summary

Task	Date completed
Emergency Response	April 25 – May 13, 2022
Phase I Remediation	May 24 – June 2, 2022
Restoration and Capping of South Shore Bank	June 3 – 9, 2022
Phase II Remediation	August 15 – September 1, 2022
Groundwater Monitoring and Vapor Intrusion Sampling	Schedule for Summer 2023



5.1 Phase I – Spill Response, Initial Assessment, and Characterization Sampling

5.1.1 Initial Spill Response

On April 25th, 2022, Able was contacted by Four Star to respond to the identified fuel release from the failed diesel AST located on the Grange Supply property south of the SFPR. Initial response activities conducted by Four Star staff and Able consisted of deploying containment booms, sorbent booms, sorbent pads, and absorbent clay. Approximately 400-gallons of diesel was calculated to have been released. Emergency response efforts recovered approximately 132-gallons of the released volume (34%) with approximately 41-gallons recovered within the first 24-hours of the spill response.



All diesel and gasoline-soaked sorbent materials (0.29 tons) were disposed of at the Waste Management (WM) Graham Road landfill located in Medical Lake, Washington. The water and fuel mixture captured during the initial response activities was transported to Orrco Oil Re-refining located in Portland, Oregon for recovery. Site photographs are presented in Appendix G. Waste disposal receipts are presented in Appendix I. The Natural Resources Damage Assessment is presented in Appendix M.

5.1.2 Initial Site Assessment

On May 3, 2022, Fulcrum arrived at the site to conduct an initial assessment of the fuel release. Fulcrum observed Able and Four Star staff actively swapping out sorbent pads and booms and hand excavating groundwater capture points along the river bank to intercept diesel contaminated groundwater moving toward the river. Plateau Archaeological was onsite observing the hand excavation work. Fulcrum observed visible sheen at the riverbank. No sheen or other indication of impact was observed beyond the containment booms and sorbents booms that had been placed along the bank. The ASTs were currently in the process of being drained of fuel and the fuel lines that ran across the SFPR were in the process of being decommissioned.

On May 10, 2022, Fulcrum observed activities associated with decommissioning the AST tank farm and concrete secondary containment system. The tanks were emptied and removed from the site for sale and reuse. Able disposed of the secondary containment concrete that was not petroleum stained to Atlas Sand and Rock located in Pullman, Washington. Concrete that was stained with petroleum was disposed of at the WM Graham Road landfill located in Medical Lake, Washington. During the decommissioning and demo work of the AST tank farm a total of 12.23 tons of petroleum contaminated concrete was disposed of at the WM Graham Road disposal facility located in Medical Lake, Washington.



An additional 123.10 tons of clean concrete was transported to Atlas Sand and Gravel located in Pullman, Washington for recycling. Site photographs are presented in Appendix G. Waste disposal receipts are presented in Appendix I.

5.1.3 Permitting and Plans

The following permits were developed in support of the remedial response and are presented in Appendix F.

- Washington Department of Fish and Wildlife Hydraulic Approval
- United States Army Corp of Engineers Nationwide Permit 20 and JARPA Application
- City of Pullman Grading Permit
- City of Pullman Shoreline Master Program Application
- City of Pullman Floodplain Development Permit
- SEPA Checklist

In addition to the above listed permits, proximal Tribes were contacted who requested no additional permitting but did request Archeological Observations for any new disturbance of site soils.

Fulcrum prepared the following plans in support of the remedial response.

- Site Specific Health and Safety Plan (See Appendix B)
- Site Specific Remedial Work Plan (See Appendix C)
- Site Specific Sampling and Analysis Plan (See Appendix D)
- Quality Assurance Project Plan (See Appendix D)
- Incident Waste Management and Disposal Plan (See Appendix E)
- Washington State Department of Ecology Voluntary Cleanup Program Application (See Appendix K)

5.1.4 Initial Characterization Sampling

On May 13th and 19th of 2022, Fulcrum performed characterization sampling within the planned Phase I excavation area. A series of test pits were excavated in areas below the secondary containment that were observed to have surficial petroleum staining or petroleum odor. Test pits were excavated to approximately 2-ft to 8-ft bgs and soil samples were collected from areas within each test pit that were identified to have the highest field indicators (petroleum staining, petroleum odor, and photoionization detector (PID) volatile organic compound (VOC) readings).





Soil samples were analyzed for gasoline by Northwest Total Petroleum Hydrocarbons – gasoline extended (NWTPH-Gx), diesel by NWTPH-Dx, and benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8260D, and total lead by EPA Method 6010D.

Fulcrum also analyzed the characterization sample with the highest concentration of total lead, for lead Toxic Characterization Leaching Procedure (TCLP). Laboratory analytical identified the contaminated soil sampled during the characterization testing to have gasoline, diesel, BTEX, total lead, and lead TCLP concentrations that were of acceptable values for the PCS to be disposed of at the Roach Construction Land Farm located in Genesee, Idaho. Soil samples were submitted to TestAmerica Laboratories in Spokane Valley, Washington (Accreditation No. C569) and analyzed gasoline by Northwest Total Petroleum Hydrocarbons – gasoline extended (NWTPH-Gx), diesel by NWTPH-Dx, and benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8260D, and total lead by EPA Method 6010D. See Figure 2 for a presentation of soil characterization sample locations. The site specific remedial work plan is present in Appendix C. Soil sample collection protocol is presented in Appendix D. Incident Waste Management and Disposal Plan Appendix E. Site photographs are presented in Appendix G. Initial characterization sample results are presented in Appendix H. Waste disposal receipts are presented in Appendix I. Laboratory analytical results are presented in Appendix J.

5.2 Phase I – Remedial Excavation and Shoreline Capping Activities

5.2.1 Phase I Remedial Excavation – May and June of 2022

Phase I remediation began on May 24, 2022 and was concluded on June 2, 2022. Fulcrum geology staff were onsite during all Phase I remedial work. Plateau was also onsite to conduct archaeological monitoring of excavation activities. The purpose of work was to remove the area of PCS associated with the April 2022 diesel release and to conduct characterization and confirmation sampling sufficient to determine additional remedial requirements. See Figure 3 for a presentation of the Phase I excavation extents and confirmation soil sample locations. Soil sample collection protocol is presented in Appendix B. Site photographs are presented in Appendix C. The soil sample results summary table and laboratory analytical reports are presented in Appendix D. Characterization sampling and confirmation sampling locations are presented in Figures 2 through 4.



Soil present from the surface down to approximately 8-ft bgs was identified as a likely non-native fill material consisting of basalt boulders and basalt cobble intermixed with sand/silt. Soil transitioned into a clayey sand from approximately 8-ft bgs to 16-ft bgs. A compact clay layer was encountered at approximately 22 ft bgs which was effective in preventing further downward contaminant migration.



Contaminated soil was confirmed to be present from the shoreline to all four (4) property boundaries. Based on the location and nature of the release and on observed conditions, it was determined portions of the contaminated soil pre-existed the April 2022 release, presumed to be the result of historical releases at the site.

Groundwater was encountered in limited amounts at depths below the adjacent riverbank indicating that the river is likely disconnected from the water table and is likely perched on low permeability sediments. Fulcrum's hydrogeologist determined that impact to the bank had both the potential to release additional petroleum impact to the river and to change the nature of the river interface with site groundwater.

Phase I remediation consisted of removal of all site soils on the northern half of the property (area beneath the 2022 Spill) to clean soils at a depth of approximately 22 ft bgs with the following exceptions.

- Approximately five (5) feet of riverbank left in place along the north margin to protect the river.
- Approximately five (5) feet of soils left on the east, west, and south margins that could not be removed without risking adverse impact to the adjacent building and road.
- Contaminated soils present on the south half of the site that did not appear as the result of the 2022 diesel release.

Fulcrum collected a total of 22 soil characterization and 83 confirmations samples during the Phase I remedial action to determine the necessary extent of soil removal. A total of 124 confirmation samples were collected at excavation boundaries (bottom and sidewalls). Soil samples were submitted to Libby Environmental (Lab ID C855) and analyzed gasoline by Northwest Total Petroleum Hydrocarbons – gasoline extended (NWTPH-Gx), diesel by NWTPH-Dx, and benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8260D. See Figures 3 and 4 for a presentation of the confirmation soil sample locations. The site specific remedial work plan is present in Appendix C. Soil sample collection protocol is presented in Appendix D. Incident Waste Management and Disposal Plan Appendix E. Site photographs are presented in Appendix G. Initial characterization sample results are presented in Appendix H. Waste disposal receipts are presented in Appendix I. Laboratory analytical results are presented in Appendix J.

Confirmation sampling results documented that all contaminated soil had been removed from the site except for the locations as noted above.

5.2.2 Phase I Clay Barrier Placement

With residual contamination remaining at the site excavation boundaries, Fulcrum identified a low potential for groundwater to entrain contaminants and present a risk to the river. The removal of the majority of the contamination and the indication that the river was losing flow to groundwater at a disconnected depth below the river bottom both minimize this risk. However, from an abundance of caution, Fulcrum recommended placement of a clay barrier between the river and the remaining areas of contaminated soil. The barrier was constructed of clean compacted clay that was placed directly over the clean naturally occurring compact clay layer at approximately 22 ft bgs and continued up 20 feet where it was capped with two (2) feet of basalt cobble and gravel.



The clay barrier was constructed along the full shore line extended approximately 20 feet south of the shoreline in the middle and approximately 80 feet on the east and west margins creating a U-shaped barrier between the river bank and any remaining areas of contaminated soil. The clay barrier forms the replaced slope from the shoreline up to site grade and was armored against potential future erosion with a layer of basalt rip rap. See Figures 7 and 8 for a graphic representation of the clay barrier.

During the Phase I excavation activities, a total of 1,247 cubic yards (lcy) of PCS was excavated and disposed of at the Roach Construction Land Farm located in Genesee, Idaho. A total of 725 cubic yards of clay was imported to the site to create the proactive barrier. The balance of the excavation was infilled with sandy basalt cobble and finished with a layer of crushed basalt to create a parking surface.

5.2.2 Phase I – South Shore SFPR Clay Capping

Following consultation with the Washington State Department of Fish and Wildlife and the United States Army Corp of Engineers, it was determined that additional action should be taken to protect the river from the small area of contaminated soil remaining beneath the three (3) feet of shoreline that was retained. Fulcrum submitted plans for placement of a compact clay cap covered with basalt rip rap over the near shore sediments along the entire site shoreline extending approximately five (5) feet out into the river. Intent of the cap was to provide a permanent barrier between the river and any



remaining contaminated soil beneath the retained bank. The plan specifically excluded the upper surface of the existing five (5) feet of shoreline to retain the naturally occurring riparian vegetation. The plan was approved by both agencies and representatives of Ecology and the City of Pullman.

On June 9, 2022, the compacted clay cap was installed along the stream bank and armored with basalt rip-rap as proposed. A turbidity curtain was deployed along the shoreline to minimize turbidity impact to the river during the installation. Vegetation along the three (3) feet of naturally occurring shoreline was retained during the installation. Periodic observations of the shoreline for sheen were conducted over the next four (4) months with no sheen observed. A flood event occurred approximately four (4) weeks after the clay cap installation. When the flood waters resided, it showed that the basalt armoring had been successful in protecting the clay cap from disturbance. Ongoing periodic observation detected no sheen at the river edge. Concurrently, Ecology reported that the analytical results for three (3) sets of surface water samples collected by Ecology were identified as non-detect for petroleum presence. On July 7, 2022, the containment booms were approved for removal from the river. Representative site photographs of the installation are presented in Appendix G.



5.3 Phase II – Remedial Excavation and Final Grading Activities

The location of the contaminated soil on the southern half of the excavation along with its presentation (old weathered heavy oil-type impact) indicated a condition that pre-existed the 2022 diesel release. Based on observed conditions on the north half of the site, Fulcrum determined that it was likely that even if all of the contaminated soil was removed from the south half of the site, some areas of residual contamination would remain at property boundaries. Fulcrum did recommend removal of all accessible PCS which would substantially reduce the amount of contaminated source material. Following confirmation that funding was available to extend source removal to the southern half of the site, the client directed Fulcrum and Able to proceed with remediation of this area.

5.3.1 Phase II Characterization Sampling

On August 15th of 2022, Fulcrum performed characterization sampling within the planned Phase II excavation area. Two (2) excavation trenches were completed within the central and west portion of the Phase II excavation area. Each test pit was excavated down to 11 ft. bgs along a 30 ft. length running north-south. Characterization samples were collected in the north, central, and south portions of each of the two (2) excavation trenches with characterization soil samples collected from areas within each test pit that were identified to have the highest field indicators (petroleum staining, petroleum odor, and



photoionization detector (PID) volatile organic compound (VOC) readings). A total of 19 soil samples were submitted to Libby Environmental for analysis of gasoline by Northwest Total Petroleum Hydrocarbons – gasoline extended (NWTPH-Gx), diesel by NWTPH-Dx, and benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8260D. Laboratory analytical results confirmed likely PCS presence throughout the southern half of the site down to the clean clay layer at approximately 22 ft bgs. See Figures 2 through 4 and Tables 1-3 in Appendix D for a summary of laboratory results.

5.3.2 Phase II Remedial Excavation – August 16, 2022 to August 29, 2022

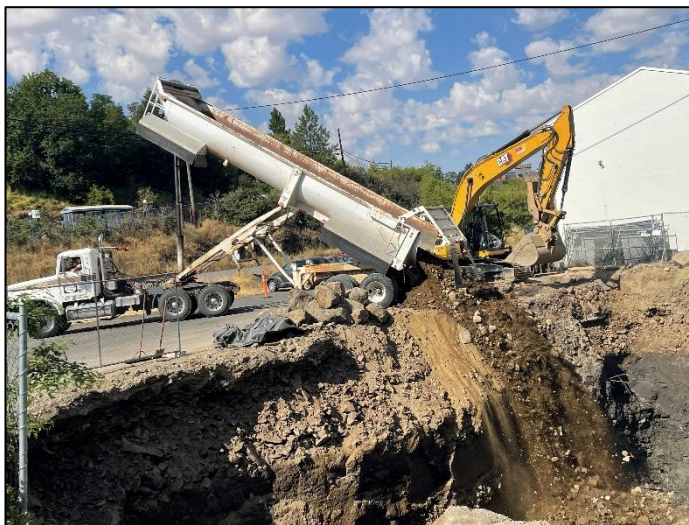
Remediation of the Phase II area was initiated on August 16, and concluded on August 29, 2022. Fulcrum geology staff were onsite during all Phase II remedial work. The purpose of work was to remove the area of PCS associated with pre-existing historical PCS and to conduct characterization and confirmation sampling sufficient to determine additional remedial requirements. See Figures 3 and 4 for a presentation of confirmation soil sample locations. Soil sample collection protocol is presented in Appendix D. Incident Waste Management and Disposal Plan Appendix E. Site photographs are presented in Appendix G.



Initial characterization sample results are presented in Appendix H. Waste disposal receipts are presented in Appendix I.

Consistent with the northern half of the site, soil present from the surface down to approximately 8-ft bgs was identified as a likely non-native fill material consisting of basalt boulders and basalt cobble intermixed with sand/silt. Soil transitioned into a clayey sand from approximately 8-ft bgs to 16-ft bgs. A compact clay layer was encountered at approximately 22 ft bgs which was effective in preventing further downward migration. Contaminated soil was identified between approximately 4-ft bgs to 18-ft bgs and the clean compact clay layer was at approximately 18-ft to 22-ft bgs. Groundwater was encountered in limited amounts at depths below 18 ft bgs measured from road grade. Extent of groundwater presence was insufficient to determine whether it represented a near surface alluvial aquifer or was just seasonal water perched on top of the low conductivity compact clay layer.

Fulcrum collected a total of 51 soil characterization and confirmation samples during the Phase II remedial action to determine the necessary extent of soil removal. Confirmation samples were collected at excavation boundaries (bottom and sidewalls). Soil samples were submitted to Libby Environmental (Lab ID C855) and analyzed gasoline by Northwest Total Petroleum Hydrocarbons – gasoline extended (NWTPH-Gx), diesel by NWTPH-Dx, and benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8260D. See Figures 2 through 4 and Tables 1-3 for a summary of laboratory results.



Phase II remediation consisted of removal of all site soils from the southern half of the site down to a clean excavation bottom. Excavation proceeded in each direction to the property boundary excepting minor areas on the north, east, and west boundaries that were left in place to protect the adjacent building and roads. Phase II excavation activities resulted in removal of a total of 3,000 cubic yards of PCS. The PCS was disposed of at the Roach Construction Land Farm located in Genesee, Idaho. The Phase II excavation was backfilled with basalt rip-rap intermixed with soil and the surface of the Phase II excavation was finished with clean basalt rip-rap and 3-inch minus and 5/8 minus basalt gravel. Fulcrum collected a total of seven (7) pit bottom samples showing that all PCS had been removed to depth. A total of 23 sidewall samples were collected showing that PCS remained in areas to the south, the east and west margins were retained to protect the adjacent building and roads.



5.4 Post Remediation Characterization

Fulcrum collected a total of 42 characterization samples during Phase I and Phase II activities representing soils that were subsequently excavated and disposed as PCS (see Table 1 in Appendix H). Soil contamination at the site extended vertically to a naturally occurring compact clay layer at approximately 18 to 22 ft bgs. Soil was removed to this clean layer in all locations except the north, east, and west margins retained to protect the adjacent building and roads and beneath the three (3) feet of stream bank retained to protect the river. See Figure 5 for a presentation of PCS remaining on the site. A total of 20 samples were collected from the pit bottom over the course of the Phase I and Phase II remedial action confirming that PCS had been removed to clean soil (See Figure 4 for a presentation of pit bottom samples).

Sidewall samples were collected at excavation extents in all four (4) directions to characterize remaining PCS. A total of 85 sidewall confirmation samples were collected from excavation boundaries. Results documented contaminant presence above regulatory threshold in 36 of the 85 samples (42%). Contaminant depth varied by location. Results indicate that areas of PCS remain at excavation margins where it could not be excavated without risk to the adjacent building, roads, and stream. See Figure 5 for a presentation of remaining locations of PCS on the site.

6.0 WASTE DISPOSAL

During the initial spill response activities, a total of 0.29 tons of petroleum contaminated sorbent pads and booms were disposed of at Waste Management's (WM) Graham Road Disposal facility located in Medical Lake, Washington.

All oil water mixtures were recycled through to Orrco Oil Re-refining located in Portland, Oregon.

During the decommissioning and demo work of the AST tank farm a total of 12.23 tons of petroleum impacted concrete was disposed of at the WM Graham Road disposal facility located in Medical Lake, Washington. An additional 123.10 tons of clean concrete was transport to Atlas Sand and Gravel located in Pullman, Washington for recycling.

In May, June, and August of 2023, a total of 4,246 loose cubic yards of PCS was excavated from the Phase I/II remedial areas (Grange Supply property) and transported to the Roach Construction Land Farm located in Genesee, Idaho for disposal as PCS. Waste disposal receipts are presented Appendix I.



7.0 SITE RESTORATION



*SFPR River Bank Final Restoration
September 2022*



*Phase I/II Excavation Final Restoration
September 2022*

On August 31st and September 1st of 2022, Julian Howe, an Environmental Technician, with Fulcrum, arrived onsite to observe final site restoration activities. The Phase I/II excavation work areas were brought back to grade with 3-inch minus basalt overlain by 5/8 minus crushed basalt to meet Four Star Supply's requests and to be in compliance with the City of Pullman grading permit. The near shore riverbank was also restored to its pre-remediation condition. To further protect the SFPR Able placed large boulders along the top portion of the riverbank to serve as vehicle barriers. Additional photographs of the site restoration are presented in Appendix G.

8.0 REMEDIATION SUMMARY AND RECOMMENDATIONS

All contaminated soils were excavated from the site down to the clean clay layer at 22-feet bgs except for a five-foot section of riverbank that was retained and select east, west, and south margins that could not be fully excavated without putting the adjacent building or roads at risk. Removed PCS was legally disposed of with appropriate waste disposal records.

The area of remaining PCS beneath the five-foot section of riverbank was sealed with a permanent clay barrier along the shoreline extending five (5) feet out into the river. The river is further protected from the areas of remaining PCS around the margins of the remedial excavation by placement of the clay barrier from three (3) feet below street grade down to the clean compact clay layer at approximately 22-ft bgs.

The remaining locations of PCS and observed presence of potential potable groundwater in contact with contaminated soils triggers the following additional requirements:

- Terrestrial Ecological Evaluation
- Vapor Intrusion Testing for the adjacent building
- Groundwater Investigation



8.1 Terrestrial Ecological Evaluation

Fulcrum reviewed site conditions to determine whether a terrestrial ecological evaluation (TEE) as set forth in WAC 173-340-7491 would be required. Fulcrum reviewed the site under Ecologies table 749-1 Simplified Terrestrial Ecological Evaluation – Exposure Analysis Procedure (see Appendix K). From a conservative standpoint, Fulcrum did not identify the site as an industrial property (despite land use as a tank farm resulting in a score of 2) and rated it as high habitat quality (score of 1) that would be attractive to wildlife (also a score of 1). The site has none of the listed contaminants for Table Section 5 for a score of 4 resulting in a total score of 7. This score indicated that a simplified evaluation/site-specific evaluation is not required for a site with less than 1.5 acres of contiguous undeveloped land which the site does not have. Based on this review, it is Fulcrum's opinion that the site qualifies for TEE Exclusion 3 (Undeveloped Land WAC 173-340-7491(1)(c)).

8.2 Soil Vapor Intrusion Testing

The owner of the Pullman Market Building, located immediately west of the subject site, will be contacted to request access to allow for Vapor Encroachment Screening (VES). If approved, Fulcrum will conduct VES testing for potential elevated VOC presence associated with diesel range organics; gasoline range organics; benzene, toluene, ethyl benzene, and xylene.

8.3 Groundwater Investigation

Observed contact between possible potable groundwater resources and contaminated soil during the remedial action triggers a requirement for a groundwater investigation. Fulcrum proposes to direct and oversee the installation of three (3) groundwater monitoring wells at the site. One (1) well will be placed near the southwest property boundary to represent upgradient conditions. A second well will be placed near the center of the site beneath the location of the 2022 leaking AST. The third well will be placed at the north edge of the site prior to the location of the clay barrier. See Figure 9 for a graphic representation of proposed well locations.

Wells will be installed to 22-ft bgs and screened for the bottom 10-feet. Groundwater sampling will specifically target potential groundwater presence above the clean clay layer at 22 ft bgs. The wells will be constructed and developed in accordance with best practices. Following installation, groundwater will be sampled to investigate potential groundwater contamination.

- Gasoline by Northwest Total Petroleum Hydrocarbons (NWTPH)-Gx
- Diesel and Heavy Oil by NWTPH-Dx
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)



16.0 CONCLUSIONS

On April 25, 2022, Four Star Supply Inc. (Four Star) identified a diesel fuel leak from an Above Ground Storage Tank (AST) located on Parcel 10850058130001 in Pullman, Washington. The diesel leaked into a concrete secondary containment that failed resulting in discharge to site soils beneath the concrete. The leak resulted in a discernable sheen to the adjacent South Fork Palouse River. Initial response activities consisted of placement of containment booms and sorbent pads within the SFPR and the use of absorbent clay to remove the spilt diesel fuel from the secondary containment. Reported calculations indicated that approximately 400-gallons of diesel fuel were released from the failed AST.

Emergency services, Department of Transportation, and Department of Ecology staff responded to the accident. Fulcrum Environmental Consulting, Inc. (Fulcrum) was retained by Four Star to respond to the initial event, assist with regulatory permitting documents, oversee independent cleanup actions for the release, conduct confirmatory sampling, and to prepare this project summary report. Able Clean-up Technologies Inc. (Able) was retained by Four Star to provide spill response and cleanup services. Plateau Archaeological Investigations, LLC (Plateau) was retained by Four Star to conduct Archaeological monitoring during excavation activities.

Remedial excavation of contaminated site soils was performed in two (2) phases. Phase I initial remedial excavation for diesel contaminated soil associated with the April 2022 fuel release and Phase II remedial excavation of historical petroleum contaminated soils. Laboratory analytical identified the contaminants of concern (COCs); gasoline, diesel, benzene, toluene, ethylbenzene, and xylenes to be above MTCA Method A Cleanup Levels throughout site soils.

A total of 4,246 loose cubic yards of PCS was excavated from the site and transported to Roach Construction Land Farm located in Genesee, Idaho for treatment. Fulcrum collected a total of 42 characterization samples during the remediation process and 85 final excavation confirmation samples. Analytical results indicate that all current and historically contaminated soil was removed from the subject site other than residual PCS located along the stream bank and select property margins where it was retained to protect NW State Street, Poplar Street, and an adjacent building.

A clay barrier was placed between the site and the river to protect it from any potential groundwater impact associated with the remaining PCS. A clay cap was also placed in the river extending approximately five (5) feet out from the bank to provide added protection to the river from PCS remaining beneath the five (5) feet of retained riverbank.

The site is exempt from TEE requirements based on exclusion 3 (Undeveloped Land WAC 173-340-7491(1)(c)).

Fulcrum proposes to conduct Vapor Encroachment Screening in the adjacent building if allowed by the property owner and to place three (3) groundwater monitoring wells to be monitored for potential groundwater contamination.



Fulcrum does not recommend the site be considered for a “No Further Action” determination at this time.

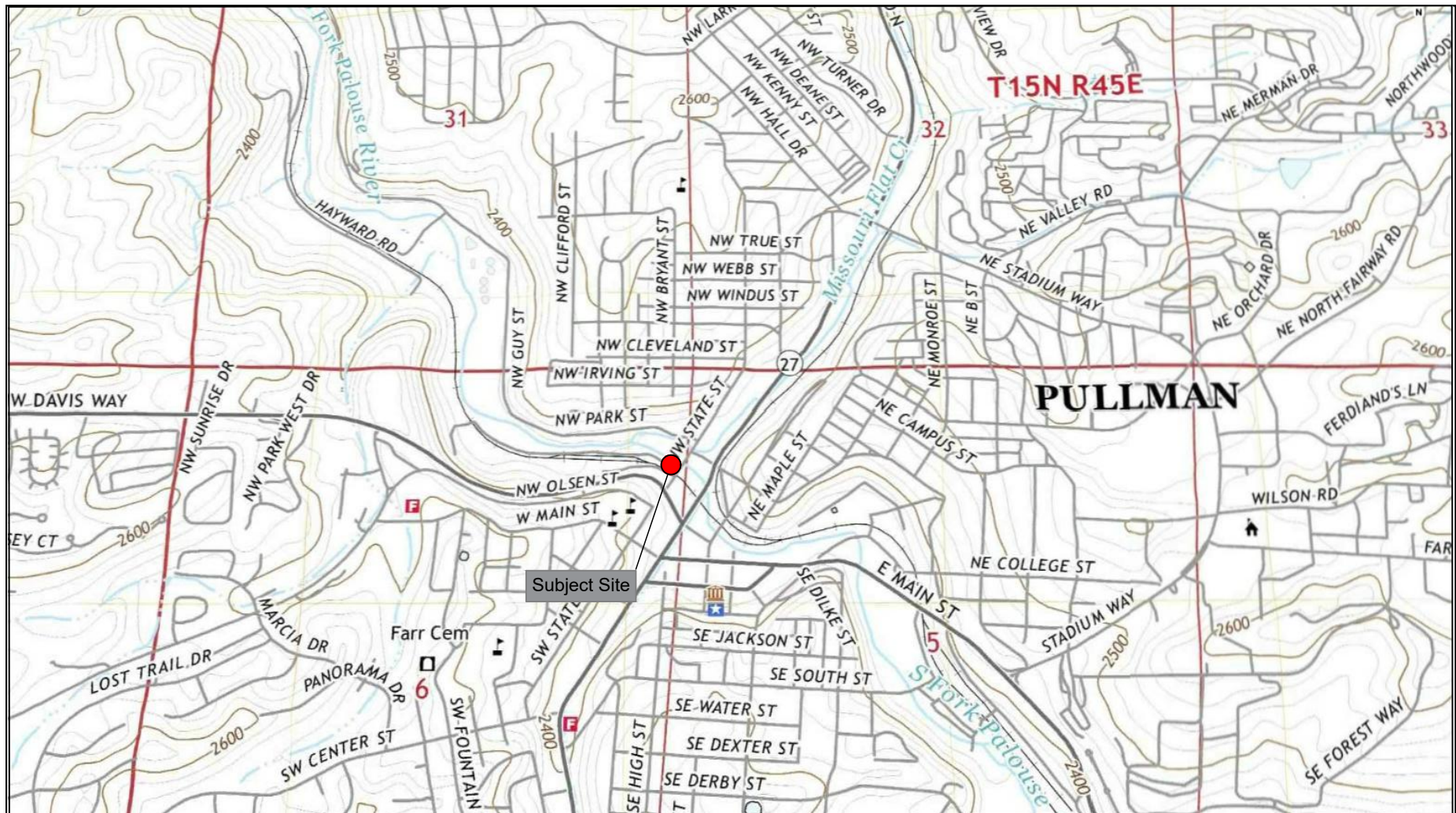
11.0 LIMITATIONS

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.

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



LEGEND

● Subject Site Location

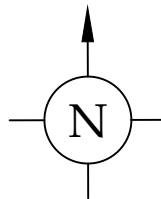


Figure 1: Four Star Supply Site Location Map

355 Northwest State Street
Pullman, Washington 99163



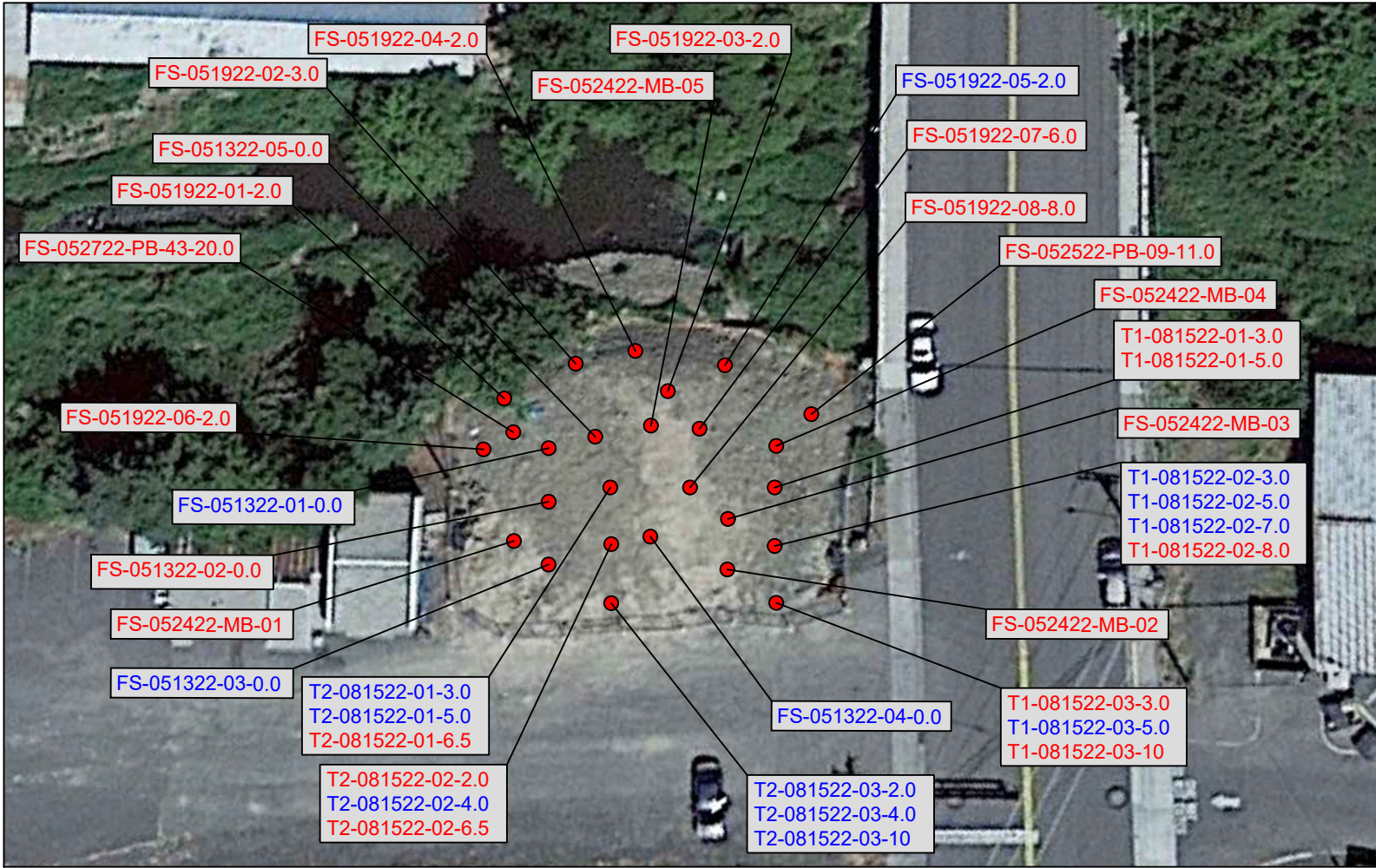
FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Nick Hays

PROJECT NUMBER: 223516.00

Date: February 28, 2023

REVIEWED BY: Travis Trent



LEGEND

Below Method A Clean-Up Levels

Above Method A Clean-Up Levels

All soil represented by characterization samples have been removed and disposed of as PCS.

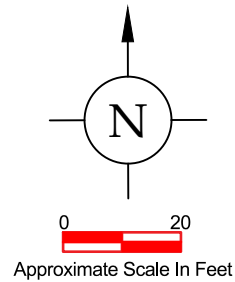
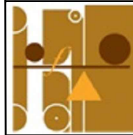


Figure 2: Characterization Soil Sample Location Map

355 Northwest State Street
Pullman, Washington 99163



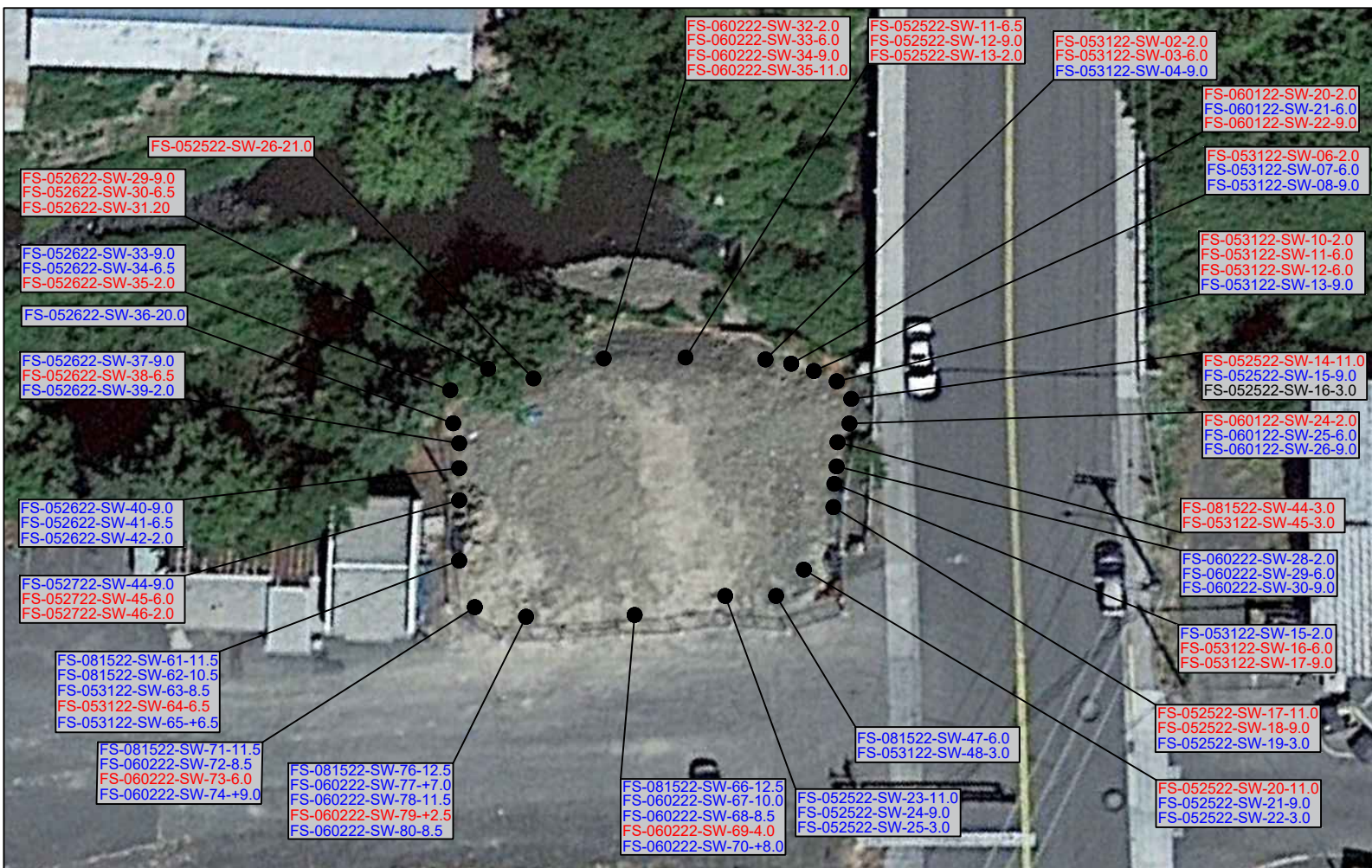
FULCRUM ENVIRONMENTAL CONSULTING, INC.
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SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken

UPDATED: March 21, 2023

PROJECT NUMBER: 223516.00

REVIEWED BY: Travis Trent



Sample ID = FS-DATE-SW/PB-Sample Number- xx.x
 Side Wall Pit Bottom Depth (in feet)

Below Method A Clean-Up Levels

Above Method A Clean-Up Levels

LEGEND

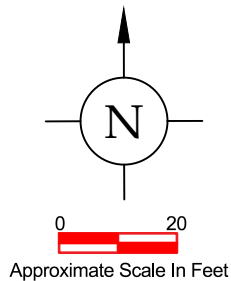


Figure 3: Sidewall Confirmation Soil Sample Location Map

355 Northwest State Street
 Pullman, Washington 99163



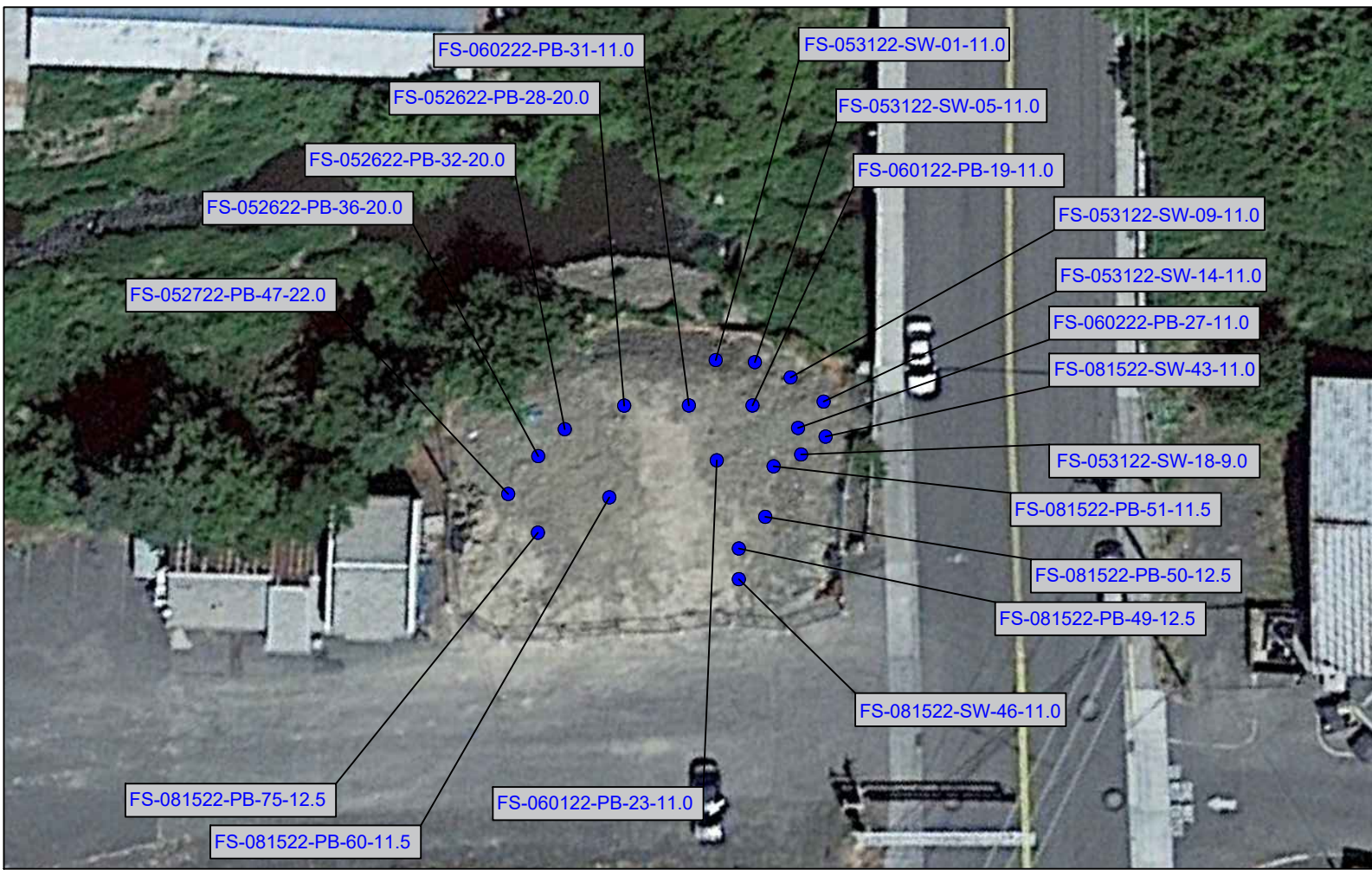
FULCRUM ENVIRONMENTAL CONSULTING, INC.
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 SPOKANE, WASHINGTON 99201
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MAP BY: Ethan Ducken

UPDATED: March 21, 2023

PROJECT NUMBER: 223516.00

REVIEWED BY: Travis Trent



Sample ID = FS-DATE-SW/PB-Sample Number- xx.x
 Side Wall Pit Bottom Depth (in feet)

Below Method A Clean-Up Levels

Above Method A Clean-Up Levels

LEGEND

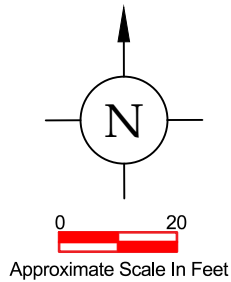


Figure 4: Pit Bottom Confirmation Soil Sample Location Map

355 Northwest State Street
 Pullman, Washington 99163



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




MAP BY: Ethan Ducken

UPDATED: March 21, 2023

PROJECT NUMBER: 223516.00

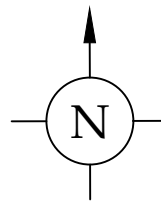
REVIEWED BY: Travis Trent



-  Excavation Area Backfilled with Clean Material
-  Confirmed petroleum contaminated soil
-  Undisturbed clean soil
-  Extent of Four Star Property
-  Confirmation soil sample location

Delineation of full extent of offsite contamination was beyond the scope of work for this project

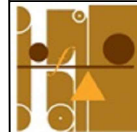
LEGEND



0 20
Approximate Scale In Feet

Figure 5: Remaining PCS Location Map

355 Northwest State Street
Pullman, Washington 99163



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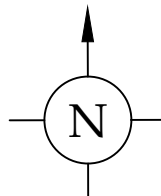
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Approximate Excavation Boundary



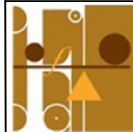
Clay Barriers



Approximate Scale In Feet

Figure 6: Aerial View of Engineered Clay Barriers

355 Northwest State Street
Pullman, Washington 99163



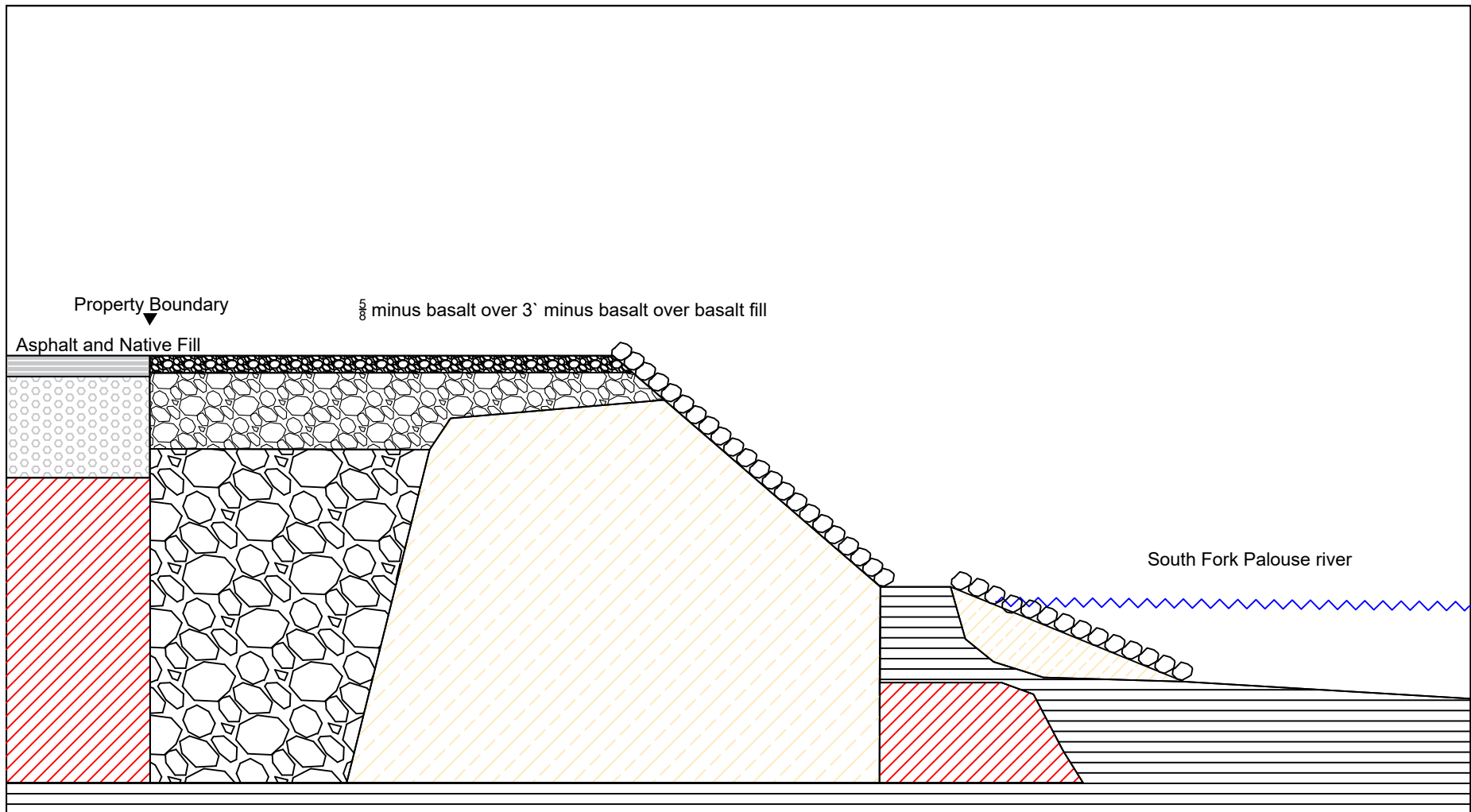
FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken

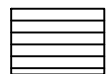
Date: March 21 2023

PROJECT NUMBER: 223516.00

REVIEWED BY: Travis Trent



LEGEND



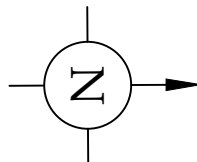
Clean naturally occurring clay and silt



Presumed petroleum contaminated soil



Clay Barriers



* Not To Scale *

Figure 7: Section View of Engineered Clay Barriers

355 Northwest State Street
Pullman, Washington 99163



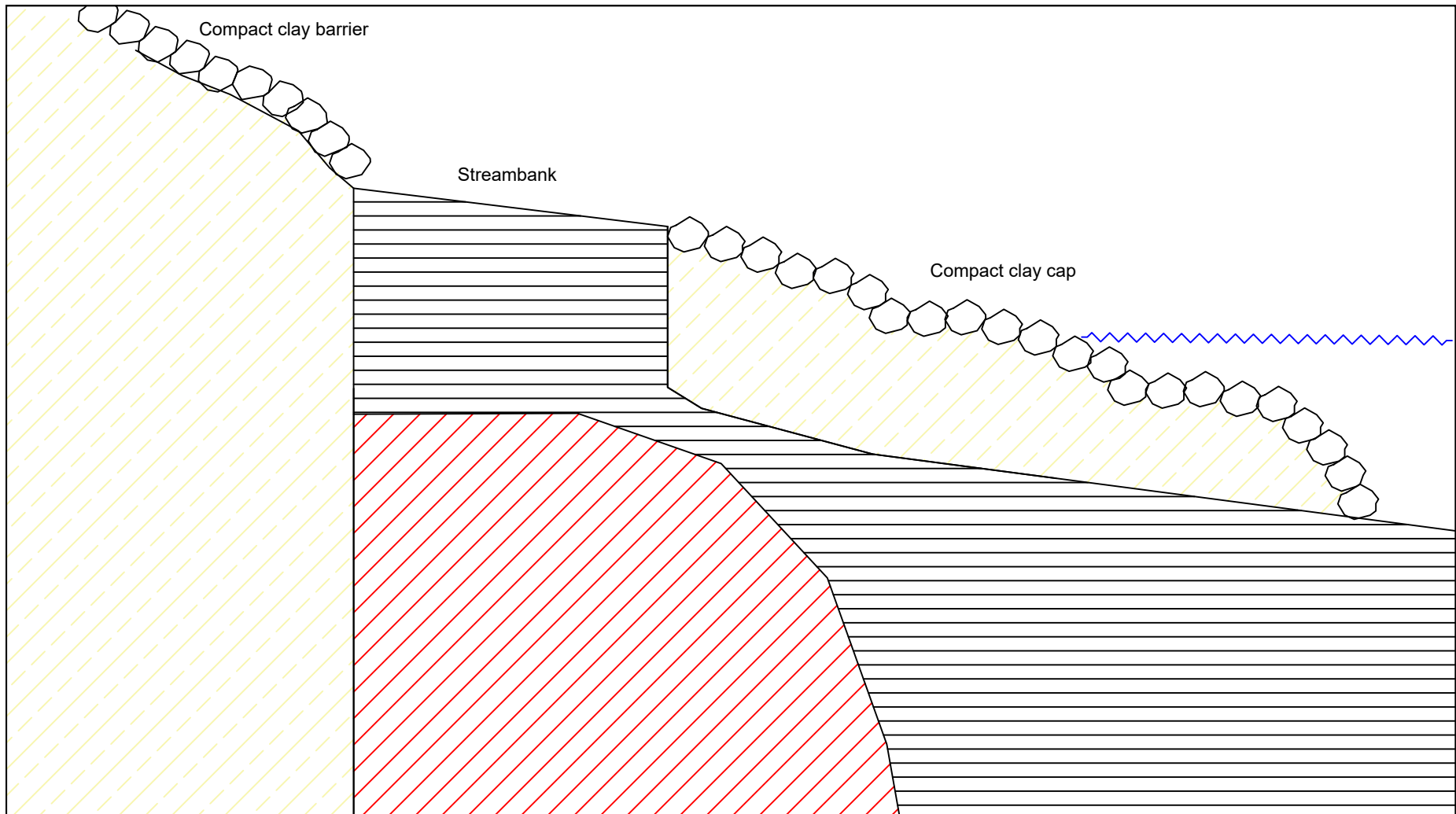
FULCRUM ENVIRONMENTAL CONSULTING, INC.
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MAP BY: Ethan Ducken

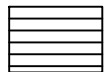
DATE: March 21, 2023

PROJECT NUMBER: 223516.00

REVIEWED BY: Travis Trent



LEGEND



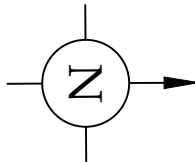
Clean naturally occurring clay and silt



Presumed petroleum contaminated soil



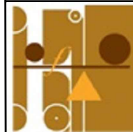
Engineered clay cap and barrier



Approximate Scale In Feet

Figure 8: Section View of Engineered Shoreline Cap

355 Northwest State Street
Pullman, Washington 99163



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MAP BY: Ethan Ducken

PROJECT NUMBER: 223516.00

DATE: March 21, 2023

REVIEWED BY: Travis Trent



LEGEND

 Proposed Groundwater Monitoring Well Installation Locations

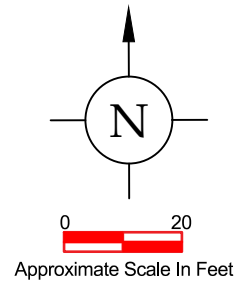
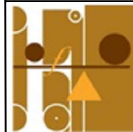


Figure 9: Proposed Groundwater Monitoring Well Installation Locations

355 Northwest State Street
Pullman, Washington 99163



FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken

Date: March 21, 2023

PROJECT NUMBER: 223516.00

REVIEWED BY: Travis Trent



APPENDIX A

Relevant Professional Certifications

Northwest Environmental Training Center

Scott Groat

Has completed the requirements for

Certified Erosion and Sediment Control LEAD

as defined by WA DOE and OR DEQ

Completed: 2/1/2021

Certification Expires: 2/1/2024

ID#: 82953





STATE OF WASHINGTON

DEPARTMENT OF LICENSING – BUSINESS AND PROFESSIONS DIVISION

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



GEOLOGIST

SCOTT MICHAEL GROAT
99 S CEDAR ST
POST FALLS ID 83854-9740

22034387

License Number

11/17/2022

Issue Date

12/03/2023

Expiration Date

Teresa Berntsen

Teresa Berntsen, Director



THIS CERTIFIES THAT

TRAVIS LYLE TRENT

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

**CERTIFIED HAZARDOUS MATERIALS MANAGER®
CHMM®**

January 30, 2014

DATE OF CERTIFICATION

16533

CREDENTIAL NUMBER

June 30, 2024

CERTIFICATION EXPIRES

A handwritten signature in black ink, appearing to read "Eugene A. Guilford, Jr.", is written over a horizontal line.

EUGENE A. GUILFORD, JR.
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
GEOLOGIST PROGRAM
PO Box 9012
Olympia, WA 98507-9012



Travis L Trent
1127 W 8th Ave
Spokane WA 99204-3107





APPENDIX B

Site-Specific Health and Safety Plan

**FOUR STAR SUPPLY, INC.
DIESEL CONTAMINATED SOIL
SITE SPECIFIC
HEALTH AND SAFETY PLAN**

**Four Star Supply, Inc.
355 Northwest State Street
Pullman, Washington 99163**

Project Number: 223516.00

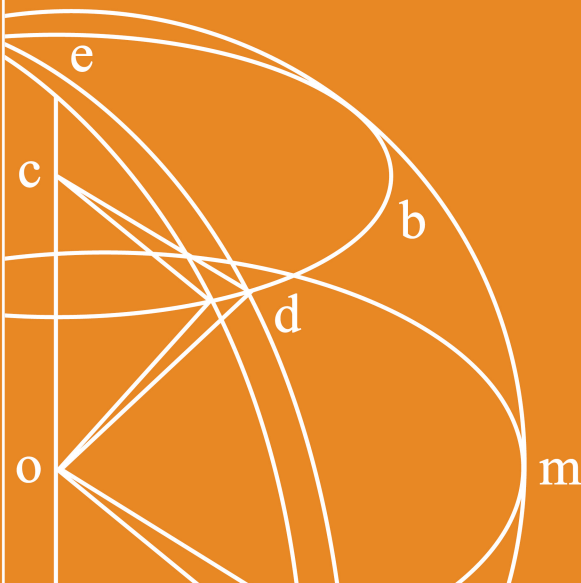
May 13, 2022

Prepared for:

Four Star Supply, Inc.
Attn: Kevin McDonnell
355 Northwest State Street
Pullman, Washington 99163

Prepared by:

Fulcrum Environmental Consulting, Inc.
Travis Trent, CIH, PG
207 West Boone Avenue
Spokane, Washington 99201
509.459.9220





SITE HEALTH AND SAFETY PLAN (HASP)

FOR PETROLEUM SPILLS

INCIDENT NAME:	Four Star Supply Fuel Spill
Command Post Location and Address:	355 NW State Street Pullman, WA 99163
Prepared by:	Travis Trent, CIH, CSP
Date Prepared:	5/13/2022
Spill Description and FEMA Type (1-4):	Leak of ~785 gallons of red dye diesel resulting in impact to underlying soils and the South Fork Palouse River.

PURPOSE

This Site Health and Safety Plan (HASP) template is designed to help emergency responders comply with applicable Washington Labor and Industry requirements ([WAC 296-843-12005](#)) when working petroleum spills in Washington State. Washington Labor and Industry requirements are just as, or in some cases stricter than federal requirements. The Safety Officer is responsible for completing this plan until he or she delegates it to a qualified Assistant Safety Officer.

Health and Safety Plan Format (2-parts)

This HASP is formatted into two parts: the Main Document and Appendices.

Main Document

This main document serves as the incident HASP and provides general guidance related to hazard analysis, site control, comprehensive work plans, organizational structure, and personal protective equipment. It is used as a reference tool for general orientations and briefings of site workers. Any additional safety considerations discovered during the initial assessment are unique to a specific worksite and are addressed in Section 11 of the ICS 204a form (Work Assignment), and discussed at the safety meeting prior to each operational period.

Appendices

The appendices in this HASP contain additional elements and detailed information for various safety and health hazards relevant to petroleum spills. After the Hazard Analysis is performed, the Safety Officer is responsible for selecting and including the appropriate appendices to include in the final Safety Plan based on incident hazards for each work area. They are to be used



in conjunction with the Main Document of the HASP. The selected Appendices and Main Document should be reviewed in safety meetings.

Distribution: All Command Post and field personnel will read and sign the current HASP when they initially arrive at the response. The Operations Section Chief, Branch Directors, Division Supervisors, and Task Force Leaders will receive an updated copy of the plan. They must ensure it is available onsite for all personnel to review. All new personnel reporting to the incident MUST review the HASP, sign to acknowledge they have read the HASP, and discuss any questions or concerns with their direct supervisor or lead.

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- 1.1 Assignment of Health and Safety Responsibilities
- 1.2 Duties of Incident Safety Officer
- 1.3 Duties of Assistant Safety Staff
- 1.4 Safety Duties of Site Workers

2.0 Work Activities

- 2.1 Proposed Work Activities

3.0 Hazard Analysis

- 3.1 Job Hazard Analysis
- 3.2 Incident Action Plan Safety Analysis (ICS form 215a)
- 3.3 Work Task Safety Reference Guide

4.0 Site Control

- 4.1 Emergency Egress and Refuge
- 4.2 Site Maps
- 4.3 Site Work Zones
- 4.4 “Buddy System”
- 4.5 Site Communications
- 4.6 Safe Work Practices
- 4.7 Reporting Unsafe Conditions or Practices
- 4.8 Medical Assistance (if unsure about an injury: call 911)
- 4.9 Site-Specific Safety (Tailgate) Meetings

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7.0 Personal Protective Equipment (PPE)

- 7.1 Specific PPE Requirements
- 7.2 Methods of PPE Effectiveness and Evaluation
- 7.3 Criteria for PPE Selection
- 7.4 Procedures for PPE Donning
- 7.5 Procedures for PPE Doffing



8.0 Additional Elements/Appendices

Figure 1: Site Vicinity Map

9.0 Additional Elements/Appendices

- 9.1 Properties of Typical Oil Products and Air Monitoring Information - Appendix **A**
- 9.2 Wildlife Safety and Handling - Appendix **aa**
- 9.3 Command Post (CP) Hazards - Appendix **B**
- 9.4 Noise and Hearing Protection - Appendix **bb**
- 9.5 Mobilization and Demobilization - Appendix **C**
- 9.6 Site-Specific Safety (Tailgate) Meetings - Appendix **cc**
- 9.7 Traffic and Roadside Safety - Appendix **D**
- 9.8 Boat Operations - Appendix **E**
- 9.9 Shoreline Assessment and Operations - Appendix **F**
- 9.10 Heat Stress - Appendix **G**
- 9.11 Cold Stress - Appendix **H**
- 9.12 Safety Data Sheets (MSDS or SDS) - Appendix **I**
- 9.13 Sampling and Monitoring Plan - Appendix **J**
- 9.14 Site Control - Appendix **K**
- 9.15 Worker and Equipment Decontamination (Decon) - Appendix **L**
- 9.16 Drum and Container Handling: Spill prevention and Containment Plans - Appendix **M**
- 9.17 Confined Spaces (Entry Procedures for Tanks and Vaults) - Appendix **N**
- 9.18 Training, Briefings, and Information Plan - Appendix **O**
- 9.19 Medical Surveillance Plan - Appendix **P**
- 9.20 Sanitation-Potable Water, Toilets, Personal Hygiene Facilities - Appendix **Q**
- 9.21 Lighting - Appendix **R**
- 9.22 Excavation, Trenching, and Shoring - Appendix **S**
- 9.23 Record Keeping and Information Access - Appendix **T**
- 9.24 Helicopter Operations/Air Operations Safety - Appendix **U**
- 9.25 Organization Assignments and Responsibilities - Appendix **V**
- 9.26 Injury and Incident Reporting - Appendix **W**
- 9.27 In-Situ Burning - Appendix **X**
- 9.28 Dispersant Application Hazards - Appendix **Y**
- 9.29 Night Operations Safety - Appendix **Z**
- 9.30 Job Hazard Analysis – Appendix **zz**

10.0 Tables

- 10.1 Action Levels, Respiratory Protection and Monitoring
- 10.2 Job Hazard Analysis Reference Guide



1.0 Assignment of Safety Responsibilities

1.1 Assignment of Health and Safety Responsibilities

The Incident Commander will assign overall site health and safety responsibilities to a designated Incident Safety Officer (SO). The SO may have assistants as necessary, and the assistants may also represent assisting agencies or jurisdictions.

1.2 Duties of Incident Safety Officer (SO)

The primary duties of the SO are to monitor and assess hazardous and unsafe situations, develop and recommend measures to assure personnel safety, and to assist and/or anticipate hazardous and unsafe situations. The SO supervises assigned staff and reports to the Incident Commander and Unified Command.

1.3 Duties of Assistant Safety Staff (ASO)

The duties of the ASOs are to support the Safety Officer with their tasks, deliverables and meetings. Examples include but are not limited to the Health and Safety Plan (ICS-208) creation and distribution, working on the Ops Planning Worksheet (ICS-215a), and attending necessary meetings. ASOs may have specific responsibilities such as air operations, hazardous materials, and others.

1.4 Safety Duties of Site Workers

Site workers are responsible for working in a safe manner. This includes Safety Plan review, attending daily safety tailgate meetings, wearing proper PPE, reporting safety concerns to supervisor, and staying alert of potential hazards.

2.0 Work Activities

2.1 Proposed Work Activities

Current work activities and overall incident objectives can be found in the ICS 201 or 202 forms for the current operational period.

Work activities for the next operational period will be outlined in the ICS 202 or 215 forms (Incident Objectives or Operational Planning Worksheet) and is created by Operations, Planning and Logistics Sections. An ICS 204 Work Assignment List will be provided to Division and Group supervisors, and outlines daily work assignments and site-specific safety messages. This safety plan will address all proposed work activities for the current operational period. A Site Vicinity Map is presented as Figure 1.

3.0 Hazard Analysis

A hazard analysis is the identification and evaluation of on-site safety and health hazards believed to be present at this specific response, based on the planned work activities for the current operational period. It is the responsibility of the Safety Officer (SO) to add hazards that



are identified in this HASP and provide recommendations for assuring personnel safety. It is the responsibility of every worker to work through their chain of command to notify the SO of hazards identified onsite that are not initially included in this HASP.

3.1 Job Hazard Analysis

A Job Hazard Analysis shall be done for each work task that is identified in the Comprehensive Work Plan/Incident Action Plan (ICS 215). The outcome of each analysis shall be discussed at the daily on-site safety tailgate meeting.

3.2 Incident Action Plan Safety Analysis (ICS 215a form)

The Safety Officer and their staff will develop an Incident Action Plan Safety Analysis (ICS 215a) to help prioritize hazards and safety and health issues, and to develop appropriate controls. The information in the ICS 215a form can be used to help supervisors and leads in developing their Job Hazard Analysis during each operational period.

3.3 Work Task Safety Reference Guide

Also reference Table 9.2-Job Hazard Analysis Reference Guide in this HASP for a list of safety hazards and accompanying information often found at oil spill incidents.

4.0 Site Control (Additional information in Appendix K)

An up-to-date site control plan will be created prior to on-site operations commencing to minimize employee exposure to hazardous substances.

4.1 Emergency Egress and Refuge

Emergency egress routes and safe refuge areas will be clearly defined during the pre-entry site safety meeting for entry into a hot zone. Emergency egress from hot zone sites will proceed via the decontamination corridor (if possible) to an evacuation route designated during the daily safety tailgate meeting. In the Command Post, exit routes will be clearly posted in plain sight for emergency egress. The meeting/muster area will be communicated to Command Post personnel in the event of an emergency evacuation. Roll-call will be taken to ensure all Command Post personnel are accounted for. See appendices K and L for help establishing entry and exit corridors.

4.2 Site Maps

A site map for each work area will be documented prior to work commencing. This can be done in an ICS 204 Work Assignment List and reviewed at the daily safety tailgate meeting.

4.3 Site Work Zones

Work sites will be divided into a hot zone, warm zone, and cold zone whenever it is needed in order to isolate contaminated areas.

- Hot zones will be marked by barrier tape, signs, or similar markings and will have controlled entry/egress. Adjacent to a hot zone will be the warm zone/contamination reduction zone. All hot zone movement will be through the warm zone, also demarcated by barrier tape, signs, etc.



- The cold zone/support zone will be, ideally, upwind of the warm and hot zones, and all staging, equipment storage, etc., will take place in this zone.
- Solo work in the hot zone is prohibited.
- No eating, drinking, smoking, or use of tobacco products will take place inside of the hot or warm zones.

Site Work Zones will be documented in the Site Map and reviewed at the daily safety tailgate meeting.

4.4 The “Buddy System”

The Buddy System (working with a partner) will be followed as often as reasonably possible. If working in pairs is not possible, there will be check-in procedures written and followed that allow for communication between the lone worker and their supervisor/colleague. This allows the supervisor to remain in contact with the lone worker to ensure his or her safety. If the lone worker is not able to be reached, the supervisor/colleague will begin operations to physically check on the lone worker.

Buddy System specifics can be documented in and reviewed at the daily safety tailgate meeting.

4.5 Site Communications

A communications plan will be documented for each site-specific work area, including how employees are alerted during emergencies. Each site-specific work area will have an ICS 204 form that documents personnel at that site and contact information. The ICS 204 is part of the Incident Action Plan. The communication plan can be documented and reviewed at the daily safety tailgate meeting.

4.6 Safe Work Practices

Site-specific safe work practices will be outlined and discussed prior to work commencing each day. This should be documented in the Job Hazard Analysis (JHA) (ICS 215a form) and reviewed at the daily safety tailgate meeting.

4.7 Reporting Unsafe Conditions or Practices

Each worker should be alert to the existence of unsafe conditions or practices that might exist within their area of operation. Unsafe conditions or practices must be immediately reported to a supervisor or lead and routed to a Safety Officer. The supervisor and Safety Officer will then take steps to correct unsafe conditions and practices, as appropriate.

Unresolved concerns by any worker should be referred to the Safety Officer for further attention. When activities are judged to involve an Immediately Dangerous to Life and Health (IDLH) situation or imminent danger condition, any worker has the authority to alter, suspend, or terminate those activities.

4.8 Medical Assistance

The nearest hospital to the Command Post is: Pullman Regional Hospital

Medical assistance should be administered only by those trained to do so. However, if conditions exist, you can administer medical assistance and be covered under the Good Samaritan Act (see



RCW 4.24.300). A map and description outlining the nearest hospital shall be provided for each work area and be documented prior to work commencing.

4.9 Site-Specific (Tailgate) Safety Meetings

Site-Specific Safety Meetings (also called safety tailgate meetings) will be held at the beginning of each day/shift for every crew working in the field. The purpose of these meetings is to maintain a high level of awareness on health and safety issues during the work outlined in the work plan. A form to document and outline contents of these meetings is provided in Appendix cc.

5.0 Comprehensive Work Plans

A written comprehensive work plan of tasks, objectives, logistics, and resources for site operations must be used for each work area. The overall incident work plan is the Incident Action Plan (IAP) for the current operational period. The site-specific work plan is the ICS-204 form (Assignment List).

The comprehensive work plan must address the following:

- Anticipated on-site activities and normal operating procedures.
- Define work tasks and objectives.
- Describe how the work tasks and objectives will be accomplished.
- Describe the personnel requirements to implement the work plan.
- Make sure employees and subcontractors have the training and information needed to work safely.
 - All site workers who will be exposed, or have the potential to be exposed, to hazardous substances, health hazards, and/or safety hazards will have received the appropriate level of training for hazardous waste operations training in accordance with 29 CFR 1910.120 and WAC 296-843-200. Contractor and sub-contractor entities are responsible to ensure their employees meet these requirements. Crew supervisors, etc., who are leading the daily safety tailgate meetings will verbally confirm with each worker that they hold valid certifications for the work at hand, as required.
 - All non-working visiting personnel including government employees, liaisons, and media will not be allowed in restricted zones unless they demonstrate they have an appropriate valid and current certification as required.

6.0 Organization Chart/Organization Assignment List

(Additional information in Appendix V)

The Organization Chart must be attached to this document.

An organizational structure that reflects current site operations is required, and must include the following:

- Establish and identify the chain of command.



- Identify the site safety and health supervisor and other personnel responsible for employee safety and health.
- Specify the overall responsibilities of supervisors and employees.
- Include the name and title of the person with responsibility and authority to direct all hazardous waste operations.
- Include a site safety and health supervisor responsible for developing and implementing the HASP and verifying compliance.
- Identify the functions and responsibilities of all personnel needed for hazardous waste operations and emergency response.
- Identify site-specific lines of authority, responsibility, and communication.

7.0 Personal Protective Equipment (PPE)

A PPE Plan must be made that addresses the following:

- Site hazards and activities.
- Methods to evaluate the effectiveness of the PPE plan.
- Criteria for selecting and fitting PPE, including work duration, use limitations of particular PPE, and medical considerations such as temperature extremes and heat stress.
- Training on PPE use.
- Procedures for putting on and taking off PPE.
- PPE inspection procedures prior to, during, and after use.
- Decontamination and disposal of PPE.
- Maintenance and storage of PPE.

A site supervisor or site Safety Officer will monitor during donning and doffing to ensure proper fitting and procedures.

- PPE will be stored in an environmentally controlled location per manufacturer's recommendations.
- A lower level of protection than the minimum defined by task will not be utilized unless the Safety Officer or authorized representative has approved its use.
- PPE will be inspected for condition (rips, tears, discoloration, and shelf-life, if any) prior to use.
- Disposal of PPE will be bagged and evaluated for proper disposal options, per the Waste Management Plan.

7.1 Specific PPE Requirements

See the Job Hazard Analysis table in the following pages to find your specific job tasks and the associated PPE recommendations.

7.2 Methods of PPE Effectiveness and Evaluation

- A lower level of protection than the minimum defined by task will not be utilized unless the Safety Officer or authorized representative has approved its use.
- The wearer must inspect PPE for breakthrough or failure.



- Determine end-of-service life for respirator cartridges being used.
- The Safety Officer will perform an incident investigation on every injury/safety incident, and will include the effectiveness of PPE.
- Roaming field safety staff will be assessing PPE effectiveness.
- Field supervisors will be checking effectiveness of all PPE worn by field personnel.

7.3 Criteria for PPE Selection

PPE will be selected considering the following criteria:

- Compatibility with contaminants.
- Ensure appropriateness of work being performed, i.e.:
 - Chemical hazards
 - Abrasion resistance
 - Physical limitations of the PPE (SCBA vs. Air Purifying Respirator [APR])
 - Work duration and environmental conditions

7.4 Procedures for PPE Donning

- Inspect coveralls prior to donning, and do not use if there are signs of rips or degradation.
- Remove your boots and don the coverall legs first, then arms. For two-piece ensembles, first don the pants, then the coat.
- Zip up or fasten the coveralls.
- Pull on work boots, placing the coveralls over the outside of the boots.
- If a respirator and coverall hood are to be worn, first put on the respirator, then pull the hood over your head.
- Pull on your gloves; inner gloves (if two pair are to be worn), then outer gloves.
- If procedures call for taping up, have your buddy tape your coveralls to your boots, gloves and/or respirator mask, leaving doffing tabs for easy removal.
- Prior to entering the work zone, perform a buddy inspection to ensure proper PPE fit.

7.5 Procedures for PPE Doffing

- If the suit is heavily contaminated, perform a cross decontamination by wiping off contaminants.
- Dry decontamination, or just a boot decontamination, may be appropriate for the contaminants. If wet decontamination is used (see Appendix L), proceed through the identified decontamination process with help from a decontamination assistant.
- If tape was used, remove it from the mask, gloves and/or boots.
- Outer gloves, if used, can be removed.
- With help from a buddy, remove the coveralls by rolling the suit inside-out, away from the body.
- Remove any respirator mask, then remove inner gloves by turning them inside-out.
- Store used PPE in a plastic bag until the disposal method has been determined.
- Disposal of PPE will be bagged and evaluated for proper disposal options, per the Waste Management Plan.



8.0 Additional Elements/Appendices

Health and Safety Plan Appendices			
<input checked="" type="checkbox"/>	8.1	Properties of Typical Oil Products and Air Monitoring Information	Appendix A
<input checked="" type="checkbox"/>	8.2	Command Post (CP) Hazards	Appendix B
<input checked="" type="checkbox"/>	8.3	Mobilization and Demobilization	Appendix C
<input checked="" type="checkbox"/>	8.4	Traffic and Roadside Safety	Appendix D
<input type="checkbox"/>	8.5	Boat Operations	Appendix E
<input checked="" type="checkbox"/>	8.6	Shoreline Assessment and Operations	Appendix F
<input checked="" type="checkbox"/>	8.7	Heat Stress	Appendix G
<input checked="" type="checkbox"/>	8.8	Cold Stress	Appendix H
<input checked="" type="checkbox"/>	8.9	Safety Data Sheets (MSDS or SDS)	Appendix I
<input checked="" type="checkbox"/>	8.10	Sampling and Monitoring Plan (see WAC 296-843-130)	Appendix J
<input checked="" type="checkbox"/>	8.11	Site Control (see WAC 296-843-140)	Appendix K
<input checked="" type="checkbox"/>	8.12	Worker and Equipment Decontamination (Decon) (see WAC 296-843-150)	Appendix L
<input checked="" type="checkbox"/>	8.13	Drum and Container Handling: Spill Prevention and Containment Plans (see WAC 296-843-180)	Appendix M
<input type="checkbox"/>	8.14	Confined Spaces (Entry Procedures for Tanks and Vaults) (see chapter 296-809 of WAC)	Appendix N
<input checked="" type="checkbox"/>	8.15	Trainings, Briefings, and Information Plan (see WAC 296-843-200)	Appendix O
<input checked="" type="checkbox"/>	8.16	Medical Surveillance Plan (see WAC 296-843-210)	Appendix P
<input checked="" type="checkbox"/>	8.17	Sanitation-Potable Water, Toilets, Personal Hygiene Facilities	Appendix Q
<input type="checkbox"/>	8.18	Lighting (see WAC 296-800-210)	Appendix R
<input checked="" type="checkbox"/>	8.19	Excavation, Trenching, and Shoring (chapter 296-155 WAC Part N- excavation/trenching/shoring)	Appendix S
<input checked="" type="checkbox"/>	8.20	Record Keeping and Information Access (see WAC 296-843-220)	Appendix T
<input type="checkbox"/>	8.21	Helicopter Operations/Air Operations Safety	Appendix U
<input checked="" type="checkbox"/>	8.22	Organization Assignments and Responsibilities	Appendix V
<input checked="" type="checkbox"/>	8.23	Injury and Incident Reporting	Appendix W
<input type="checkbox"/>	8.24	In-Situ Burning	Appendix X
<input type="checkbox"/>	8.25	Dispersant Application Hazards	Appendix Y
<input type="checkbox"/>	8.26	Night Operations Safety	Appendix Z
<input type="checkbox"/>	8.27	Wildlife Safety and Handling	Appendix aa
<input checked="" type="checkbox"/>	8.28	Noise and Hearing Protection	Appendix bb
<input checked="" type="checkbox"/>	8.29	Site-Specific (Tailgate) Safety Meetings	Appendix cc



9.0 Tables





Table 9.1-Action Levels, Respiratory Protection and Monitoring

<u>Hazard/Concern</u>	<u>REL/TWA</u>	<u>Action Level</u>	<u>Air Monitoring Instrument/Results</u>
Benzene	0.1 ppm (TWA) [REL] IDLH=Ca (500 ppm)	0 – 0.1 ppm → Level D 0.1 – 5 ppm → Level C (full face APR) 5 – 1200 ppm → Level B	Benzene-specific meter:
Lower Explosive Limit (LEL)	>10 %	Leave the area if the LEL level reaches 10% Consult with supervisor and site Safety Officer	Air monitoring instrument with <u>LEL</u> capabilities:
Hydrogen Sulfide (H₂S)	10 ppm (REL – 10-minute maximum) IDLH=100 ppm	<1 ppm → Level D 1 – 10 ppm → Level C 10 – 4000 ppm → Level B	Air monitoring instrument with <u>H₂S</u> sensor installed:
Volatile Organic Compounds (VOCs)	NA (THC=Total Hydrocarbons)	<u>Gasoline</u> : 10 – 1000 ppm THC → Level C >1000 ppm, at or near LEL → Leave Area! <u>Diesel</u> : 10 – 300 ppm THC → Level C >300 ppm, at or near LEL → Leave Area! <u>Crude Oils</u> : 10 – 600 ppm THC → Level C >600 ppm, at or near LEL → Leave Area!	Air monitoring instrument with <u>PID/FID</u> capabilities:
Sulfur Dioxide (SO₂)	2 ppm (TWA) 5 ppm (STEL) IDLH=100 ppm	0 – 2 ppm → Level D 2 – 100 ppm → Level C 100+ ppm → Level B	Air monitoring instrument with <u>SO₂</u> sensor installed:
Oxygen (O₂)	NA	<19.5% → SCBA Required >23.5% → Exit site <i>immediately</i> and consult your supervisor and site Safety Officer	Air monitoring instrument with <u>O₂</u> sensor installed:

This form can be used by personnel in the field to document air monitoring results.



LEGEND

-  Flow direction
-  South Fork Palouse River
-  Approximate excavation area
-  Staging and storage area

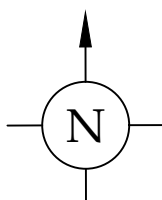
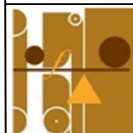


Figure 1: Four Star Supply Site Vicinity Map

355 Northwest State Street
Pullman, Washington 99163



FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken

PROJECT NUMBER: 223516.00

DATE: May 12, 2022

REVIEWED BY: Scott Groat

Appendix A

Properties of Typical Oil Products and Air Monitoring Information

*Properties of Typical Oil Products

This table outlines some useful information of Known or Suspected Petroleum Compounds.

NOTE: MSDS/SDS for each product involved must be attached in **Appendix I**.

<u>Compound</u>	<u>REL/TWA</u>	<u>Common Routes of Exposure</u>	<u>Acute Symptoms</u>	<u>IDLH</u>	<u>Odor Description</u>
Benzene	0.1 ppm	Inhalation, Ingestion, Dermal	Irritation, Dizziness	500 ppm-Carcinogen	Aromatic
H ₂ S	10 ppm	Inhalation, Dermal	Irritation, Asphyxiation	100 ppm	Rotten eggs
Gasoline	Carcinogen, Flammable	Inhalation, ESLI Respirator Required	Irritation, Dizziness	Carcinogen, Flammable	Characteristic odor
Oil Mist (mineral)	5 mg/m ³	Inhalation, Ingestion, Dermal	Irritation	2500 mg/m ³	Burned lube oil

* This table is a quick reference and should be used in conjunction with MSDS/SDSs and chemical reference guides, e.g. NIOSH Pocket Guide to Chemical Hazards.

ELSI—Chemical cartridge respirator with end-of-service-life indicator.

For any questions, please contact a Safety Officer associated with this incident.

Air Monitoring Information/Results Form

<u>Hazard/ Concern</u>	<u>REL/TWA</u>	<u>Action Level</u>	<u>Air Monitoring Instrument/ Results</u>	<u>Date</u> mm/dd/yyyy <u>Time</u> 24-hr time
Benzene	0.1 ppm (TWA) IDLH = Ca	0 – 0.1 ppm → Level D 0.1 – 50 ppm → Level C 50 – 1000 ppm → Level B	Ultra-Rae with separation tube	
Lower Explosive Limit (LEL)	>10 %	Leave the area if the LEL level reaches 10%. Consult with supervisor and site Safety Officer	Air monitoring instrument with <u>LEL</u> capabilities	
Hydrogen Sulfide (H ₂ S)	10 ppm (REL) [10 minute maximum]	0 – 5 ppm → Level D 5 – 10 ppm → Level C 10+ ppm → Level B	Air monitoring instrument with <u>H₂S</u> sensor installed	
Volatile Organic Compounds (VOCs)	NA (THC = Total Hydrocarbons)	<u>Gasoline</u> : 10 – 1000 ppm THC → Level C >1000 ppm, at or near LEL → Leave Area! <u>Diesel</u> : 10 – 300 ppm THC → Level C >300 ppm, at or near LEL → Leave Area! <u>Crude Oils</u> : 10 – 600 ppm THC → Level C >600 ppm, at or near LEL → Leave Area!	Air monitoring instrument with <u>PID/FID</u> capabilities	
Sulfur Dioxide (SO ₂)	2 ppm (TWA)	0 – 2 ppm → Level D 2 – 100 ppm → Level C 100+ ppm → Level B	Air monitoring instrument with <u>SO₂</u> sensor installed	

This form can be used by personnel in the field to document air monitoring results.

Appendix B

Command Post (CP) Hazards

The Command Post can be a source of hazards and should be an area of focus for the Safety Officer and Safety Staff. Command Post hazards often include:

- **Driving to and from the CP** - Arrange transportation if you are too tired to stay focused.
- **Slips/trips/falls** - Mop up wet floors; ensure rugs are non-slip; ensure hand rails are securely fastened; pick up obstacles on the floor; move hazards such as chairs and backpacks.
- **Electrical cords** - These need to be taped or secured to the floor to ensure trip hazards are minimized.
- **Improper electrical connections** - Often a CP is established in an unfamiliar or older building. Ensure your electrical connections are secure and there are no exposed wires.
- **Fatigue, eye strain from computer work** - Take periodic breaks from your work station to help mitigate fatigue and overuse injuries such as carpal tunnel.
- **Stairwells** - With the often fast pace of an emergency incident, stairwells can be a source of injuries. Try and take stairs at a controlled pace and use the handrails.
- **Frequently opened doors with no windows** - Safety Staff should ensure signs are posted to “open these doors slowly.”
- **Spoiled food leftovers** - Boxed lunches are often left over; they should be thrown away at the end of the day or refrigerated soon after it’s obvious no one will eat them soon.

Please follow all posted signage by the Health and Safety officers and assistants. If you recognize a Command Post hazard immediately notify a Safety Officer.

Please see the attached map of the Command Post.

Appendix C

Mobilization and Demobilization

Driving is a potentially hazardous activity undertaken during any response. Fatigue, odd working hours, a need to “hurry” to accomplish work or to get to a destination, fielding phone calls, and other issues take a responder’s focus away from driving.

- All workers, whether in an authorized emergency vehicle or other vehicle, will follow state laws and use a hands-free device, as per Washington State law. Responders will also refrain from mobile email or texting while driving.
- Ensure adequate driving directions are provided to your work destination.
- Obey all traffic laws.
- Do not drive if overly tired, on medication that can affect your driving ability, or under the influence of alcohol or illegal drugs.

Accountability and Safety

- On mobilization, ensure you check in with your organization supervisor when you arrive safely at the Incident Command Post.
- Consider using an ICS 221 (Demobilization Check Out).
- Ensure staff are adequately rested prior to driving long distances returning home.
- Document a return-home ETA and follow up with a safe-arrival phone call.
- When possible, arrange a demobilization travel partner.

Please see attached map of the Command Post location.

Please see your supervisor for directions to your work site.

For any questions, please contact a Safety Officer associated with this incident.

Appendix D

Traffic and Roadside Safety

Many injuries and fatalities occur while working on roadways. Follow the following guideline while working on this incident.

- Whenever appropriate, vehicle flashers, strobe lights and traffic cones will be used to help protect responders.
- Park vehicles off the road as far as possible.
- Park vehicles to act as a barrier between oncoming traffic and workers.
- When working on public roadways, ANSI Class II or better apparel will be worn. Minimum requirements are an ANSI Class II Public Safety Vest.
- If working next to a road for more than 30 minutes, consider delaying the work until arranging for flaggers or a lane closure.

It is recommended you also review Appendix Z-Night Operations Safety, which discusses visibility of workers, and reflective apparel requirements.

For any questions, please contact a Safety Officer associated with this incident.

Appendix F

Shoreline Assessment and Operations

Shoreline Operations present their own special hazards. Persons working on a shoreline must adhere to the following protocols, which should also be outlined in a Shoreline Operations Work Plan. The work plan is not limited to just the protocols below.

- Personal Floatation Devices (PFD) will be worn when working in areas where the danger of drowning exists, potentially including shoreline work. Activities such as unstable footing, limited escape routes, and tide schedules will affect this decision. All work performed along shorelines requires the worker to wear a PFD where the danger of drowning exists. 29 CFR 1926.106(a)
- Food and Water Access: Ensure employees working along shorelines have access to sufficient amounts of food and water.
- Communication Devices: Employees working along shorelines should have clear communication with their team leader or supervisor. This can include hand-held radios and cell phones (with ensured reception).
- Personal Supplies: Employees working along shorelines should carry needed personal supplies (sunscreen, personal medications, appropriate weather-related clothing/gear, etc.).

Training Requirements

For Shoreline Clean-Up Operations

HAZWOPER

- *Site Worker*: 40-hour HAZWOPER with (3) days of field experience.
8-hour annual refresher training.
- *Occasional Site Worker*: 24-hour HAZWOPER with (1) day of field experience.
8-hour annual refresher training.
- *Manager or Supervisor*: 40- hour HAZWOPER with (3) days of field experience and (8) hours of supervisor training.
8-hour annual refresher training.
- *Post Emergency Response Cleanup*: 8-hour training, directly supervised by a 40-hour trained supervisor; no respiratory protection; risks are effectively controlled by PPE.

For Shoreline Assessment

- 24-hour HAZWOPER with (1) day of field experience.
8-hour annual refresher training.
- Shoreline Cleanup and Assessment (SCAT) training course (recommended, not required).

Appendix H

Cold Stress

(Effects, Symptoms and First Aid)

Workers who are exposed to extreme cold or work in cold environments may be at risk of cold stress. Extreme cold weather is a dangerous situation that can bring on health emergencies in susceptible people, such as those without shelter, outdoor workers, and those who work in an area that is poorly insulated or without heat.

What constitutes cold stress and its effects can vary across different areas of the country. In regions relatively unaccustomed to winter weather, near freezing temperatures are considered factors for "cold stress." Whenever temperatures drop decidedly below normal and as wind speed increases, heat can more rapidly leave your body. These weather-related conditions may lead to serious health problems.

Hypothermia

When exposed to cold temperatures, your body begins to lose heat faster than it can be produced. Prolonged exposure to cold will eventually use up your body's stored energy. The result is hypothermia, or abnormally low body temperature. A body temperature that is too low affects the brain, making the victim unable to think clearly or move well. This makes hypothermia particularly dangerous because a person may not know it is happening and will not be able to do anything about it.

Symptoms

Symptoms of hypothermia can vary depending on how long you have been exposed to the cold temperatures.

Early Symptoms

- Shivering
- Fatigue
- Loss of coordination
- Confusion and disorientation

Late Symptoms

- No shivering
- Blue skin
- Dilated pupils
- Slowed pulse and breathing
- Loss of consciousness

First Aid

Take the following steps to treat a worker with hypothermia:

- Alert the supervisor and request medical assistance.
- Move the victim into a warm room or shelter.
- Remove their wet clothing.
- Warm the center of their body first—chest, neck, head, and groin—using an electric blanket, if available; or use skin-to-skin contact under loose, dry layers of blankets, clothing, towels, or sheets.
- Warm beverages may help increase the body temperature, but do not give alcoholic beverages. Do not try to give beverages to an unconscious person.
- After their body temperature has increased, keep the victim dry and wrapped in a warm blanket, including the head and neck.
- If victim has no pulse, begin cardiopulmonary resuscitation (CPR).

Cold Water Immersion

Cold water immersion creates a specific condition known as immersion hypothermia. It develops much more quickly than standard hypothermia because water conducts heat away from the body 25 times faster than air. Typically, people in temperate climates don't consider themselves at risk from hypothermia in the water, but hypothermia can occur in any water temperature below 70°F. Survival times can be lengthened by wearing proper clothing (wool and synthetics and not cotton), using a personal flotation device (PFD, life vest, immersion suit, dry suit), and having a means of both signaling rescuers (strobe lights, personal locator beacon, whistles, flares, waterproof radio) and having a means of being retrieved from the water.

Frostbite

Frostbite is an injury to the body that is caused by freezing. Frostbite causes a loss of feeling and color in the affected areas. It most often affects the nose, ears, cheeks, chin, fingers, or toes. Frostbite can permanently damage body tissues, and severe cases can lead to amputation. In extremely cold temperatures, the risk of frostbite is increased in workers with reduced blood circulation and among workers who are not dressed properly.

Symptoms

Symptoms of frostbite include:

- Reduced blood flow to hands and feet (fingers or toes can freeze)
- Numbness
- Tingling or stinging
- Aching
- Bluish or pale, waxy skin

First Aid

Workers suffering from frostbite should:

- Get into a warm room as soon as possible.
- Unless absolutely necessary, do not walk on frostbitten feet or toes—this increases the damage.
- Immerse the affected area in warm—not hot—water (the temperature should be comfortable to the touch for unaffected parts of the body).

- Warm the affected area using body heat; for example, the heat of an armpit can be used to warm frostbitten fingers.
- Do not rub or massage the frostbitten area; doing so may cause more damage.
- Do not use a heating pad, heat lamp, or the heat of a stove, fireplace, or radiator for warming. Affected areas are numb and can be easily burned.

Trench Foot

Trench foot, also known as immersion foot, is an injury of the feet resulting from prolonged exposure to wet and cold conditions. Trench foot can occur at temperatures as high as 60 degrees F if the feet are constantly wet. Injury occurs because wet feet lose heat 25 times faster than dry feet. Therefore, to prevent heat loss, the body constricts blood vessels to shut down circulation in the feet. Skin tissue begins to die because of lack of oxygen and nutrients and due to the buildup of toxic products.

Symptoms

Symptoms of trench foot include:

- Reddening of the skin
- Numbness
- Leg cramps
- Swelling
- Tingling pain
- Blisters or ulcers
- Bleeding under the skin
- Gangrene (the foot may turn dark purple, blue, or gray)

First Aid

Workers suffering from trench foot should:

- Remove shoes/boots and wet socks.
- Dry their feet.
- Avoid walking on feet, as this may cause tissue damage.

Chilblains

Chilblains are caused by the repeated exposure of skin to temperatures just above freezing to as high as 60 degrees F. The cold exposure causes damage to the capillary beds (groups of small blood vessels) in the skin. This damage is permanent and the redness and itching will return with additional exposure. The redness and itching typically occurs on cheeks, ears, fingers, and toes.

Symptoms

Symptoms of chilblains include:

- Redness
- Itching
- Possible blistering
- Inflammation
- Possible ulceration in severe cases

First Aid

Workers suffering from chilblains should:

- Avoid scratching.
- Slowly warm the skin.
- Use corticosteroid creams to relieve itching and swelling.
- Keep blisters and ulcers clean and covered.

Recommendations for Workers

Workers should avoid exposure to extremely cold temperatures when possible. When cold environments or temperatures cannot be avoided, workers should follow these recommendations to protect themselves from cold stress:

- Wear appropriate clothing.
 - Wear several layers of loose clothing. Layering provides better insulation.
 - Tight clothing reduces blood circulation. Warm blood needs to be circulated to the extremities.
 - When choosing clothing, be aware that some clothing may restrict movement resulting in a hazardous situation.
- Make sure to protect the ears, face, hands and feet in extremely cold weather.
 - Boots should be waterproof and insulated.
 - Wear a hat; it will keep your whole body warmer. (Hats reduce the amount of body heat that escapes from your head.)
- Move into warm locations during work breaks; limit the amount of time outside on extremely cold days.
- Carry cold weather gear, such as extra socks, gloves, hats, jacket, blankets, a change of clothes, and a thermos of hot liquid.
- Include a thermometer and chemical hot packs in your first aid kit.
- Avoid touching cold metal surfaces with bare skin.
- Monitor your physical condition and that of your coworkers.

Appendix I

Safety Data Sheets (MSDS or SDS)

In this appendix, you will find the MSDS sheets (also called SDS sheets) for the hazardous materials one could encounter on this particular incident. Site-specific MSDS sheets should be attached to each site-specific Health and Safety Plan and reviewed.

Diesel fuel, gasoline (all grades), and hydrogen sulfide (H₂S) MSDS sheets are included in this appendix for reference.

For any questions, please contact a Safety Officer associated with this incident.

Appendix J

Sampling and Monitoring Plan

On hazardous waste sites, it is required to conduct monitoring for health and safety hazards to protect employees and workers (WAC 296-843-130). This includes:

1. Monitoring for health and safety hazards during initial site entry.
 - a. Make visual observations of the site to detect signs of actual or potential immediately dangerous to life and health (IDLH) or other dangerous conditions.
 - b. Conduct representative air monitoring with direct reading test equipment, when the preliminary site evaluation does not eliminate the potential for ionizing radiation or IDLH conditions
 - c. Assess the following:
 - i. Potential IDLH conditions.
 - ii. Exposure over radioactive material dose limits.
 - iii. Potential exposure over permissible exposure limits (PEL) or other published exposure levels.
 - iv. Other dangerous conditions such as the presence of flammable or oxygen-deficient atmospheres.
2. Evaluating employee exposure to hazardous substances during clean-up operations.
 - a. Identify the type of personnel providing monitoring and environmental sampling that you plan to use, including instrumentation.
 - b. Include requirements for maintaining and calibrating the monitoring and sampling instrumentation used.
 - c. Monitor whenever employees may be exposed to concentrations exceeding PELs or other published exposure levels.
 - d. Evaluate employees who are likely to have the highest exposure:
 - i. Monitor all employees who are likely to have the highest exposure to hazardous substances or health hazards above the PEL.
 - ii. Use personal sampling frequently enough to characterize the exposures of these employees.
3. When results indicate exposure over PEL, identify all employees likely to have been exposed to levels above that PEL.
4. Conduct monitoring when the possibility of one of the following exists:
 - a. An atmosphere that is immediately dangerous to life and health; OR
 - b. A flammable atmosphere; OR
 - c. Employee exposures above PEL.

For any questions, please contact a Safety Officer associated with this incident.

NOTE: This is not intended as a public safety community air monitoring plan. For community air monitoring guidance, see section 9418 of the Northwest Area Contingency Plan.

Hazard/ Concern	REL/TWA	Frequency/Location	Air Monitoring Instrument/ Results
Benzene	0.1 ppm (TWA) 1 ppm [PEL] IDLH=Ca [500 ppm]	Monitoring on initial entry: If results are >50% of the PEL/REL, hourly If results are <50% of the PEL/REL, every 2 hours If results are >10% of the PEL/REL, every 4 hours If results are <10% of the PEL/REL, only if site conditions change	Ultra-Rae with Separation Tube
Lower Explosive Limit (LEL)	>10 %	Monitoring on initial entry Continuously if results are > 1% LEL Monitor again if conditions change	Air monitoring instrument with <u>LEL</u> capabilities
Hydrogen Sulfide (H ₂ S)	10 ppm (REL) [10 minute maximum]	Monitoring on initial site entry	Air monitoring instrument with <u>H₂S</u> sensor installed
Volatile Organic Compounds (VOCs)	NA (THC=Total Hydrocarbons)	Monitoring on initial site entry	Air monitoring instrument with <u>PID/FID</u> capabilities
Sulfur Dioxide (SO ₂)	2 ppm (TWA)	Monitoring on initial site entry	Air monitoring instrument with <u>SO₂</u> sensor installed
Oxygen (O ₂)	NA	Monitoring on initial site entry Monitor continuously if readings are below 20% or above 22%	Air monitoring instrument with <u>O₂</u> sensor installed

Appendix K

Site Control

It is a requirement to establish a site control plan while working on hazardous waste sites. This requirement can be found under WAC 296-843-14005, part of which is attached for reference.

At hazardous waste incidents you must:

1. Maintain site work zones and site control as required by Table 1, Site Work Zone Requirements (attached).
2. Control access to the exclusion (hot) and contamination reduction (warm) zone.
3. Make sure people wear personal protective equipment (PPE) appropriate to their work zone.

Also ensure that control zones are clearly marked and communicated to all workers.

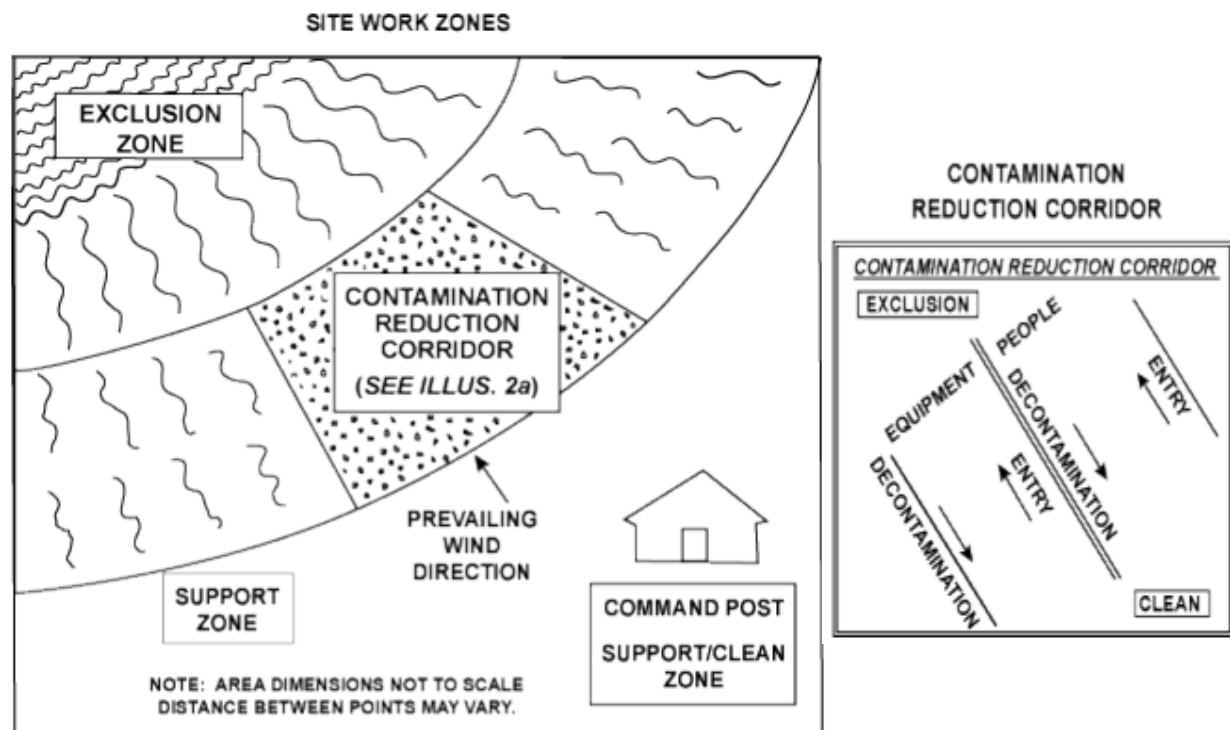
Table 1 and example illustrations are provided in this appendix.

For any questions, please contact a Safety Officer associated with this incident.

Table 1

Table 1 Site Work Zone Requirements	
For this type of work zone:	You must:
Exclusion zone	<ul style="list-style-type: none"> Establish entry and exit checkpoints on the zone's boundary Regulate the flow of people and equipment into and out of the zone Make sure exits go through a contamination reduction corridor
Contamination reduction zone with a contamination reduction corridor	<ul style="list-style-type: none"> Enter through a control point from the clean zone Provide a transition or buffer between the exclusion zone and the clean zone Perform all decontamination procedures Establish separate decontamination routes for people and equipment, if practical Remove all PPE worn in the contamination reduction or exclusion
Clean zone or support zone	<ul style="list-style-type: none"> Have no employee exposure to hazardous substances or health hazards

Example of Site Work Zones (WAC 296-843-14005)



Appendix L

Worker and Equipment Decontamination (Decon)

Decontamination (decon) is the process of neutralizing or removing contaminants from a person and/or their equipment. Decontamination takes place in the warm zone of the overall site also called the contamination reduction zone. The footprint of the decon zone can be expanded or contracted as necessary to meet the needs of the job site and contaminants on that site. The footprint should be only as large as reasonably needed and be adjusted to minimize the potential area of contamination.

There are two types of decon, wet decon and dry decon (see attachments for examples). Wet decon involves the use of a cleaning/decontamination or neutralizing solution such as soapy water, bleach, or Simple Green. Dry decon may utilize a dry neutralizing or cleaning agent such as charcoal or baking soda. Dry decon can also be the simple act of disposing outer PPE; however, no liquids will be present in a dry decon zone.

All personnel leaving any portion of the hot or warm zone **MUST** exit through an active decontamination area. A level of decontamination appropriate to contamination levels will be performed. All decontamination activities are overseen by the Decon Group Supervisor.

- A. A decontamination area will be set up in the warm zone (contamination reduction zone) prior to entering the hot zone (exclusion zone). All personnel exiting the hot zone must be decontaminated to minimize the spread of contaminants. This decon is usually performed by a decon team in one level of protection less than the person being decontaminated. See the decontamination attachment for information outlining options from “dry decontamination” to a more elaborate setup.
- B. All equipment brought into the hot zone will also be decontaminated. Equipment that cannot be decontaminated will be disposed properly. A waste determination, for all waste including PPE, must be made under WAC 173-303 (WA Dangerous Waste Regulations) prior to disposal.
- C. In the event of an emergency (fire or medical), the standard decontamination procedure may not be possible. In these cases, sufficient steps should be taken to prevent the spread of contamination, keeping in mind that human health and safety is the highest priority.

The following is an example of decontamination stations that may be present at a decontamination site:

- **Boot wash tub with a decon solution or soap and water.
- **Boot rinse tub filled with water.

- Outer glove wash tub with decon solution or soap and water.
- Outer glove rinse tub with water.
- Outer boot or bootie removal area.
- Outer glove removal area.
- Outer suit removal area.
- Inner suit removal area (if applicable).
- Inner glove removal area.
- Respirator/SCBA removal area.

*These are basic decon stations and do not necessarily represent every station that could be used.

**If the weather is too cold to set up a boot wash and rinse tub, a chemical resistant over boot may be worn. Be careful as this may introduce a new slipping hazard if snow and ice are present. An alternative is to step into a boot bag, remove boots and put clean shoes on. Keep contaminated boots in the boot bag until ready to use again. Fully clean the boots at the end of the response.

For any questions, please contact a Safety Officer associated with this incident.

Appendix M

DRUM and CONTAINER HANDLING: Spill Prevention and Containment Plans

It is every workers responsibility to handle drums and containers in ways that minimize the hazard to employees. Each location must have its own Spill Prevention and Containment Plan, and spill response kit. Workers on hazardous waste sites must:

1. Handle drums and containers safely.
2. Handle drums and containers suspected of containing shock-sensitive wastes safely.
3. Maintain worker safety in drum and container opening areas.
4. Ship and transport drums and containers safely.

Further details on handling drums and containers can be found in the following pages of this appendix. An overview includes:

Handling Drums and Containers (D&C)

- Assess hazards to workers before handling drums and containers.
- Inspecting D&C before moving them.
- Notifying workers in the area of potential hazards associated with the contents of the drums.
- Select the appropriate tools and safety equipment to prevent ignition, rupturing of the D&C, etc.

Handling Spills and Leaks

- Immediately clean up any spill or leak.
- Have available US DOT-specified salvage (overpack) drums or containers.
- Have suitable quantities of the proper absorbent material.
- Empty D&C—that cannot be moved without rupturing the current container—into a sound container
- Use a pump or other device classified for the material being transferred.
- Have fire extinguishing equipment on-hand to control fires.

Maintain Worker Safety in D&C Handling Areas

- Keep workers not involved in opening D&C a safe distance from the opening area.
- Use appropriate shielding between the worker and the D&C.
- Prohibit workers from standing on or working from drums or containers.

For any questions, please contact a Safety Officer associated with this incident.

Appendix O

Trainings, Briefings, and Information Plan

On hazardous waste sites, employees and contractors must have the training and information needed to work safely. This can include:

1. Informing incident personnel about the hazardous waste site.
2. Training workers, supervisors, and managers before work begins on the site.
3. Providing additional training to managers and supervisors including health and safety.
4. Training for post-emergency response.
5. Making sure employees receive written documentation of training.
6. Providing employees with refresher training.
7. The requirement to use qualified trainers.

The required training for individual work tasks are outlined in the Job Hazard Analysis (JHA) attached to this Health and Safety Plan. Daily incident briefings may be provided by the Incident Commander, Section Chiefs, Safety Assistants, Site Supervisors or Staging Area Managers. The current situation and status of the incident will be maintained by the Situation Unit and Planning Section.

Further details on the requirements for Trainings, Briefings, and Information can be found in the following pages of this appendix.

For any questions, please contact a Safety Officer associated with this incident.

Appendix P

Medical Surveillance Plan

It is required to provide medical surveillance for employees that work in hazardous waste operations. Employees will be included in a medical surveillance program that meets any of the following:

1. Are or may be exposed to hazardous substance or health hazards for at least 30 days per year, at or above the permissible exposure limits (PELs) or other published exposure levels.
2. Wear a respirator for at least 30 days per year.
3. Are injured, become ill, or develop signs or symptoms of possible overexposure to hazardous substances or health hazards.
4. Are hazardous material team members.

Incident personnel who meet the above criteria shall be enrolled in a medical surveillance program. The documents providing proof of their enrollment are kept by their employer. These documents can be provided by request.

Further details about medical surveillance can be found in the following pages of this appendix.

For any questions, please contact a Safety Officer associated with this incident.

Appendix Q

Sanitation—Potable Water, Toilets, Personal Hygiene Facilities

It is a requirement to provide safe drinking (potable) water, bathrooms, washing facilities, eating area and garbage and waste disposal in all workplaces. This includes:

- Providing safe drinking water in the workplace.
- Clearly marking water outlets that are not-fit-for-drinking.
- Making sure that systems delivering not-fit-for-drinking (non-potable) water prevent backflow into drinking water systems.
- Providing bathrooms for workers.
- Providing convenient and clean washing facilities.
- Making sure eating areas are safe and healthy

Requirements if you provide food service to your employees:

- The disposal of garbage and waste safely.
- The removal of garbage and waste in a way that does not create a health hazard.
- Provide a separate eating area if employees are exposed to toxic substances if they are allowed to eat and drink on the job site.
- Provide showers or decontamination when required for employees working with chemicals.
- Provide changing rooms when required.

Further details on worker and equipment decontamination can be found in the following pages of this appendix.

For any questions, please contact a Safety Officer associated with this incident.

Appendix R

Lighting

It is an employer's responsibility to provide and maintain adequate lighting in the workplace. The following Washington Labor and Industries document establishes minimal levels of lighting for safety purposes only. Guidelines pertaining to optimal levels of lighting and illumination may be found in Practice for Industrial Lighting (ANSE/IES RP7-1979).

Further details on Adequate Lighting in a workplace can be found in the following pages of this appendix.

For any questions please contact a Safety Officer associated with this incident.

Appendix S

Excavation, Trenching and Shoring

The scope and application of this appendix applies to all open excavations made in the earth's surface. Excavations are defined to include trenches.

It is not common practice for workers at oil spill incidents to participate in excavation, trenching or shoring during work shifts. If this work is to be performed on site, the following Washington L&I regulations need to be followed (Part N, chapter 296-155 WAC).

- An excavation is any person-made cut, cavity, trench, or depression in the earth's surface
- A trench is an excavation.
- Employees must be protected from cave-in when the excavation is 4 feet or more in depth
- Cave-in protection is not required when:
 - Excavations are made entirely in stable rock; or
 - They are less than 4 feet in depth and the examination of the ground by a competent person provides no indication of a potential cave-in

A "Competent Person" must take into considerations the weight, ground water, adverse weather, equipment vibration, and soil erosion and re-evaluate the jobsite periodically. A "Competent Person" is someone who:

- Can identify existing or predictable hazards in an excavation
- Has authority to take corrective actions as necessary
- Is familiar with the DOSH excavation standards
- Is knowledgeable in soil analysis and classification as well as the erection, use, and precautions for the protective system on site

For any questions, please contact a Safety Officer associated with this incident.

Appendix T

Recordkeeping and Information Access

It is the employer's responsibility to keep records and make them accessible to employees. This includes:

- Making records like the site Health and Safety Plan and all other written plans to be inspected and copied by:
 - Employees or their representatives.
 - Site contractors or their representatives.
 - Subcontractors or their representatives.
 - Personnel of any federal, state or local agency with regulatory authority over the site.
- Keeping medical surveillance records for affected employees that include:
 - Employee name and Social Security Number.
 - Physicians written opinions including recommended limitations and results of exams and tests.
 - Employee medical complaints regarding hazardous substance exposures.
 - A copy of all information given to the examining physician.
- Keep each employee's records for at least the duration of his or her employment plus 30 years.

Please review the Recordkeeping and Information Access document in this appendix. For additional requirements on medical and exposure records, see chapter 296-62 of the WAC, Part B, Access to Records.

For any questions, please contact a Safety Officer associated with this incident.

Appendix V

Organization Assignments and Responsibilities

Purpose

This list provides ICS personnel with information on the units that are currently activated and the names of the personnel staffing each position/unit. It is used to complete the Incident Organization Chart (ICS form 207-OS), which is posted on the Incident Command Post display.

Preparation

The Resources Unit prepares and maintains this list under the direction of the Planning Section Chief.

Organization Assignments and Responsibilities can be found in the following:

- Page 3 of the ICS-201 form
- ICS-203 form
- ICS-207 form

Responsibilities

Unified Command (UC)

- Has overall responsibility for health and safety at an incident. The UC usually designates this responsibility to the Site Safety Officer.
- Reviews and approves the incident Health and Safety Plan, form ICS-208 (HASP).

Safety Officer (SOFR)

- Prepares, distributes, and updates the incident HASP, and ensures all personnel involved in the incident read and follow the information.
- Ensures task-specific tailgate safety meetings occur.
- Ensures all safety incidents are investigated and reported to the UC.
- Ensures decontamination procedures are appropriate for the hazards encountered on-site.
- Ensures work environments are monitored for safety, and that appropriate PPE is being used.
- Ensures appropriate site control zones are designated and then communicated to the workers.

Supervisors

- Responsible to ensure their employees have read and signed the overall Incident HASP.

- Responsible for briefing their employees and conducting daily tailgate safety meetings on hazards and safe work practices.
- Responsible for reporting all health and safety incidents and accidents to the Incident Safety Officer.
- Responsible for ensuring staff wear the proper PPE, and following the appropriate decontamination procedures.
- Responsible for ensuring their work areas are appropriately monitored for hazards.
- Responsible for tasks being conducted in their work areas, and accounting for the location of their staff.

Employees

- Responsible for reading the Incident HASP and acquiring clarification if any aspect of the plan is not understood.
- Responsible for participating in daily tailgate safety meetings.
- Responsible for wearing the PPE identified in the HASP for the work they will be conducting.
- Responsible for stopping work if unsafe work conditions are identified, and for notifying others, including the supervisor that the unsafe conditions exist.
- Responsible for following the decontamination procedures outlined in the HASP for the work they will be conducting.

Appendix W

Injury and Incident Reporting

These forms should be filled out by the employee and reviewed by the supervisor whenever a safety incident has occurred including a near-miss event. They should be submitted to the Safety Team for review and discussion. All appropriate steps should be taken to help ensure the incident/near-miss doesn't happen again.

Please log your safety incident/near-miss in the form below while keeping the description here to a minimum. Injury/Safety Incident Reports are located behind this document.

[illegible]

Appendix bb

Noise and Hearing Protection

Background

Hearing Conservation Programs are designed to protect workers with significant occupational noise exposures from hearing impairment. A hearing conservation program requires monitoring noise exposure in a way that accurately identifies employees exposed to noise at or above 85 decibels (dB) averaged over 8 working hours. Employers must monitor all employees whose noise exposure is equivalent to or greater than a noise exposure received in 8 hours where the noise level is constantly 85 dB.

Hearing Protection

If you believe you are working in an environment where the noise level is at or near 85 dB and will continue through your work shift, contact your supervisor and a Safety Officer so noise monitoring can be performed.

It is good practice to wear hearing protection any time you are working around loud noises even if they are below 85 dB. Consult your supervisor and/or Safety Officer for assistance and acquisition of proper hearing protection.

Training Requirements

Employers must train employees exposed to TWAs of 85 dB and above at least annually in the effects of noise; the purpose, advantages, and disadvantages of various types of hearing protectors; the selection, fit, and care of protectors; and the purpose and procedures of audiometric testing.

Additional Information can be found with the U.S. Department of Labor; OSHA 3074, 2002 (revised).

Appendix cc

Site-Specific (Tailgate) Safety Meetings

Site-specific (tailgate) safety meetings are a requirement at the start of all work shifts at each work location. Each work location supervisor should assemble a Site-Specific Health and Safety Plan (HASP) for each work location they are responsible for. The Site-Specific HASP can be assembled by utilizing the main body of the primary incident HASP and the appendices that correspond to the work being performed at the specific work location.

There is a Hazard Assessment Worksheet in this appendix that can be used in the first 24-hours of an incident and before the primary incident HASP (ICS-208) has been created and put into use.

Activity/Work Task	Potential Hazards	PREVENTION: Respiratory Protection, PPE, etc.	Training Requirement	Decontamination Recommendation	Air Monitoring Requirement
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➔ See the corresponding **Safety Bulletin** and/or **Appendix** attached to this Health & Safety Plan where noted ←

(***) Indicates that the following common hazards exist- slip/trip/fall and general first aid injuries

Accident Reporting	-First aid -Recordable injury -Near misses -Chemical exposures	-Call 911 if appropriate -Report accidents/injuries to supervisor and safety officer (SO) -Supervisor complete and submit investigation report within 8-hrs to SO	-Awareness for all workers on 'prevention' items... 911, reporting, forms, etc.	-If applicable do a gross decontamination on personnel requiring medical attention	-To ensure scene safety around accident (correct PPE required) -Post-accident investigation
Behavior Based Safety	-Hazard Identification -Stop Work Authority	-Supervisors will remind staff of their authority to stop work -Crew safety leads will coordinate is SO -Daily safety briefings will be conducted for all crews by crew supervisors	-Awareness for all workers on 'prevention' items...stop work, daily safety briefings, etc.	-If applicable daily safety briefings will include decontamination and PPE discussion for the tasks to be performed	If applicable daily safety briefings will include any air monitoring requirements
General Work Area-Walkways	-Slips, trips and falls (***)	-Establish pathways thru most accessible area -Keep pathways clear of debris and trip hazards -Ensure stable footing prior to stepping over items -Refer to slips/trips/falls Safety Bulletin for additional guidance	-Awareness for all workers on 'prevention' items...clear pathways, sure footing, slip/trip/fall avoidance	-During decontamination of personnel and equipment there is a high risk of slips/trips/falls. Set up traffic cones for workers to hold on to.	-Very low probability for general walkway safety
General Work Area-Lifting	-Strain (***)	-Stage equipment to minimize carry distance -Split heavy loads into smaller ones -Request assistance for heavy or awkward loads	-Awareness for staff on 'prevention' items...stage, split loads, request help	- During decon of personnel and equipment there is a lot of lifting and moving of equipment	-Very low probability for general lifting safety
General Work Area-Command Post	-Slips, trips and falls -Food safety & preservation -Ergonomics	-Establish walkways thru most accessible areas and keep bags stowed away -Tape down extension cords	Awareness for all workers on 'prevention' items...use established walkways, stow bags away, use good posture and minimize	-Use hand sanitizer and disinfectant wipes to aid in spread of germs	-Very low probability for general command post safety

Activity/Work Task	Potential Hazards	PREVENTION: Respiratory Protection, PPE, etc.	Training Requirement	Decontamination Recommendation	Air Monitoring Requirement
	-Personal hygiene and wellness (***)	-Ensure old/expired food and is disposed of -Try to maintain a neutral body posture while sitting to lessen fatigue and injury -Wash hand frequently, if you're sick find a way to minimize contact with others	contact with others if you're sick	-Hire a cleaning service to perform routine cleaning of command post	
Prolonged Exposure to the elements- COLD	-Hypothermia -Frostbite -Trench foot (***)	-Wear appropriate clothing for the weather conditions (layer clothing, winter hat, gloves, moisture wicking undergarments) -Wear appropriate PPE (rain gear, warmth gear su) -Take rest/warm-up breaks as needed	Awareness for all workers on 'prevention' items...wear appropriate clothing, PPE and follow warm-up schedule in Appendix H	If performing decon of workers in cold conditions ensure that warm water is used but be aware of signs of cold stress. Do not use hot water as works may not be able to feel that it's too hot	-Very low probability for cold stress safety
Prolonged Exposure to the elements- HEAT	-Heat rash, -Heat cramps -Heat exhaustion -Heat stroke (***)	-Wear light colored, loose fitting breathable clothing -Drink plenty of fluids -Follow work/rest guidelines in Appendix G	-WAC 296-62-09510(2): Info and training for heat stress -Review Appendix G	-If performing decon of workers in hot conditions watch for heat related symptoms in workers doffing their PPE	-Very low probability for heat stress safety
Break Time	-Ingestion -Fire -Exhaustion -Hygiene (***)	-Wash hands before eating, drinking, smoking or applying sunscreen -Do not smoke near petroleum products -Adequate food and water should be available to workers at all times -Portable toilets and soap/sanitizer should be available for field workers -See Appendix Q	Awareness for all workers on 'prevention' items...wash hands, food and water available, and portable toilets available	-If performing decon of workers the decon crew should be mindful during breaks to eat and drink in a safe zone outside of the decon work area.	-It's not required but would be a good idea to perform air monitoring around the break area to ensure safety of workers.

Activity/Work Task	Potential Hazards	PREVENTION: Respiratory Protection, PPE, etc.	Training Requirement	Decontamination Recommendation	Air Monitoring Requirement
Noise Control	-Loud Noises	-Use hearing protection when your noise exposure equals or exceeds 85 decibels (dBA) for a Time Weighted Average (TWA) -Noise exposures ≥ 90 dBA must have noise exposure controls in place -Post warning signs in areas where noise levels are ≥ 115 dBA	WAC 296-817-20020 Training employees on noise and hearing protection. -Review Appendix bb	If performing decon on heavy equipment and vessels their engine noise can exceed 85 dBA. Be prepared to don hearing protection if necessary	-Very low probability for noise control
Traffic and Roadside Safety ↓	-Struck by vehicle (***)	-When working on public roads ANSI Class II or better apparel will be worn, ANSI Class II safety vest is a minimum -Park Vehicles to act as a barrier between oncoming traffic and workers -Whenever appropriate, vehicle flashers, strobe lights, and traffic cones will be used	Awareness for all workers on 'prevention' items...wear approved reflective clothing, position vehicles for safety, use vehicle safety lights	If performing decon on vehicles or heavy equipment wear reflective safety clothing	If performing decon on vehicles or heavy equipment, periodically monitor for contaminants of concern to ensure proper respiratory protection is being used by decon team.
Pressure Washing	-Noise -Contact with contaminants (***)	-See Safety Bulletin associated with Pressure Washing. -Use hearing protection -Both hands on wand handle at all times -Proper muzzle awareness -Do not decon personnel -Use only water or approved decon solution, include SDS for review	-Read the manufacture instructions on operation and safe operation of pressure washer	-Follow safe decontamination procedures when cleaning vehicles and equipment. -Not to be used to decontaminate personnel	If performing decon on vehicles or heavy equipment, periodically monitor for contaminants of concern to ensure proper respiratory protection is being used by decon team.
Oil/fuel Spill Prevention	-Spilled oil (***)	-Daily inspect fuel hoses, fuel storage containers, and equipment for drips, leaks or signs of damage	-Follow equipment manufacture instructions	--Very low probability for oil/fuel spill prevention	-Very low probability for oil/fuel spill prevention

Activity/Work Task	Potential Hazards	PREVENTION: Respiratory Protection, PPE, etc.		Training Requirement	Decontamination Recommendation	Air Monitoring Requirement
		-Consider wrapping hose junctions with oil absorbent material and duct tape		and company protocols for proper use and training		
Shoreline Assessment	-slip/trip/fall -wildlife -spilled oil products -Fall into water (***)	-Level D with option for level C (see Appendix A for chemical hazards & action levels for spilled oil) -See Appendix aa for Wildlife safety information -If within 6 feet of water with no railing must wear personal floatation device		-40-hour HAZWOPER -SCAT Training -See Appendix F for	-Wear boot covers if potential for oil to get on boots -If oil gets on boots ensure decontamination is performed (see Appendix L) for decon information	-Perform air monitoring in personal breathing space using a multi-gas meter. See Appendix A for chemical hazards & action levels for spilled oil products
Shoreline Clean-up	-slip/trip/fall -wildlife -spilled oil products -Fall into water (***)	-Respiratory: Level D with option for level C (see Appendix A for chemical hazards & action levels for spilled oil) -Dermal: Plastic coated paper suit like a Tyvek -See Appendix aa for Wildlife safety information -If within 6 feet of water with no railing must wear personal floatation device		-40- hour HAZWOPER -SCAT Training	-Decontamination line should be set up for Shoreline Cleanup Teams (see Appendix L) for decon information	-Perform air monitoring in personal breathing space using a multi-gas meter. See Appendix A for chemical hazards & action levels for spilled oil products
Containment Boom Deployment						
Containment Boom Towing w/ vessel	-Line break & sudden energy release -Struck by line -Line tangled in boat prop -Leaning out of vessel to position boom	-Use minimum of 1 inch poly line -Inspect shackles and tow equipment before & after each use -Ensure shackles are 'moused' with stainless seizing steel wire to prevent shackle pins from working loose -Wind and tide affecting boom under tow		-Proper training from company on performing work task - Awareness for all workers on 'prevention' items... Inspect equipment, keep eye on boom and lines while under tow, etc.	-Follow your companies' protocols for decontaminating contaminated boom -Decontaminate boom out of the water - See Appendix L for further decon information	-Perform air monitoring in personal breathing space using a multi-gas meter. See Appendix A for chemical hazards & action levels for spilled oil products

Activity/Work Task	Potential Hazards	PREVENTION: Respiratory Protection, PPE, etc.		Training Requirement	Decontamination Recommendation	Air Monitoring Requirement
	(***)	-Assign dedicated deck hand to keep watch on the boom and tow line at all times while under load -Wear PFD				
General Vessel Safety						
Launching Vessels and Skiffs	-Collision -Capsize -Overhead danger (***)	-Must be qualified vessel operator -Must be qualified crane operator on barge or dock -Proper tagline and rigging during lifting operations		-Internal training for use of specific vessels -WA boaters license, if applicable -USCG licensure where required	-Very low probability for launching vessels and skiffs	-Very low probability for launching vessels and skiffs
Refueling of Equipment ↓	-Fire -Spills (***)	-A 201b Class B fire extinguisher must be in immediate area on deck of vessel, charged and inspected -Access to fire extinguisher must not be hindered -Solvent waste and oiled rags must be kept in fire resistant covered container -Fueling operator must be present at all times during fueling -Spill kit must be accessible -Keep all fuel containers in secondary containment -Fueling of skiffs must be performed on the deck of the response vessel -No fueling is to be performed on/over water		-Internal training for workers refueling equipment -Internal training on use of fire extinguishers -Internal training on the use of spill kits	-Very low probability for refueling of equipment	-Very low probability for refueling of equipment
Delivery of Site Equipment & Supplies	-Back strains -Hand injuries (***)	-Verify before lifting that all equipment is secured		-Internal training for workers delivering and offloading supplies and equipment	-Very low probability for delivering site equipment and supplies	-Very low probability for delivering site equipment and supplies

Activity/Work Task	Potential Hazards	PREVENTION: Respiratory Protection, PPE, etc.	Training Requirement	Decontamination Recommendation	Air Monitoring Requirement
		<ul style="list-style-type: none"> -Do not throw equipment from vessel or dock. Use cranes or lines where available and appropriate -Lift any object over 50 # with assistance -Lift properly with legs and maintain solid footing 			
Decontamination Areas (General)	<ul style="list-style-type: none"> -Exposure to workers -Spreading of contamination (***) 	<ul style="list-style-type: none"> -All decon areas and zone delineations must be clearly marked -Only 24 hour HAZWOPER certified individuals allowed in 'hot' or 'warm' zones -SDS sheets of contaminants of concern must be available on site -No non-response personnel allowed in 'hot' or 'warm' zone -See Appendix L for full decontamination safety information 	<ul style="list-style-type: none"> -40 hour HAZWOPER -Internal training for workers on decon line setup. -See Appendix L for further decon information 	<ul style="list-style-type: none"> -Decon personnel must be in no less than one PPE level below the workers being deconed. Example: Workers in Level "B" PPE, decontamination personnel in Level "C" 	<ul style="list-style-type: none"> -Perform air monitoring using a multi-gas meter where necessary to ensure personnel are not exposed to contaminants. See Appendix A for chemical hazards & action levels for spilled oil products
Decontamination of Equipment	<ul style="list-style-type: none"> -Electrical hazard -Exposure to contaminant (***) 	<ul style="list-style-type: none"> -Ensure equipment is turned off and secured to avoid electrical/shock risk. -Contain and control all liquid run off -Properly dispose of all contaminated liquids -Wear appropriate PPE for contaminant of concern 	<ul style="list-style-type: none"> -40 hour HAZWOPER -Internal training for workers on decon line setup. -See Appendix L for further decon information 	<ul style="list-style-type: none"> See Appendix L for further information regarding decontamination 	<ul style="list-style-type: none"> -Perform air monitoring using a multi-gas meter where necessary to ensure personnel are not exposed to contaminants. See Appendix A for chemical hazards & action levels for spilled oil products
Decontamination of Personnel	<ul style="list-style-type: none"> -Exposure to contaminant (***) 	<ul style="list-style-type: none"> -All decon areas and zone delineations must be clearly marked -Only 24 hour HAZWOPER certified individuals allowed in 'hot' or 'warm' zones 	<ul style="list-style-type: none"> -40 hour HAZWOPER -Internal training for workers on decon line setup. -See Appendix L for further decon information 	<ul style="list-style-type: none"> See Appendix L for further information regarding decontamination 	<ul style="list-style-type: none"> -Perform air monitoring using a multi-gas meter where necessary to ensure personnel are not exposed to contaminants. See Appendix A for chemical hazards &

Activity/Work Task	Potential Hazards	PREVENTION: Respiratory Protection, PPE, etc.	Training Requirement	Decontamination Recommendation	Air Monitoring Requirement
		<ul style="list-style-type: none"> -SDS sheets of contaminants of concern must be available on site -No non-response personnel allowed in 'hot' or 'warm' zone -See Appendix L for full decontamination safety information 			action levels for spilled oil products
Decontamination of boats on the water	<ul style="list-style-type: none"> -Exposure to contamination -Falling into water -Drowning -Hypothermia (***) 	<ul style="list-style-type: none"> -Observe general PPE and boating recommendations -Wear an approved PFD at all times -Avoid quick movements or over-reaching while wiping boats -Dispose of contaminated materials in designated bags/containers -Monitor for waves, and inclement weather -Ensure boats are anchored padded to prevent collision 	<ul style="list-style-type: none"> -40 hour HAZWOPER -Internal training for workers performing decon on boats -See Appendix L for further decon information 	See Appendix L for further information regarding decontamination	- Perform air monitoring using a multi-gas meter where necessary to ensure personnel are not exposed to contaminants. See Appendix A for chemical hazards & action levels for spilled oil products
Helicopter Transport and Overflights	<ul style="list-style-type: none"> -Contact with blade -Flying debris -Fire -Emergency water landing (***) 	<ul style="list-style-type: none"> -Review Safety Bulletin on Helicopter Safety -Wait for pilot permission before approaching aircraft -Secure all loose gear, clothing and hair -Protect eyes from flying dust and debris -Always stay clear of main rotor and tail rotor -PFD's must be worn if flying over water 	<ul style="list-style-type: none"> -Review Safety Bulletin on Helicopter Safety -Follow pilot and crew's briefing and instructions throughout the flight 	-Very low probability for helicopter transport and overflights	-Very low probability for helicopter transport and overflights
Rock and Rip-Rap Cleaning	<ul style="list-style-type: none"> -Hot steam and pressure washing -Wildlife 	<ul style="list-style-type: none"> -Wear personal floatation device (PFD) when working around water -Be aware of surroundings and footing 	<ul style="list-style-type: none"> -Review the following Safety Bulletins: -Slip/trip/fall -Pressure washing 	-Workers will likely need to go through a decon line after cleaning rip-rap. Follow Appendix L	- Perform air monitoring using a multi-gas meter where necessary to ensure personnel are not exposed to

Activity/Work Task	Potential Hazards	PREVENTION: Respiratory Protection, PPE, etc.	Training Requirement	Decontamination Recommendation	Air Monitoring Requirement
	<ul style="list-style-type: none"> -Slip/trip/fall -Fall in water -Exposure to contaminant (***) 	<ul style="list-style-type: none"> -Keep aware of tidal cycles -Use appropriate PPE -Keep an eye out for wildlife 	<ul style="list-style-type: none"> -Safe work practices for vessel ops -Rock/rip-rap washing 	for information on decontamination of personnel	contaminants. See Appendix A for chemical hazards & action levels for spilled oil products
Oiled Wildlife	<ul style="list-style-type: none"> -Bites, scratches, disease transmission, exposure to contaminant 	<ul style="list-style-type: none"> -Review Appendix aa on Wildlife Safety 			
Oiled Materials and Surfaces					
Dispersant Application onto Spilled Petroleum	<ul style="list-style-type: none"> - Inhalation - Vessel sinking and collision - Man overboard - Heavy machinery and noise - Slip/trip/fall 	<ul style="list-style-type: none"> - Follow procedures regarding Permissible Exposure Limits - Air monitoring - Proper PPE 	<ul style="list-style-type: none"> -Consult with the NW Area Contingency Plan -BOISET - HAZWOPER - Vessel Operations -Review Appendix Y on Dispersant Application Hazards 	-Very low probability for dispersant application	-Very low probability for launching vessels and skiffs
In-Situ Burning of Spilled Petroleum	<ul style="list-style-type: none"> - Heat/burn - Inhalation - Vessel sinking and collision - VOC's - Fall in water - Heavy machinery and noise - Slip/trip/fall 	<ul style="list-style-type: none"> - Maintain safe working distance - Air monitoring - Proper PPE 	<ul style="list-style-type: none"> -Consult with the NW Area Contingency Plan -Vessel Operations -Review Appendix X on In-Situ Burning 	-Follow decontamination procedures under the general vessel safety job task in this document	-Consult with Table #1, in Appendix X for Major in-situ burning pollutants and their exposure limits. This is from the NW Area Contingency Plan

Activity/Work Task	Potential Hazards	PREVENTION: Respiratory Protection, PPE, etc.	Training Requirement	Decontamination Recommendation	Air Monitoring Requirement
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APPENDIX C

Site-Specific Remedial Work Plan

**PRELIMINARY
SOIL REMEDIATION
WORK PLAN**

**Four Star Supply, Inc.
355 NW State Street
Pullman, Washington**

Project Number: 223516.00

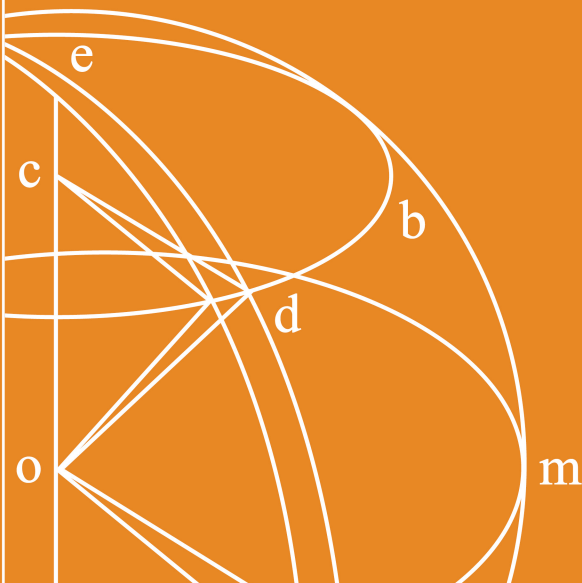
May 26, 2022

Prepared for:

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Report Title: Preliminary Soil Remediation Work Plan

Project Number: 223516.00

Date: May 26, 2022

Site: Four Star Supply Inc.
355 Northwest State Street
Pullman, Washington

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**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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APPENDICES

Appendix A	Applicable Certifications
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1.0 INTRODUCTION

This Remediation Work Plan has been prepared on behalf of Four Star Supply, Inc. (Four Star) by Fulcrum Environmental Consulting, Inc. (Fulcrum) to describe the remediation activities that will be conducted at the Four Star Property Cleanup located at 355 Northwest State Street in Pullman, Washington (site). See Figure 1 for a general site location map.



The loss area portion of the property has operated as a bulk plant from about 1932 to present day. It is located at the top of a stream embankment adjacent to the South Fork Palouse River. An April 2022 fuel release from a 10,000-gallon Above Ground Storage Tank (AST) resulted in impact to underlying site soils and near shore river water.

Able Cleanup Technology (Able) of Spokane, Washington responded to the spill event. Sorbent booms and pads were placed in the near shore river water and a series of capture points were hand excavated along the bank to intercept hydrocarbon impacted groundwater before it entered the river. The spill response was supported by staff from Four Star who provided ongoing monitoring and replacement of spill response media.

Concurrent with the Able/Four Star response efforts, the Washington Department of Ecology (Ecology) provided spill response oversight and coordination that was extremely effective in advancing the spill response in ongoing communication with key stakeholders including the Owner, Washington State Department of Fish and Wildlife, City of Pullman, Environmental Protection Agency (EPA), and Army Corp of Engineers. It is Fulcrum's professional opinion that the spill response was professional, effective, and well-coordinated. Spill containment is complete, and the project is now proceeding to the remedial phase. The tanks and secondary containment have been removed. This plan addresses removal of hydrocarbon impacted soils and site restoration activities.

This Soil Remediation Work Plan has been prepared by Travis Trent, a Washington State Licensed Hydrogeologist (LHG) and Certified Industrial Hygienist (CIH) with over 26-years of experience in the remediation of petroleum impacted soils. Relevant professional certifications are presented as Appendix A. This Health and Safety Plan (HSP) is intended to be a dynamic document and may be subject to change based on encountered site conditions.



1.1 Purpose

The purpose of the work plan is to complete remediation of the April 2022 fuel spill in accordance with applicable regulations. Overall objective is to advance the remedial effort in an expeditious manner that is protective of site workers and the environment while maximizing the potential for the final cleanup effort to be eligible for a “No Further Action” determination upon conclusion.

1.2 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 non-complex sites. Fulcrum proposes to use Method A cleanup levels as site screening levels during the remedial action. Fulcrum proposes to use Method A cleanup levels as site screening levels during the remedial action with the expectation that Method B may be identified as the final site cleanup standards.

2.0 SITE LOCATION AND DESCRIPTION

The Four Star facility is located at 355 NW State Street in Pullman, Washington. The fuel spill occurred in a bulk fuel storage facility located on the south side of the South Fork Palouse River at the NE corner of Popular and NW State Streets. See Figure 1 for a site location map. According to Google Earth, the site is located at the following Global Positioning Satellite (GPS) coordinates:

- 46.73251, -114.18119

2.1 General Area of Impact

The remedial work area is identified as the former NW portion of the now removed tank farm and the associated riverbank and river slope. See Figure 2 for a site plan view of the fuel spill





remedial work area. The site is accessible from Northwest State Street in Pullman, Washington and will be secured by a chain-link perimeter fence.

3.0 CHARACTERIZATION

Fulcrum completed two pre-remediation characterization events. During the first event on May 13, 2022, Fulcrum collected soil samples from penetrations through the secondary containment. The objective of this sampling and analysis was to characterize the petroleum contaminated soils for disposal. Removal of the secondary containment was completed on May 18, 2022. On May 19, 2022 Fulcrum completed a second characterization investigation. The second characterization event consisted of trenching through the area of suspect impact to make preliminary determination of the probable extent of contaminant presence. Soils were field screened for contaminant presence using odor, discoloration, and PID readings. Samples were collected and submitted for laboratory analysis to confirm results of field screening.

3.1 Waste Characterization Sampling

On May 13, 2022, Fulcrum conducted an initial characterization event of representative soil located beneath the failed secondary containment. A total of five representative samples were collected. Samples were hand collected directly from exposed near surface soils using clean latex gloves and disposable sampling tools. Samples were collected directly into laboratory provided containers, labeled in indelible ink with unique identification numbers, and placed in a cooler on ice for transport to Test America in Spokane, Washington, for analysis. The characterization samples were analyzed for diesel, heavy oil, and gasoline range petroleum hydrocarbons, benzene, ethylbenzene, toluene, xylene (BTEX), and lead. Lead concentrations were identified in one sample above the acceptance threshold of the selected disposal site (100 ppm total lead). The sample was submitted for further analysis by TCLP methodology. A summary of the initial characterization soil sample results is presented below in Table 1. Complete analytical results are presented in Appendix B. See Figure 3 for the characterization soil sample location map.

Table 1: May 13, 2022 –Soil Analytical Results

Location	Sample Number	Results (ppm)								
		NWTPH-Dx		NWTPH-Gx	BTEX				Total Lead	Leachable Lead
		Diesel	Heavy Oil	Gasoline	Benzene	Ethyl-benzene	Toluene	Xylene		
Northwest area	FS-051322-01	38	ND	ND	ND	ND	ND	ND	24	NA
West area	FS-051322-02	ND	ND	ND	ND	ND	ND	ND	19	NA
Southwest area	FS-051322-03	ND	ND	ND	ND	ND	ND	ND	160	ND
South area	FS-051322-04	34	ND	ND	ND	ND	ND	ND	16	NA
North area	FS-051322-05	3,700	ND	5,200	ND	0.83	0.49	8.4	ND	NA
MTCA Method A Cleanup		2,000		100	0.03	6.0	7.0	9.0	250	5



Bold Concentrations above regulatory reference levels
 ND Non-detect
 NA Not Analyzed

Laboratory analytical identified detectable concentrations of diesel and gasoline range petroleum hydrocarbons, ethylbenzene, toluene, xylene, and total lead. Only diesel and gasoline range hydrocarbons were above applicable regulatory thresholds.

3.2 Site Characterization Sampling

On May 19, 2022, Fulcrum completed a second characterization investigation. This event consisted of trenching through the area of suspect impact to make a preliminary determination of the probable extent of contaminant presence. Soils were field screened for contaminant presence using odor, discoloration, and PID readings. Samples were collected and submitted for laboratory analysis to confirm results of field screening. A total of 8 representative samples were collected. Samples were hand collected directly from exposed near surface soils or from the excavator bucket using clean latex gloves and disposable sampling tools. Samples were collected directly into laboratory provided containers, labeled in indelible ink with unique identification numbers, and placed in a cooler on ice for transport to Test America in Spokane, Washington, for analysis. The samples were analyzed for diesel, heavy oil, and gasoline range petroleum hydrocarbons, benzene, ethylbenzene, toluene, xylene (BTEX), and lead. A summary of May 19, 2022, characterization soil sample results is presented below in Table 2. Complete analytical results are presented in Appendix B. See Figure 3 for the characterization soil sample location map.

Table 2: May 19, 2022 –Soil Analytical Results

Sample Number	Results (ppm)							
	NWTPH-Dx		NWTPH-Gx	BTEX				Lead
	Diesel	Heavy Oil	Gasoline	Benzene	Ethylbenzene	Toluene	Xylene	
FS-051922-01-2.0	9,600	ND	250	ND	ND	ND	ND	170
FS-051922-02-3.0	28,000	770	6,600	ND	ND	ND	ND	79
FS-051922-03-2.0	2,900	ND	800	ND	ND	ND	0.59	ND
FS-051922-04-2.0	3,600	ND	2,000	ND	ND	ND	ND	54
FS-051922-05-2.0	260	ND	ND	ND	ND	ND	ND	170
FS-051922-06-2.0	2,400	180	73	ND	ND	ND	1.5	46
FS-051922-07-6.0	93	ND	710	ND	ND	ND	ND	ND
FS-051922-08-8.0	4,900	ND	3,900	ND	0.50	ND	4.6	14
MTCA Method A Cleanup	2,000		100	0.03	6.0	7.0	9.0	250

Bold Concentrations above regulatory reference levels
 ND Non-detect



Laboratory analytical identified detectable concentrations of diesel and gasoline range petroleum hydrocarbons, ethylbenzene, xylene, and total lead. Only diesel and gasoline range hydrocarbons were above applicable regulatory thresholds.

Fulcrum collected a total of 13 characterization samples. Analytical results indicate that only diesel and gasoline range petroleum hydrocarbons are present at levels of regulatory significance within the fuel spill impacted soils.

Although the fuel spill was reportedly diesel fuel, Fulcrum recognizes that the point of release is a bulk fuel storage facility which has operated at the location for over 90 years. Potential exists for the diesel fuel to have contaminated soils that have been previously impacted by prior releases. As such, Fulcrum conducted additional analysis to determine the full range of potential contaminants within site soils impacted by the April 2022 fuel release.

4.0 REMEDIAL DESIGN

Based on observed conditions at the site, Fulcrum's conceptual model anticipates that the small release of diesel fuel leaked from an onsite AST and pooled in the concrete secondary containment until it encountered a seam, crack, or similar weakness in the containment and then flowed down into the underlying soil. The reported volume of release is less than 365 gallons. The fuel release is anticipated to have flowed vertically down to groundwater estimated to be at a similar elevation to the adjacent river. Some dispersion/diffusion is anticipated in the site soils with extent



likely dependent upon presence of areas of clay/silt or other fines that might present a lower permeability zone. Upon encountering groundwater, the diesel is expected to act as a LNAPL moving primarily through advective transport along the groundwater gradient towards the river. The short-time period between when the release was identified and indications of impact to the river (observed sheen), supports this conceptual model. See Figure 4 for a cross section view of the conceptual model. It should be noted that Fulcrum's conceptual model does anticipate that the released diesel fuel may have passed through soils that were impacted by historic releases resulting in a broader range of potential contaminants. Based on the above outlined conceptual model, adverse impact to the river is the primary exposure pathway of concern for this release. If uncontrolled and not remediated, potential exists for contact by people and aquatic organisms.



4.1 Model Remedy Selection

Remedial Action Objectives are narrative goals for a cleanup action that address how the cleanup fits into the overall MTCA cleanup process. For this project Fulcrum has identified Ecology's *Guidance for Remediation of Petroleum Contaminated Sites (2016 Revision)*. The following Remedial Action Objectives have been identified for the primary contaminants found at the Site:

1. Removal of all fuel spill contaminated soils to the extent feasible until MTCA cleanup levels have been achieved. If areas are identified where Method A cleanup values cannot be achieved, alternate remedial strategies as allowed under applicable regulations will be evaluated.
2. If needed, placement of monitoring wells following removal of contaminated soil to evaluate potential for residual groundwater impact.

The above proposed remedy presents a permanent solution to the maximum extent practical, and it can be achieved in a reasonable time frame.

5.0 REMEDIATION ACTIVITIES

Following is a brief summation of remedial activities anticipated at the site.

Phase 1 – Spill Response and Containment (Complete) – Capture any free product, place booms and sorbent materials in the impacted portion of the adjacent river shoreline. Hand-excavate capture points along the shoreline and place sorbent materials to intercept contaminants prior to the river's edge.

Phase 2 - Remedial Preparation (Complete) – Empty and remove the ASTs, remove the fuel lines traversing across the river, and remove the concrete secondary containment.

Phase 3 – Characterization (In-Progress) – Collection and analysis of waste characterization samples and initial characterization of extent and nature of subsurface contaminants. Sampling is complete, final analysis is in progress. Based on characterization results, the soil is reportedly suitable for disposal as petroleum contaminated soil at the Roach Construction Land Farm in Genesee, Idaho.

Phase 4 – Bulk Soil Removal (In-Progress) - Removal of contaminated soil from beneath the former bulk fuel storage facility. Fulcrum will oversee removal of contaminated soil. Able will perform soil excavation services and will transport the soil to a nearby land farm permitted to accept petroleum contaminated soil as characterized at the site. Libby Environmental will provide an onsite laboratory to provide analysis. Phase 4 intent is to remove all site soils contaminated by the release, to the extent feasible, without risking adverse impact to the road, bridge, or nearby building. Excavation will proceed based on field screening (PID, discoloration, sheen) and then will be fine-tuned based on sample analysis by the onsite laboratory. Fulcrum anticipates that this phase of work will include excavation past the current groundwater elevation. Preliminary bulk soil removal indicates that it will not be feasible to remove all contaminated soil from the site without potential adverse impact to the adjacent building, bridge, or roads. Bulk soil removal will focus



on the area proximal to the river to allow for placement of a clay aquitard (see Phase 5) and the area of near surface soil impacted by the 2022 fuel spill.

Excavation work during this phase will specifically not impact the riverbank which will be maintained as a natural barrier between the river and the work area. See Figure 5 for a graphic representation of the Phase 4 work area. Turbidity curtain will be staged on site during Phase 4 work in the event that the riverbank becomes unintentionally destabilized during Phase 4 excavation activities.

Phase 5 – Riverbank Impact Removal Option – Depending on results of Phase 4 excavation activities, the Project Team may determine that removal of the impacted area of streambank is advantageous. If so, following completion of Phase 4 activities the excavation area will be rebuilt with clean fill to create a stable working platform to access the riverbank work area. A floating turbidity curtain will be placed just past the existing sorbent booms, parallel to the shoreline to provide a level of protection for the river against sediment load generated during riverbank removal. See Figure 6 for a graphic presentation of the Phase 5 work area. Contaminated sediments will be removed from beneath the riverbank and confirmation samples will be collected for analysis.

Phase 6 – Site Restoration – Following removal of contaminated soils, the excavation will be infilled with like material to what was removed and finished with gravel surfacing. In consideration of the likely presence of contaminants that are not fully excavated, the excavation area immediately proximal to the river will be infilled with an area of compact clay to provide an aquitard between the site and the river. The planned compact clay fill area is estimated at 10-12 feet in depth below the river shoreline, 10-12 feet south from the shoreline, and extending approximately 40 feet along the shoreline. The riverbank and slope will be rebuilt to the pre-existing position and slope and armored with two- to three-foot diameter basalt boulders to water's edge, then top coated with 12-inch minus basalt cobble. The slope and bank will be allowed to revegetate naturally to match the surrounding conditions. See Figure 7 for a graphic representation of planned reconstruction.

Phase 7 – Groundwater Investigation – Fulcrum anticipates that presence of diesel impact to groundwater as evidenced by the capture points along the river's edge may trigger a requirement for a groundwater investigation. If needed, specific details and locations of monitoring well placement and construction will be determined based on observed conditions during the excavation and rebuild process. Generally, Fulcrum would anticipate placement of one up gradient well and two wells in the area of anticipated groundwater impact. All three (3) wells would likely be installed to a depth of 5-10 feet past current groundwater level with a screened interval and construction detail appropriate to characterize groundwater in the near surface unconfined alluvial aquifer. Depending on final site remedial condition, some manner of monitoring wells may be considered for placement on the stream bank as well.

6.0 VALIDATION SAMPLING

Fulcrum will conduct site sampling in accordance with the project specific Sampling and Analysis Plan (SAP). All final verification samples will be analyzed for diesel-range and gasoline-range petroleum hydrocarbons, and BTEX using an appropriately certified laboratory.



Confirmation sampling will be conducted as follows:

6.1 Confirmation Soil Sampling

Final discrete soil samples will be collected from the specific location that, based on field screening, suggests the highest potential for the identified contaminants of concern. Based on limitations in contaminated soil removal as outlined above, Fulcrum anticipates that it may not be possible to excavate to clean sidewalls and pit bottoms in all locations. If so, excavation extents will still be sampled to document site condition.

6.1.1 Pit Bottom Samples

- A minimum of four (4) samples will be collected from the excavation pit bottom.
- Where the total area of the exaction exceeds 500 square feet, then one (1) additional pit bottom sample will be collected for every 1,000 additional square feet.

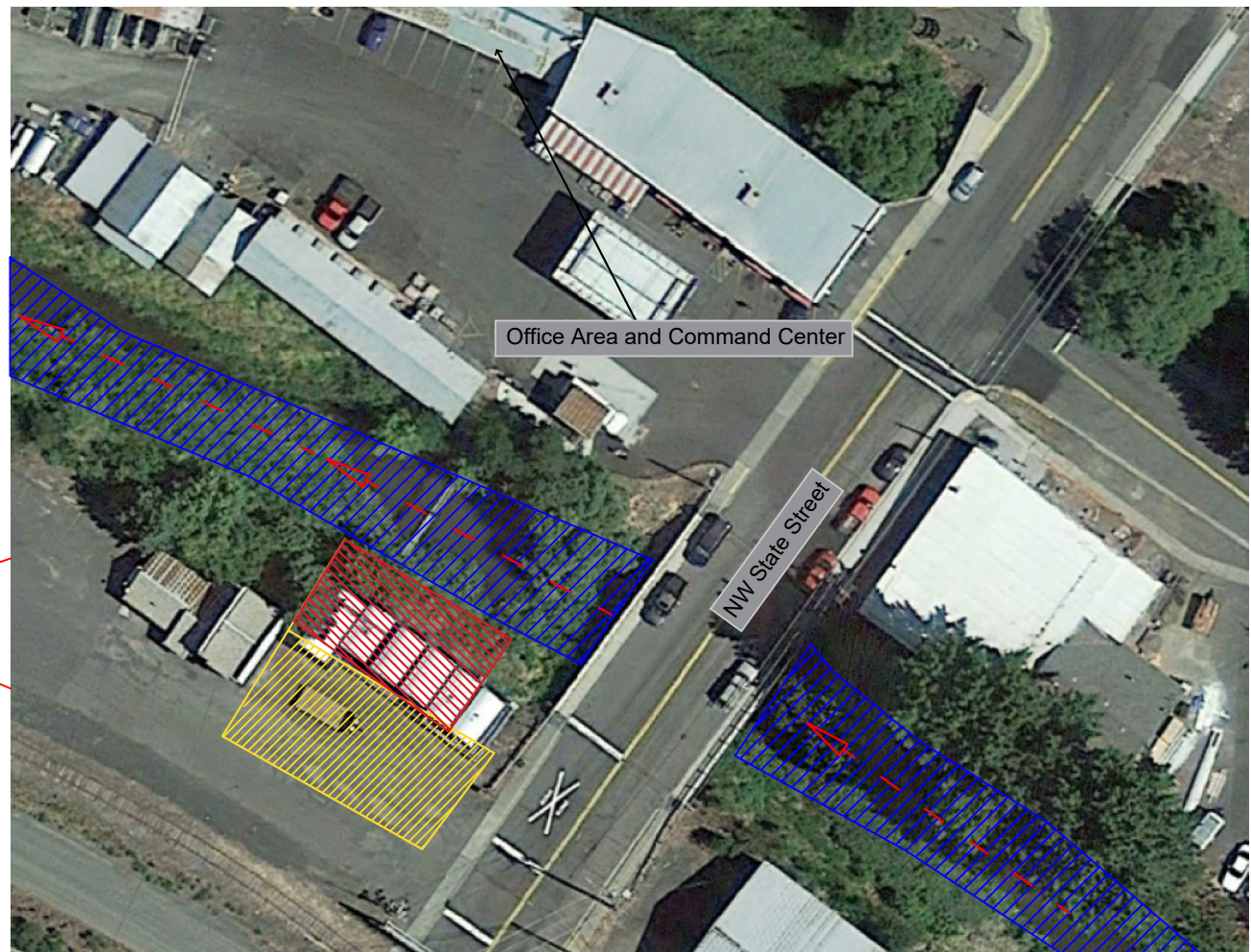
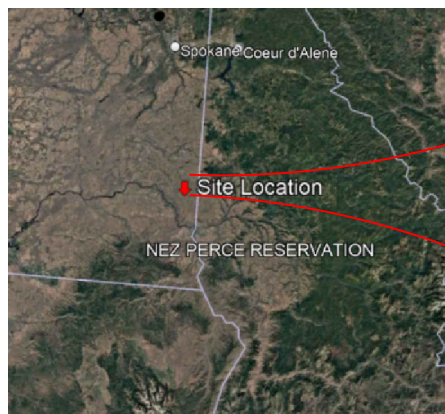
Fulcrum estimates that up to approximately 6-8 confirmation samples will be collected form the excavation pit bottom.

6.1.2 Sidewall Samples





- A minimum of 12 samples will be collected from the excavation sidewalls. Fulcrum anticipates collection of four samples each for the east, west, and south sidewalls (the north sidewall area constitutes the riverbank slope that will be removed). Samples will be collected from heights and locations identified as most suspect for presence of contaminants of concern.



FIGURES



LEGEND

-  Flow direction
-  South Fork Palouse River
-  Approximate excavation area
-  Staging and storage area

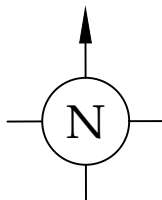


Figure 1: General Site Location Map

355 Northwest State Street
Pullman, Washington 99163



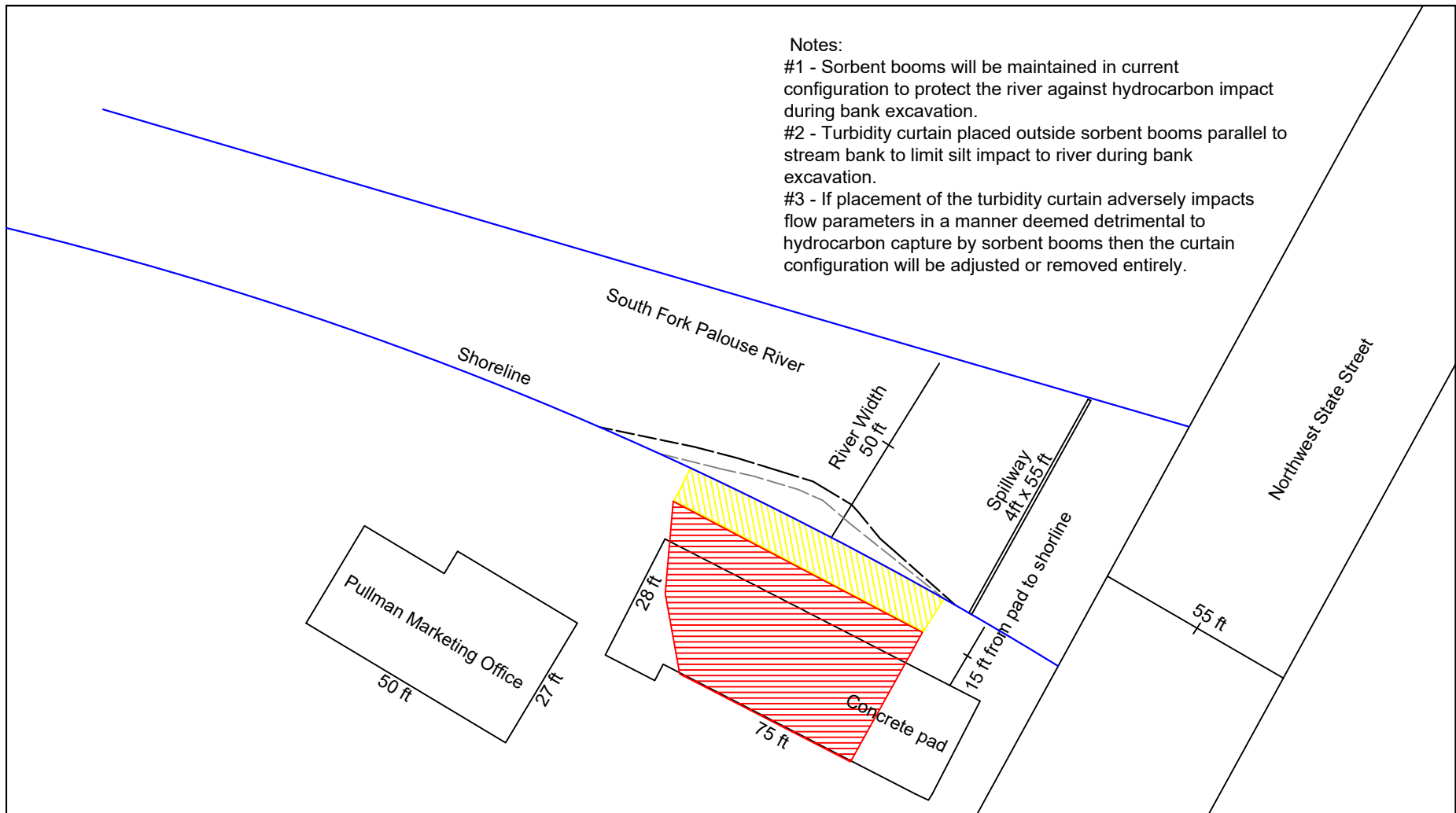
FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken

PROJECT NUMBER: 223516.00

DATE: May 25, 2022

REVIEWED BY: Scott Groat



LEGEND



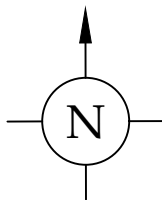
Phase one excavation area



Phase two shoreline excavation area

----- Turbidity Curtain

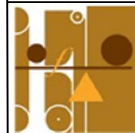
----- Sorbent Boom



Approximate Scale In Feet

Figure 2: Site Plan View and Remedial Work Area

355 Northwest State Street
Pullman, Washington 99163



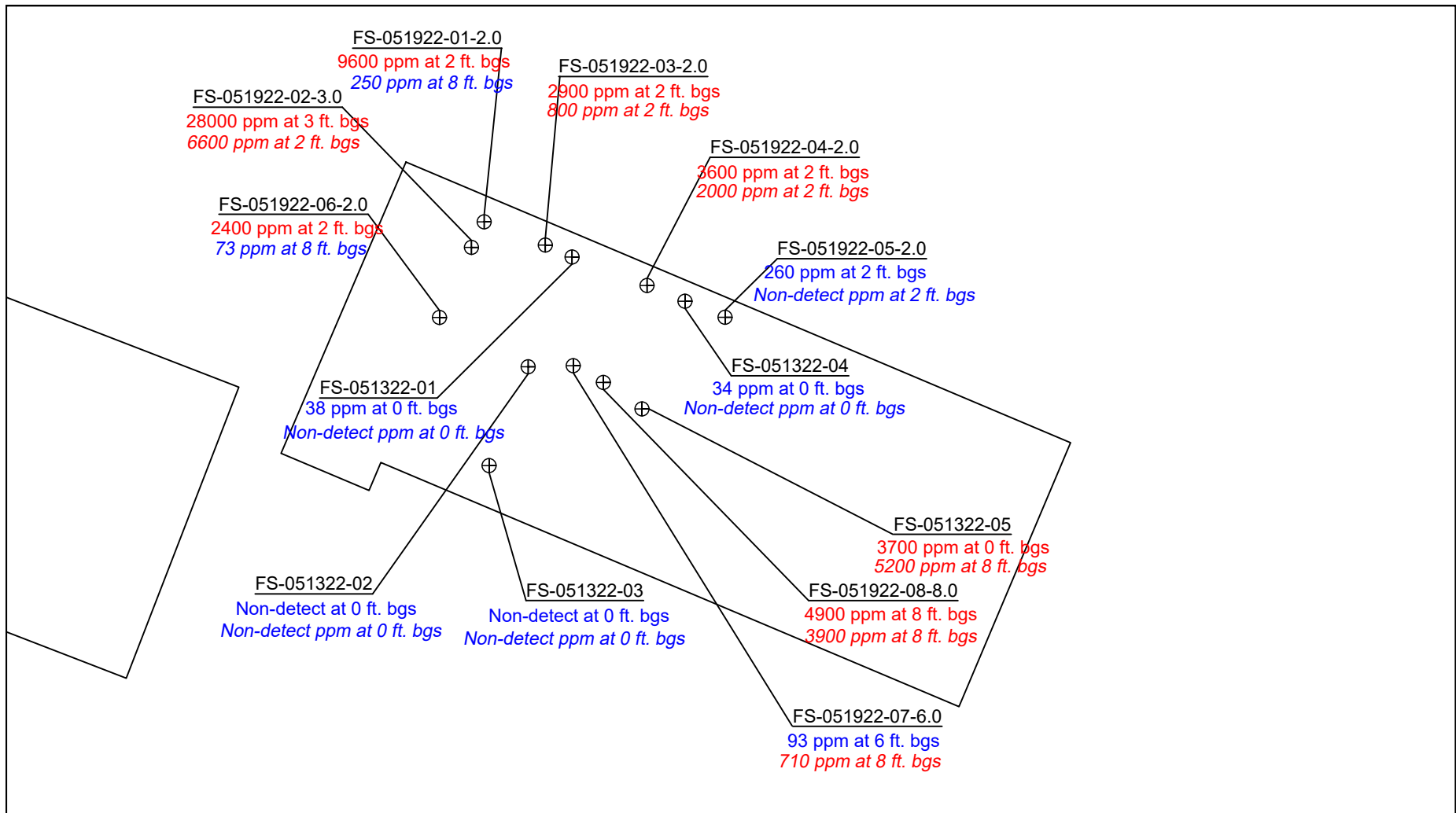
FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken

DATE: May 25, 2022

PROJECT NUMBER: 223516.00

REVIEWED BY: Travis Trent



LEGEND

Characterization sample ID
 Diesel Concentration **Above** / **Below** Cleanup
 Gasoline Concentration **Above** / **Below** Cleanup

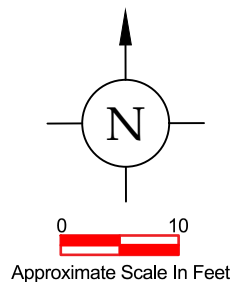


Figure 3: Characterization Soil Sample Location Map

355 Northwest State Street
 Pullman, Washington 99163



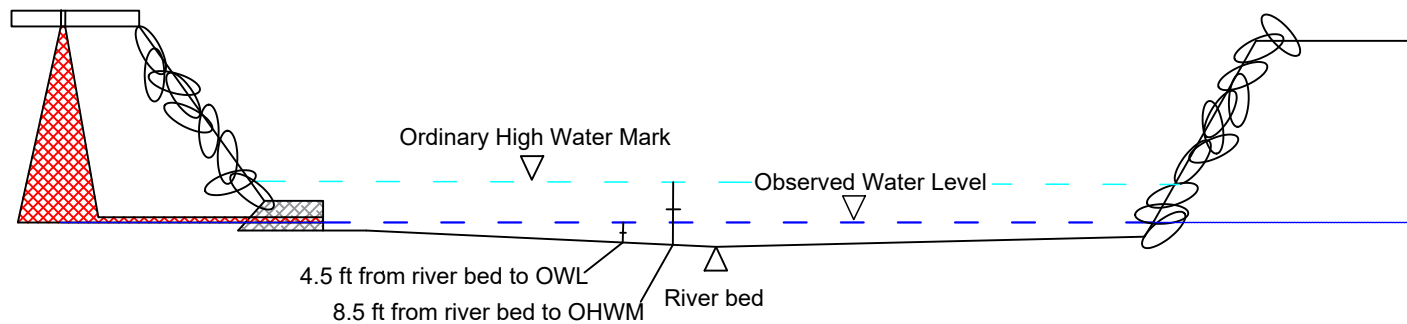
FULCRUM ENVIRONMENTAL CONSULTING, INC.
 207 W. BOONE AVENUE
 SPOKANE, WASHINGTON 99201
 (509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken






DATE: May 25, 2022

PROJECT NUMBER: 223516.00

REVIEWED BY: Travis Trent



LEGEND

-  Concrete pad
-  Basalt riprap
-  Native soils
-  Anticipated diesel impact area
-  Approximate groundwater elevation

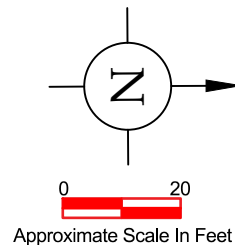


Figure 4: Cross Section View of Conceptual Model

355 Northwest State Street
Pullman, Washington 99163



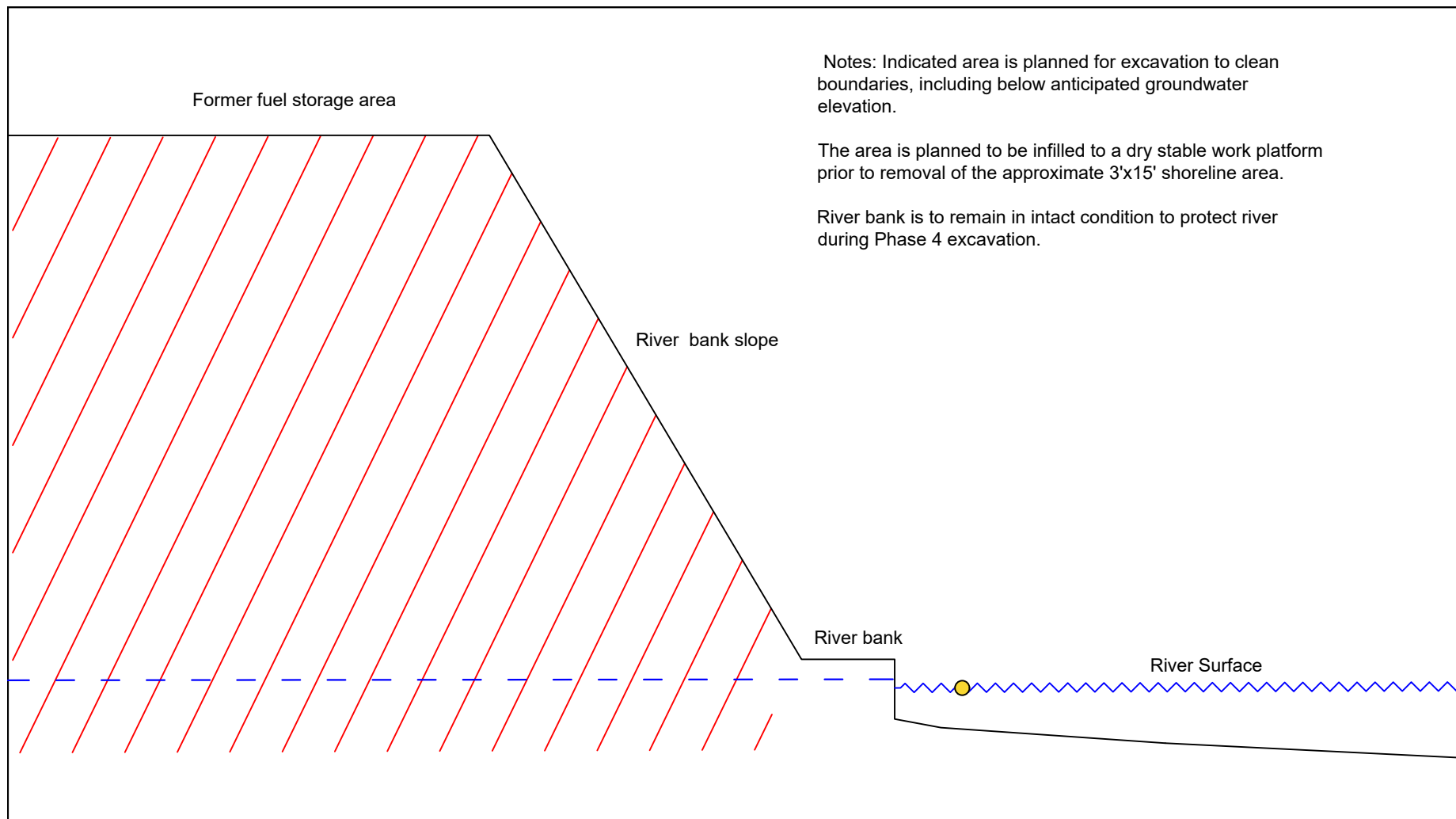
FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken

PROJECT NUMBER: 223516.00

DATE: May 25, 2022

REVIEWED BY: Scott Groat



Notes: Indicated area is planned for excavation to clean boundaries, including below anticipated groundwater elevation.

The area is planned to be infilled to a dry stable work platform prior to removal of the approximate 3'x15' shoreline area.

River bank is to remain in intact condition to protect river during Phase 4 excavation.

LEGEND



Phase One removal area



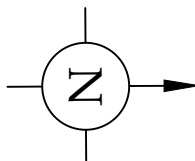
Observed water level



Anticipated groundwater level



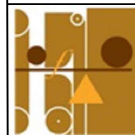
Sorbent boom



Approximate Scale In Feet

Figure 5: Phase 4 Remedial Work Area Site Map

355 Northwest State Street
Pullman, Washington 99163



FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

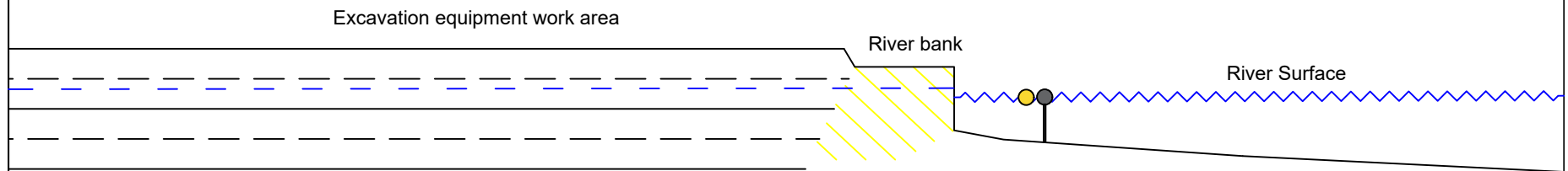
MAP BY: Ethan Ducken

PROJECT NUMBER: 223516.00

DATE: May 25, 2022

REVIEWED BY: Travis Trent

Notes: The Phase 4 excavation area will be filled and compacted to above the water table prior to Phase 5 excavation.



Fill to required compaction



Phase two shoreline excavation area



Observed water level

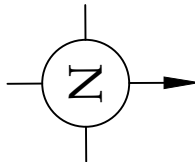


Anticipated groundwater level

● Sorbent boom

● Turbidity curtain

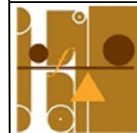
LEGEND



Approximate Scale In Feet

Figure 6: Phase 5 Remedial Work Area Site Map

355 Northwest State Street
Pullman, Washington 99163



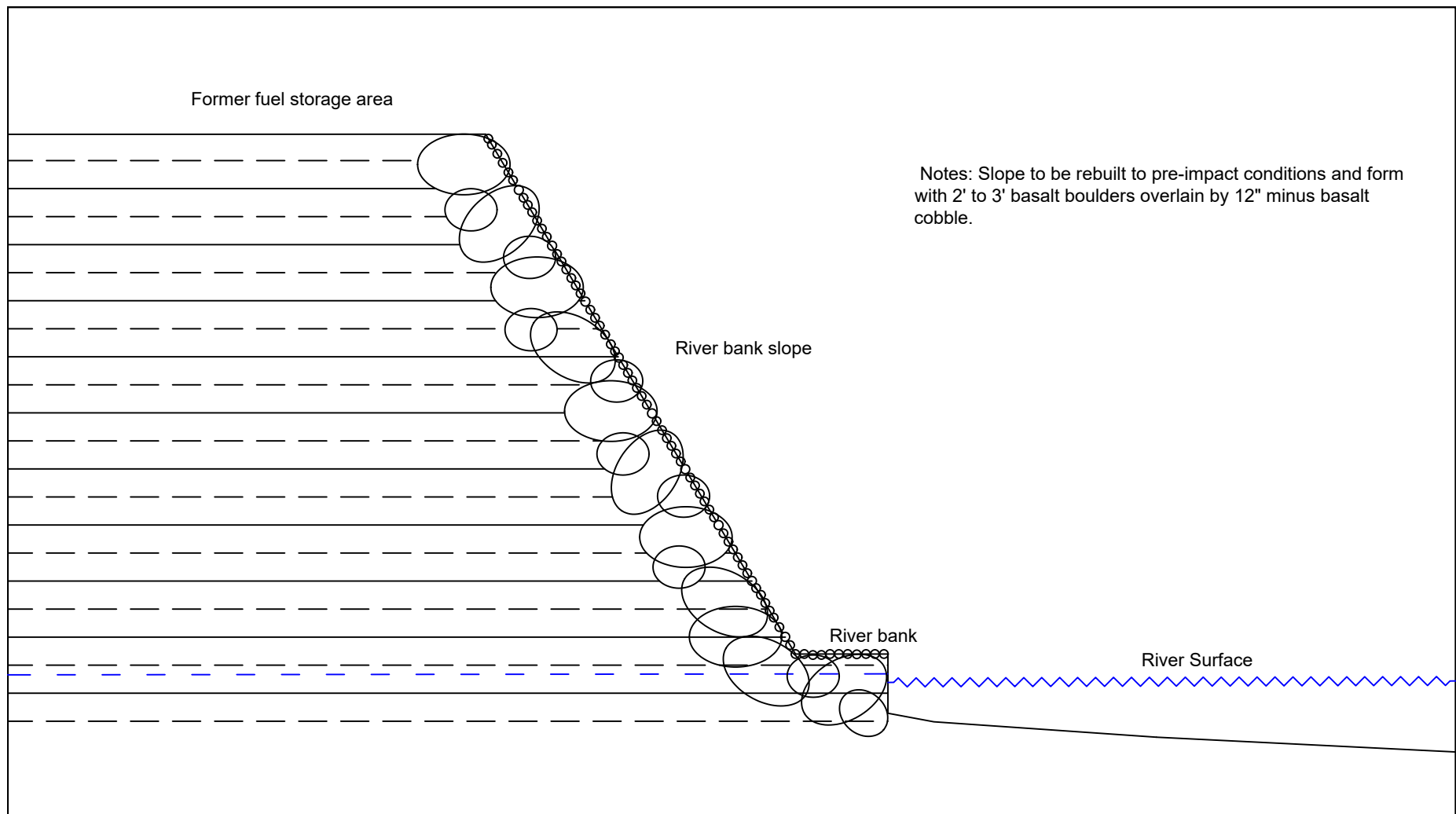
FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken

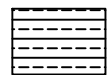
DATE: May 25, 2022

PROJECT NUMBER: 223516.00

REVIEWED BY: Travis Trent



LEGEND



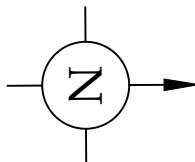
Fill to required compaction



Observed water level



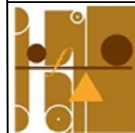
Anticipated groundwater level



Approximate Scale In Feet

Figure 7: Site Restoration Map

355 Northwest State Street
Pullman, Washington 99163



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(509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken

DATE: May 25, 2022

PROJECT NUMBER: 223516.00

REVIEWED BY: Travis Trent



APPENDIX A

Applicable Certifications



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

TRAVIS L TRENT
1127 W 8th Ave
Spokane WA 99204-3107

364

License Number

01/08/2002

Issue Date

06/06/2022

Expiration Date

Teresa Berntsen

Teresa Berntsen, Director

The Board for Global EHS Credentialing (BGC)

through its vested authority, hereby confirms that

Travis L. Trent

has met all requirements of education, experience, and examination, and on-going maintenance set forth through the BGC's American Board of Industrial Hygiene®'s (ABIH®) credentialing division for re-certification in the Comprehensive Practice of Industrial Hygiene and is thereby conferred the credential of

Certified Industrial Hygienist® (CIH®)

The aforementioned individual is given all rights, privileges, and responsibilities as both a diplomate of the BGC and holder of the CIH credential, provided that the credential is not suspended or revoked, and it is renewed annually. Moreover, the holder must meet all recertification requirements, including the obligation to practice ethically as prescribed by the BGC.

Credential Number: 9850 CP

Award Date: November 19, 2010

Expiration Date: June 1, 2026



A handwritten signature in blue ink, reading "Cynthia Hanko", is written over a horizontal line.

Cynthia Hanko, CIH
Chair of the Board of Directors

A handwritten signature in blue ink, reading "Ulric K. Chung", is written over a horizontal line.

Ulric K. Chung, MCS, PhD
Chief Executive Officer and Secretary





APPENDIX B

Laboratory Analytical Results

ANALYTICAL REPORT

Eurofins Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

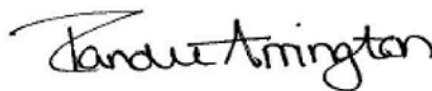
Laboratory Job ID: 590-17521-2

Laboratory Sample Delivery Group: Four Star
Client Project/Site: 223516.00/Four Star

For:

Fulcrum Environmental
207 West Boone Avenue
Spokane, Washington 99201

Attn: Scott Groat



Authorized for release by:

5/23/2022 6:13:53 PM

Randee Arrington, Lab Director
(509)924-9200

Randee.Arrington@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Table of Contents	2
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Client Sample Results	6
QC Sample Results	7
Chronicle	8
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Method Summary	10
Chain of Custody	11
Receipt Checklists	12

Case Narrative

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Job ID: 590-17521-2

Laboratory: Eurofins Spokane

Narrative

Receipt

The samples were received on 5/16/2022 2:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.2° C.

Receipt Exceptions

The following sample was activated for 6010D TCLP Lead analysis by the client on 05/19/22: FS-051322-03 (590-17521-3). This analysis was not originally requested on the chain-of-custody (COC).

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-17521-3	FS-051322-03	Solid	05/13/22 15:30	05/16/22 14:55

1

2

3

4

5

6

7

8

9

10

11

12

Definitions/Glossary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Client Sample ID: FS-051322-03

Lab Sample ID: 590-17521-3

Date Collected: 05/13/22 15:30

Matrix: Solid

Date Received: 05/16/22 14:55

Method: 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060		mg/L		05/23/22 12:08	05/23/22 17:11	1

QC Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Method: 6010D - Metals (ICP)

Lab Sample ID: LCS 590-36207/1-A
Matrix: Solid
Analysis Batch: 36214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36207

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	1.00	1.03		mg/L		103	80 - 120

Lab Sample ID: LB 590-36174/1-B
Matrix: Solid
Analysis Batch: 36214

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 36207

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060		mg/L		05/23/22 12:08	05/23/22 16:05	1

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Client Sample ID: FS-051322-03

Lab Sample ID: 590-17521-3

Date Collected: 05/13/22 15:30

Matrix: Solid

Date Received: 05/16/22 14:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			100.43 g	2000.22 mL	36174	05/19/22 18:00	AMB	TAL SPK
TCLP	Prep	3010A			50 mL	50 mL	36207	05/23/22 12:08	JSP	TAL SPK
TCLP	Analysis	6010D		1			36214	05/23/22 17:11	JSP	TAL SPK

Laboratory References:

TAL SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Laboratory: Eurofins Spokane

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-06-23

1
2
3
4
5
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12

Method Summary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Method	Method Description	Protocol	Laboratory
6010D	Metals (ICP)	SW846	TAL SPK
1311	TCLP Extraction	SW846	TAL SPK
3010A	Preparation, Total Metals	SW846	TAL SPK

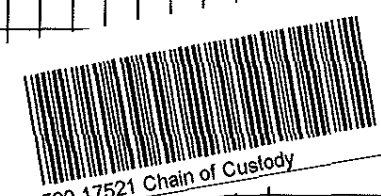
Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Chain of Custody Record

Regulatory Program <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other:		TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica																																											
Client Contact Fulcrum Environmental Consulting 207 West Boone Avenue Spokane, Washington 99201 509-459-9220 FAX Project Name: <u>223516.00</u> Site: <u>Four Star</u> P O #		Project Manager: <u>Scott Wadsworth</u> Email: <u>scott.wadsworth@fulcrum.net</u> Tel/Fax:																																											
Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <u>3 days</u> <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Contact: Lab Contact: Date: <u>8/16/22</u> Carrier:																																											
Sample Identification		COC No: _____ of _____ COCs TALS Project #: _____ Sampler: _____ For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No. _____ Sample Specific Notes:																																											
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=Grab)</th> <th>Matrix</th> <th># of Cont.</th> <th>Filtered Sample (Y/N)</th> <th>Perform MS / MSD (Y/N)</th> </tr> </thead> <tbody> <tr> <td>5/13</td> <td>300</td> <td>G</td> <td>S</td> <td>4</td> <td></td> <td></td> </tr> <tr> <td></td> <td>315</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>330</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>345</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>400</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	5/13	300	G	S	4				315							330							345							400						<div style="border: 1px solid black; padding: 5px; transform: rotate(-10deg); display: inline-block;">  590-17521 Chain of Custody </div>		
Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)																																							
5/13	300	G	S	4																																									
	315																																												
	330																																												
	345																																												
	400																																												
Preservation Used: 1=Ice; 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months																																											
Possible Hazard Identification Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Special Instructions/QC Requirements & Comments: <u>Email results to Scott@fulcrum.net and red.groves@fulcrum.net</u>																																											
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No. _____ Cooler Temp. (°C) Obs'd: <u>5.2</u> Corr'd: <u>5.2</u> Therm ID No.: <u>13506</u>																																											
Relinquished by: <u>Red LWR</u>		Relinquished by: <u>Fulcrum</u>																																											
Relinquished by:		Relinquished by:																																											
Relinquished by:		Relinquished by:																																											

Login Sample Receipt Checklist

Client: Fulcrum Environmental

Job Number: 590-17521-2

SDG Number: Four Star

Login Number: 17521

List Number: 1

Creator: Vaughan, Madison 1

List Source: Eurofins Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

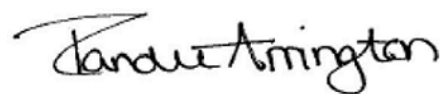
Laboratory Job ID: 590-17521-1

Laboratory Sample Delivery Group: Four Star
Client Project/Site: 223516.00/Four Star

For:

Fulcrum Environmental
207 West Boone Avenue
Spokane, Washington 99201

Attn: Scott Groat



Authorized for release by:
5/18/2022 3:42:45 PM

Randee Arrington, Lab Director
(509)924-9200

Randee.Arrington@et.eurofinsus.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Job ID: 590-17521-1

Laboratory: Eurofins Spokane

Narrative

Receipt

The samples were received on 5/16/2022 2:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.2° C.

GC/MS VOA

Method 8260D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 590-36146 and analytical batch 590-36144 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: Surrogate recovery for the following sample was outside control limits: FS-051322-05 (590-17521-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method NWTPH-Dx: Surrogate recovery for the following sample was outside control limits: FS-051322-05 (590-17521-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6010D: The post digestion spike % recovery for Lead associated with batch 590-36151 was below the lower control limit. The associated sample is: (590-17521-A-1-A PDS).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-17521-1	FS-051322-01	Solid	05/13/22 15:00	05/16/22 14:55
590-17521-2	FS-051322-02	Solid	05/13/22 15:15	05/16/22 14:55
590-17521-3	FS-051322-03	Solid	05/13/22 15:30	05/16/22 14:55
590-17521-4	FS-051322-04	Solid	05/13/22 15:45	05/16/22 14:55
590-17521-5	FS-051322-05	Solid	05/13/22 16:00	05/16/22 14:55

Definitions/Glossary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-01

Lab Sample ID: 590-17521-1

Date Collected: 05/13/22 15:00

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 80.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.027		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1
Ethylbenzene	ND		0.14		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1
m,p-Xylene	ND		0.54		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1
o-Xylene	ND		0.27		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1
Toluene	ND		0.14		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1
Xylenes, Total	ND		0.81		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129	05/17/22 11:33	05/17/22 12:56	1
4-Bromofluorobenzene (Surr)	104		76 - 122	05/17/22 11:33	05/17/22 12:56	1
Dibromofluoromethane (Surr)	94		80 - 120	05/17/22 11:33	05/17/22 12:56	1
Toluene-d8 (Surr)	111		80 - 120	05/17/22 11:33	05/17/22 12:56	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.8		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		41.5 - 162	05/17/22 11:33	05/17/22 12:56	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	38		12		mg/Kg	☆	05/17/22 12:50	05/17/22 19:45	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	☆	05/17/22 12:50	05/17/22 19:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	92		50 - 150	05/17/22 12:50	05/17/22 19:45	1
n-Triacontane-d62	97		50 - 150	05/17/22 12:50	05/17/22 19:45	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	24		13		mg/Kg	☆	05/17/22 10:24	05/17/22 14:22	5

Client Sample ID: FS-051322-02

Lab Sample ID: 590-17521-2

Date Collected: 05/13/22 15:15

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 80.7

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	F1 F2	0.030		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1
Ethylbenzene	ND	F1 F2	0.15		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1
m,p-Xylene	ND	F1	0.59		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1
o-Xylene	ND	F1 F2	0.30		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1
Toluene	ND	F1	0.15		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1
Xylenes, Total	ND		0.89		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129	05/17/22 11:33	05/17/22 13:40	1
4-Bromofluorobenzene (Surr)	104		76 - 122	05/17/22 11:33	05/17/22 13:40	1
Dibromofluoromethane (Surr)	88		80 - 120	05/17/22 11:33	05/17/22 13:40	1

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Client Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-02

Lab Sample ID: 590-17521-2

Date Collected: 05/13/22 15:15

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 80.7

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		80 - 120	05/17/22 11:33	05/17/22 13:40	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.4		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		41.5 - 162	05/17/22 11:33	05/17/22 13:40	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		12		mg/Kg	☆	05/17/22 12:50	05/17/22 20:26	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	☆	05/17/22 12:50	05/17/22 20:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	87		50 - 150	05/17/22 12:50	05/17/22 20:26	1
n-Triacontane-d62	94		50 - 150	05/17/22 12:50	05/17/22 20:26	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	19		13		mg/Kg	☆	05/17/22 10:24	05/17/22 14:41	5

Client Sample ID: FS-051322-03

Lab Sample ID: 590-17521-3

Date Collected: 05/13/22 15:30

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 80.3

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.030		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1
Ethylbenzene	ND		0.15		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1
m,p-Xylene	ND		0.59		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1
o-Xylene	ND		0.30		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1
Toluene	ND		0.15		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1
Xylenes, Total	ND		0.89		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 129	05/17/22 11:33	05/17/22 14:45	1
4-Bromofluorobenzene (Surr)	104		76 - 122	05/17/22 11:33	05/17/22 14:45	1
Dibromofluoromethane (Surr)	101		80 - 120	05/17/22 11:33	05/17/22 14:45	1
Toluene-d8 (Surr)	101		80 - 120	05/17/22 11:33	05/17/22 14:45	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.4		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		41.5 - 162	05/17/22 11:33	05/17/22 14:45	1

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Client Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-03

Lab Sample ID: 590-17521-3

Date Collected: 05/13/22 15:30

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 80.3

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		12		mg/Kg	☆	05/17/22 12:50	05/17/22 20:47	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	☆	05/17/22 12:50	05/17/22 20:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	95		50 - 150				05/17/22 12:50	05/17/22 20:47	1
<i>n</i> -Triacontane-d62	103		50 - 150				05/17/22 12:50	05/17/22 20:47	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	160		14		mg/Kg	☆	05/17/22 10:24	05/17/22 14:57	5

Client Sample ID: FS-051322-04

Lab Sample ID: 590-17521-4

Date Collected: 05/13/22 15:45

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 82.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.034		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
Ethylbenzene	ND		0.17		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
m,p-Xylene	ND		0.68		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
<i>o</i> -Xylene	ND		0.34		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
Toluene	ND		0.17		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
Xylenes, Total	ND		1.0		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129				05/17/22 11:33	05/17/22 15:29	1
4-Bromofluorobenzene (Surr)	102		76 - 122				05/17/22 11:33	05/17/22 15:29	1
Dibromofluoromethane (Surr)	94		80 - 120				05/17/22 11:33	05/17/22 15:29	1
Toluene-d8 (Surr)	106		80 - 120				05/17/22 11:33	05/17/22 15:29	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		8.5		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		41.5 - 162				05/17/22 11:33	05/17/22 15:29	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	34		12		mg/Kg	☆	05/17/22 12:50	05/17/22 21:07	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	☆	05/17/22 12:50	05/17/22 21:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	97		50 - 150				05/17/22 12:50	05/17/22 21:07	1
<i>n</i> -Triacontane-d62	99		50 - 150				05/17/22 12:50	05/17/22 21:07	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	16		12		mg/Kg	☆	05/17/22 10:24	05/17/22 15:01	5

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-05

Lab Sample ID: 590-17521-5

Date Collected: 05/13/22 16:00

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 84.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.036		mg/Kg	☆	05/17/22 11:33	05/17/22 15:51	1
Ethylbenzene	0.83		0.18		mg/Kg	☆	05/17/22 11:33	05/17/22 15:51	1
m,p-Xylene	3.8		0.72		mg/Kg	☆	05/17/22 11:33	05/17/22 15:51	1
o-Xylene	4.6		0.36		mg/Kg	☆	05/17/22 11:33	05/17/22 15:51	1
Toluene	0.49		0.18		mg/Kg	☆	05/17/22 11:33	05/17/22 15:51	1
Xylenes, Total	8.4		1.1		mg/Kg	☆	05/17/22 11:33	05/17/22 15:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 129	05/17/22 11:33	05/17/22 15:51	1
4-Bromofluorobenzene (Surr)	165	S1+	76 - 122	05/17/22 11:33	05/17/22 15:51	1
Dibromofluoromethane (Surr)	96		80 - 120	05/17/22 11:33	05/17/22 15:51	1
Toluene-d8 (Surr)	90		80 - 120	05/17/22 11:33	05/17/22 15:51	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	5200		900		mg/Kg	☆	05/17/22 11:33	05/17/22 17:18	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		41.5 - 162	05/17/22 11:33	05/17/22 17:18	100

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	3700		110		mg/Kg	☆	05/17/22 12:50	05/17/22 21:28	10
Residual Range Organics (RRO) (C25-C36)	ND		280		mg/Kg	☆	05/17/22 12:50	05/17/22 21:28	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	207	S1+	50 - 150	05/17/22 12:50	05/17/22 21:28	10
n-Triacontane-d62	100		50 - 150	05/17/22 12:50	05/17/22 21:28	10

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		12		mg/Kg	☆	05/17/22 10:24	05/17/22 15:05	5

QC Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-36146/1-A

Matrix: Solid

Analysis Batch: 36144

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36146

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020		mg/Kg		05/17/22 11:33	05/17/22 11:50	1
Ethylbenzene	ND		0.10		mg/Kg		05/17/22 11:33	05/17/22 11:50	1
m,p-Xylene	ND		0.40		mg/Kg		05/17/22 11:33	05/17/22 11:50	1
o-Xylene	ND		0.20		mg/Kg		05/17/22 11:33	05/17/22 11:50	1
Toluene	ND		0.10		mg/Kg		05/17/22 11:33	05/17/22 11:50	1
Xylenes, Total	ND		0.60		mg/Kg		05/17/22 11:33	05/17/22 11:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 129	05/17/22 11:33	05/17/22 11:50	1
4-Bromofluorobenzene (Surr)	103		76 - 122	05/17/22 11:33	05/17/22 11:50	1
Dibromofluoromethane (Surr)	91		80 - 120	05/17/22 11:33	05/17/22 11:50	1
Toluene-d8 (Surr)	106		80 - 120	05/17/22 11:33	05/17/22 11:50	1

Lab Sample ID: LCS 590-36146/2-A

Matrix: Solid

Analysis Batch: 36144

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36146

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.500	0.482		mg/Kg		96	76 - 139
Ethylbenzene	0.500	0.491		mg/Kg		98	77 - 135
m,p-Xylene	0.500	0.476		mg/Kg		95	78 - 130
o-Xylene	0.500	0.488		mg/Kg		98	77 - 129
Toluene	0.500	0.530		mg/Kg		106	77 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		75 - 129
4-Bromofluorobenzene (Surr)	103		76 - 122
Dibromofluoromethane (Surr)	94		80 - 120
Toluene-d8 (Surr)	105		80 - 120

Lab Sample ID: 590-17521-2 MS

Matrix: Solid

Analysis Batch: 36144

Client Sample ID: FS-051322-02

Prep Type: Total/NA

Prep Batch: 36146

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	ND	F1 F2	0.739	0.465	F1	mg/Kg	⊛	63	76 - 139
Ethylbenzene	ND	F1 F2	0.739	0.459	F1	mg/Kg	⊛	62	77 - 135
m,p-Xylene	ND	F1	0.739	ND	F1	mg/Kg	⊛	61	78 - 130
o-Xylene	ND	F1 F2	0.739	0.485	F1	mg/Kg	⊛	61	77 - 129
Toluene	ND	F1	0.739	0.552	F1	mg/Kg	⊛	69	77 - 131

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		75 - 129
4-Bromofluorobenzene (Surr)	108		76 - 122
Dibromofluoromethane (Surr)	91		80 - 120
Toluene-d8 (Surr)	106		80 - 120

Eurofins Spokane

QC Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 590-17521-2 MSD

Matrix: Solid

Analysis Batch: 36144

Client Sample ID: FS-051322-02

Prep Type: Total/NA

Prep Batch: 36146

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND	F1 F2	0.739	0.539	F1 F2	mg/Kg	✱	73	76 - 139	15	14
Ethylbenzene	ND	F1 F2	0.739	0.554	F1 F2	mg/Kg	✱	75	77 - 135	19	13
m,p-Xylene	ND	F1	0.739	0.619	F1	mg/Kg	✱	73	78 - 130	14	23
o-Xylene	ND	F1 F2	0.739	0.572	F1 F2	mg/Kg	✱	72	77 - 129	16	15
Toluene	ND	F1	0.739	0.619		mg/Kg	✱	78	77 - 131	11	14

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		75 - 129
4-Bromofluorobenzene (Surr)	99		76 - 122
Dibromofluoromethane (Surr)	97		80 - 120
Toluene-d8 (Surr)	103		80 - 120

Lab Sample ID: 590-17521-1 DU

Matrix: Solid

Analysis Batch: 36144

Client Sample ID: FS-051322-01

Prep Type: Total/NA

Prep Batch: 36146

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	ND		ND		mg/Kg	✱	NC	25
Ethylbenzene	ND		ND		mg/Kg	✱	NC	25
m,p-Xylene	ND		ND		mg/Kg	✱	NC	23
o-Xylene	ND		ND		mg/Kg	✱	NC	25
Toluene	ND		ND		mg/Kg	✱	NC	25
Xylenes, Total	ND		ND		mg/Kg	✱	NC	25

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		75 - 129
4-Bromofluorobenzene (Surr)	105		76 - 122
Dibromofluoromethane (Surr)	90		80 - 120
Toluene-d8 (Surr)	108		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-36146/1-A

Matrix: Solid

Analysis Batch: 36143

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36146

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		05/17/22 11:33	05/17/22 11:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		41.5 - 162	05/17/22 11:33	05/17/22 11:50	1

Lab Sample ID: LCS 590-36146/3-A

Matrix: Solid

Analysis Batch: 36143

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36146

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline	50.2	49.3		mg/Kg		98	74.4 - 124

Eurofins Spokane

QC Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		41.5 - 162

Lab Sample ID: 590-17521-1 DU
Matrix: Solid
Analysis Batch: 36143

Client Sample ID: FS-051322-01
Prep Type: Total/NA
Prep Batch: 36146

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Gasoline	ND		ND		mg/Kg	⊛	NC	32.3

	DU	DU	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		41.5 - 162

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 590-36149/1-A
Matrix: Solid
Analysis Batch: 36136

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		10		mg/Kg		05/17/22 12:50	05/17/22 19:05	1
Residual Range Organics (RRO) (C25-C36)	ND		25		mg/Kg		05/17/22 12:50	05/17/22 19:05	1

	MB	MB					Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	83		50 - 150				05/17/22 12:50	05/17/22 19:05	1
n-Triacontane-d62	90		50 - 150				05/17/22 12:50	05/17/22 19:05	1

Lab Sample ID: LCS 590-36149/2-A
Matrix: Solid
Analysis Batch: 36136

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics (DRO) (C10-C25)	66.7	62.6		mg/Kg		94	50 - 150
Residual Range Organics (RRO) (C25-C36)	66.7	73.7		mg/Kg		110	50 - 150

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	101		50 - 150
n-Triacontane-d62	101		50 - 150

Lab Sample ID: 590-17521-1 DU
Matrix: Solid
Analysis Batch: 36136

Client Sample ID: FS-051322-01
Prep Type: Total/NA
Prep Batch: 36149

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Diesel Range Organics (DRO) (C10-C25)	38		33.7		mg/Kg	⊛	11	40
Residual Range Organics (RRO) (C25-C36)	ND		ND	F5	mg/Kg	⊛	44	40

Eurofins Spokane

QC Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 590-17521-1 DU

Matrix: Solid

Analysis Batch: 36136

Client Sample ID: FS-051322-01

Prep Type: Total/NA

Prep Batch: 36149

	DU	DU	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	94		50 - 150
<i>n</i> -Triacontane-d62	95		50 - 150

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 590-36141/2-A

Matrix: Solid

Analysis Batch: 36151

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36141

Analyte	MB	MB								
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
Lead	ND		3.0		mg/Kg		05/17/22 10:24	05/17/22 14:10		1

Lab Sample ID: LCS 590-36141/1-A

Matrix: Solid

Analysis Batch: 36151

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36141

Analyte			Spike	LCS	LCS				%Rec	
			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Lead			50.0	50.6		mg/Kg		101	80 - 120	

Lab Sample ID: 590-17521-1 MS

Matrix: Solid

Analysis Batch: 36151

Client Sample ID: FS-051322-01

Prep Type: Total/NA

Prep Batch: 36141

Analyte	Sample	Sample	Spike	MS	MS				%Rec	
	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Lead	24		58.6	74.3		mg/Kg	✱	86	75 - 125	

Lab Sample ID: 590-17521-1 MSD

Matrix: Solid

Analysis Batch: 36151

Client Sample ID: FS-051322-01

Prep Type: Total/NA

Prep Batch: 36141

Analyte	Sample	Sample	Spike	MSD	MSD				%Rec	RPD
	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	Limit
Lead	24		60.9	74.3		mg/Kg	✱	83	75 - 125	0 20

Lab Sample ID: 590-17521-1 DU

Matrix: Solid

Analysis Batch: 36151

Client Sample ID: FS-051322-01

Prep Type: Total/NA

Prep Batch: 36141

Analyte	Sample	Sample		DU	DU					RPD
	Result	Qualifier		Result	Qualifier	Unit	D		RPD	Limit
Lead	24			24.2		mg/Kg	✱		2	20

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-01

Date Collected: 05/13/22 15:00

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36142	05/17/22 10:37	NMI	TAL SPK

Client Sample ID: FS-051322-01

Date Collected: 05/13/22 15:00

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-1

Matrix: Solid

Percent Solids: 80.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			11.201 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36144	05/17/22 12:56	JSP	TAL SPK
Total/NA	Prep	5035			11.201 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36143	05/17/22 12:56	JSP	TAL SPK
Total/NA	Prep	3550C			15.33 g	5 mL	36149	05/17/22 12:50	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			36136	05/17/22 19:45	NMI	TAL SPK
Total/NA	Prep	3050B			1.41 g	50 mL	36141	05/17/22 10:24	AMB	TAL SPK
Total/NA	Analysis	6010D		5	10 mL	10 mL	36151	05/17/22 14:22	AMB	TAL SPK

Client Sample ID: FS-051322-02

Date Collected: 05/13/22 15:15

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36142	05/17/22 10:37	NMI	TAL SPK

Client Sample ID: FS-051322-02

Date Collected: 05/13/22 15:15

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-2

Matrix: Solid

Percent Solids: 80.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			10.019 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36144	05/17/22 13:40	JSP	TAL SPK
Total/NA	Prep	5035			10.019 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36143	05/17/22 13:40	JSP	TAL SPK
Total/NA	Prep	3550C			15.40 g	5 mL	36149	05/17/22 12:50	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			36136	05/17/22 20:26	NMI	TAL SPK
Total/NA	Prep	3050B			1.45 g	50 mL	36141	05/17/22 10:24	AMB	TAL SPK
Total/NA	Analysis	6010D		5			36151	05/17/22 14:41	AMB	TAL SPK

Client Sample ID: FS-051322-03

Date Collected: 05/13/22 15:30

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36142	05/17/22 10:37	NMI	TAL SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-03

Date Collected: 05/13/22 15:30

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-3

Matrix: Solid

Percent Solids: 80.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			10.091 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36144	05/17/22 14:45	JSP	TAL SPK
Total/NA	Prep	5035			10.091 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36143	05/17/22 14:45	JSP	TAL SPK
Total/NA	Prep	3550C			15.59 g	5 mL	36149	05/17/22 12:50	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			36136	05/17/22 20:47	NMI	TAL SPK
Total/NA	Prep	3050B			1.37 g	50 mL	36141	05/17/22 10:24	AMB	TAL SPK
Total/NA	Analysis	6010D		5			36151	05/17/22 14:57	AMB	TAL SPK

Client Sample ID: FS-051322-04

Date Collected: 05/13/22 15:45

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36142	05/17/22 10:37	NMI	TAL SPK

Client Sample ID: FS-051322-04

Date Collected: 05/13/22 15:45

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-4

Matrix: Solid

Percent Solids: 82.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			8.198 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36144	05/17/22 15:29	JSP	TAL SPK
Total/NA	Prep	5035			8.198 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36143	05/17/22 15:29	JSP	TAL SPK
Total/NA	Prep	3550C			15.36 g	5 mL	36149	05/17/22 12:50	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			36136	05/17/22 21:07	NMI	TAL SPK
Total/NA	Prep	3050B			1.58 g	50 mL	36141	05/17/22 10:24	AMB	TAL SPK
Total/NA	Analysis	6010D		5			36151	05/17/22 15:01	AMB	TAL SPK

Client Sample ID: FS-051322-05

Date Collected: 05/13/22 16:00

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36142	05/17/22 10:37	NMI	TAL SPK

Client Sample ID: FS-051322-05

Date Collected: 05/13/22 16:00

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-5

Matrix: Solid

Percent Solids: 84.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7.358 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36144	05/17/22 15:51	JSP	TAL SPK
Total/NA	Prep	5035			7.358 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		100	0.86 mL	43 mL	36143	05/17/22 17:18	JSP	TAL SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-05

Lab Sample ID: 590-17521-5

Date Collected: 05/13/22 16:00

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 84.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			15.89 g	5 mL	36149	05/17/22 12:50	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		10			36136	05/17/22 21:28	NMI	TAL SPK
Total/NA	Prep	3050B			1.47 g	50 mL	36141	05/17/22 10:24	AMB	TAL SPK
Total/NA	Analysis	6010D		5			36151	05/17/22 15:05	AMB	TAL SPK

Laboratory References:

TAL SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Laboratory: Eurofins Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-06-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
6010D	Metals (ICP)	SW846	TAL SPK
Moisture	Percent Moisture	EPA	TAL SPK
3050B	Preparation, Metals	SW846	TAL SPK
3550C	Ultrasonic Extraction	SW846	TAL SPK
5035	Closed System Purge and Trap	SW846	TAL SPK

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

590-17521 Chain of Custody

Login Sample Receipt Checklist

Client: Fulcrum Environmental

Job Number: 590-17521-1

SDG Number: Four Star

Login Number: 17521

List Number: 1

Creator: Vaughan, Madison 1

List Source: Eurofins Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

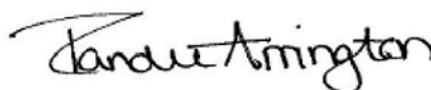
Laboratory Job ID: 590-17564-1

Client Project/Site: Four Star/223516.00

For:

Fulcrum Environmental
207 West Boone Avenue
Spokane, Washington 99201

Attn: Scott Groat



Authorized for release by:

5/23/2022 5:25:09 PM

Randee Arrington, Lab Director
(509)924-9200

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Job ID: 590-17564-1

Laboratory: Eurofins Spokane

Narrative

Receipt

The samples were received on 5/19/2022 4:51 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 8.2° C.

Receipt Exceptions

The following samples were received at the laboratory outside the required temperature criteria: FS-051922-01-2.0 (590-17564-1), FS-051922-02-3.0 (590-17564-2), FS-051922-03-2.0 (590-17564-3), FS-051922-04-2.0 (590-17564-4), FS-051922-05-2.0 (590-17564-5), FS-051922-06-2.0 (590-17564-6), FS-051922-07-6.0 (590-17564-7) and FS-051922-08-8.0 (590-17564-8). The samples are considered acceptable since they were collected and submitted to the laboratory on the same day and there is evidence that the chilling process has begun.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

Method NWTPH-Dx: The continuing calibration verification (CCV) associated with batch 590-36206 recovered above the upper control limit for Diesel Range Organics (DRO) (C10-C25). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method NWTPH-Dx: Detected hydrocarbons in the oil range appear to be due to diesel overlap in the following samples:

FS-051922-02-3.0 (590-17564-2), FS-051922-03-2.0 (590-17564-3), FS-051922-06-2.0 (590-17564-6) and (590-17564-A-1-C DU).

Method NWTPH-Dx: Surrogate recovery for the following samples were outside control limits: FS-051922-01-2.0 (590-17564-1), FS-051922-04-2.0 (590-17564-4), FS-051922-08-8.0 (590-17564-8) and (590-17564-A-1-C DU). Evidence of matrix interference due to high target analytes is present; therefore, re-extraction and/or re-analysis was not performed.

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel and/or a light weight oil in the following sample: FS-051922-05-2.0 (590-17564-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-17564-1	FS-051922-01-2.0	Solid	05/19/22 10:00	05/19/22 16:51
590-17564-2	FS-051922-02-3.0	Solid	05/19/22 10:15	05/19/22 16:51
590-17564-3	FS-051922-03-2.0	Solid	05/19/22 10:30	05/19/22 16:51
590-17564-4	FS-051922-04-2.0	Solid	05/19/22 10:45	05/19/22 16:51
590-17564-5	FS-051922-05-2.0	Solid	05/19/22 11:00	05/19/22 16:51
590-17564-6	FS-051922-06-2.0	Solid	05/19/22 11:15	05/19/22 16:51
590-17564-7	FS-051922-07-6.0	Solid	05/19/22 14:00	05/19/22 16:51
590-17564-8	FS-051922-08-8.0	Solid	05/19/22 14:15	05/19/22 16:51

Definitions/Glossary

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-01-2.0

Lab Sample ID: 590-17564-1

Date Collected: 05/19/22 10:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 76.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.047		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1
Ethylbenzene	ND		0.24		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1
m,p-Xylene	ND		0.95		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1
o-Xylene	ND		0.47		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1
Toluene	ND		0.24		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1
Xylenes, Total	ND		1.4		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 129	05/20/22 10:00	05/20/22 12:18	1
4-Bromofluorobenzene (Surr)	97		76 - 122	05/20/22 10:00	05/20/22 12:18	1
Dibromofluoromethane (Surr)	101		80 - 120	05/20/22 10:00	05/20/22 12:18	1
Toluene-d8 (Surr)	102		80 - 120	05/20/22 10:00	05/20/22 12:18	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	250		12		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		41.5 - 162	05/20/22 10:00	05/20/22 12:18	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	9600		130		mg/Kg	☆	05/23/22 10:33	05/23/22 12:34	10
Residual Range Organics (RRO) (C25-C36)	ND		320		mg/Kg	☆	05/23/22 10:33	05/23/22 12:34	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	379	S1+	50 - 150	05/23/22 10:33	05/23/22 12:34	10
n-Triacontane-d62	89		50 - 150	05/23/22 10:33	05/23/22 12:34	10

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	170		12		mg/Kg	☆	05/20/22 08:05	05/23/22 14:48	5

Client Sample ID: FS-051922-02-3.0

Lab Sample ID: 590-17564-2

Date Collected: 05/19/22 10:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 75.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	F1	0.57		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10
Ethylbenzene	ND	F2 F1	2.8		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10
m,p-Xylene	ND	F1	11		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10
o-Xylene	ND	F1	5.7		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10
Toluene	ND	F2 F1	2.8		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10
Xylenes, Total	ND		17		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 129	05/20/22 10:00	05/20/22 13:01	10
4-Bromofluorobenzene (Surr)	117		76 - 122	05/20/22 10:00	05/20/22 13:01	10
Dibromofluoromethane (Surr)	106		80 - 120	05/20/22 10:00	05/20/22 13:01	10

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Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-02-3.0

Lab Sample ID: 590-17564-2

Date Collected: 05/19/22 10:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 75.1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120	05/20/22 10:00	05/20/22 13:01	10

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	6600		140		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		41.5 - 162	05/20/22 10:00	05/20/22 13:01	10

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO)	28000		130		mg/Kg	☆	05/23/22 10:33	05/23/22 13:15	10

Residual Range Organics (RRO)	770		330		mg/Kg	☆	05/23/22 10:33	05/23/22 13:15	10
(C25-C36)									

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	63		50 - 150	05/23/22 10:33	05/23/22 13:15	10
n-Triacontane-d62	107		50 - 150	05/23/22 10:33	05/23/22 13:15	10

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	79		13		mg/Kg	☆	05/20/22 08:05	05/23/22 14:52	5

Client Sample ID: FS-051922-03-2.0

Lab Sample ID: 590-17564-3

Date Collected: 05/19/22 10:30

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 82.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.040		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1
Ethylbenzene	ND		0.20		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1
m,p-Xylene	ND		0.80		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1
o-Xylene	0.59		0.40		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1
Toluene	ND		0.20		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1
Xylenes, Total	ND		1.2		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 129	05/20/22 10:00	05/20/22 14:06	1
4-Bromofluorobenzene (Surr)	121		76 - 122	05/20/22 10:00	05/20/22 14:06	1
Dibromofluoromethane (Surr)	100		80 - 120	05/20/22 10:00	05/20/22 14:06	1
Toluene-d8 (Surr)	100		80 - 120	05/20/22 10:00	05/20/22 14:06	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	800		10		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		41.5 - 162	05/20/22 10:00	05/20/22 14:06	1

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Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-03-2.0

Lab Sample ID: 590-17564-3

Date Collected: 05/19/22 10:30

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 82.9

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	2900		57		mg/Kg	☆	05/23/22 10:33	05/23/22 13:34	5
Residual Range Organics (RRO) (C25-C36)	ND		140		mg/Kg	☆	05/23/22 10:33	05/23/22 13:34	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	119		50 - 150				05/23/22 10:33	05/23/22 13:34	5
n-Triacontane-d62	91		50 - 150				05/23/22 10:33	05/23/22 13:34	5

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		12		mg/Kg	☆	05/20/22 08:05	05/23/22 15:08	5

Client Sample ID: FS-051922-04-2.0

Lab Sample ID: 590-17564-4

Date Collected: 05/19/22 10:45

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 82.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.44		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
Ethylbenzene	ND		2.2		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
m,p-Xylene	ND		8.8		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
o-Xylene	ND		4.4		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
Toluene	ND		2.2		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
Xylenes, Total	ND		13		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 129				05/20/22 10:00	05/20/22 14:49	10
4-Bromofluorobenzene (Surr)	99		76 - 122				05/20/22 10:00	05/20/22 14:49	10
Dibromofluoromethane (Surr)	96		80 - 120				05/20/22 10:00	05/20/22 14:49	10
Toluene-d8 (Surr)	104		80 - 120				05/20/22 10:00	05/20/22 14:49	10

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2000		110		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		41.5 - 162				05/20/22 10:00	05/20/22 14:49	10

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	3600		59		mg/Kg	☆	05/23/22 10:33	05/23/22 13:54	5
Residual Range Organics (RRO) (C25-C36)	ND		150		mg/Kg	☆	05/23/22 10:33	05/23/22 13:54	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	274	S1+	50 - 150				05/23/22 10:33	05/23/22 13:54	5
n-Triacontane-d62	93		50 - 150				05/23/22 10:33	05/23/22 13:54	5

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	54		12		mg/Kg	☆	05/20/22 08:05	05/23/22 15:12	5

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Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-05-2.0

Lab Sample ID: 590-17564-5

Date Collected: 05/19/22 11:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 87.3

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.046		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1
Ethylbenzene	ND		0.23		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1
m,p-Xylene	ND		0.93		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1
o-Xylene	ND		0.46		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1
Toluene	ND		0.23		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1
Xylenes, Total	ND		1.4		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129	05/20/22 10:00	05/20/22 15:11	1
4-Bromofluorobenzene (Surr)	101		76 - 122	05/20/22 10:00	05/20/22 15:11	1
Dibromofluoromethane (Surr)	90		80 - 120	05/20/22 10:00	05/20/22 15:11	1
Toluene-d8 (Surr)	111		80 - 120	05/20/22 10:00	05/20/22 15:11	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		12		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		41.5 - 162	05/20/22 10:00	05/20/22 15:11	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	260		54		mg/Kg	☆	05/23/22 10:33	05/23/22 14:12	5
Residual Range Organics (RRO) (C25-C36)	ND		140		mg/Kg	☆	05/23/22 10:33	05/23/22 14:12	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150	05/23/22 10:33	05/23/22 14:12	5
n-Triacontane-d62	93		50 - 150	05/23/22 10:33	05/23/22 14:12	5

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	170		11		mg/Kg	☆	05/20/22 08:05	05/23/22 15:16	5

Client Sample ID: FS-051922-06-2.0

Lab Sample ID: 590-17564-6

Date Collected: 05/19/22 11:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 78.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.046		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1
Ethylbenzene	ND		0.23		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1
m,p-Xylene	ND		0.91		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1
o-Xylene	ND		0.46		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1
Toluene	ND		0.23		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1
Xylenes, Total	ND		1.4		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129	05/20/22 10:00	05/20/22 15:33	1
4-Bromofluorobenzene (Surr)	102		76 - 122	05/20/22 10:00	05/20/22 15:33	1
Dibromofluoromethane (Surr)	92		80 - 120	05/20/22 10:00	05/20/22 15:33	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-06-2.0

Lab Sample ID: 590-17564-6

Date Collected: 05/19/22 11:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 78.5

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	111		80 - 120	05/20/22 10:00	05/20/22 15:33	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	73		11		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		41.5 - 162	05/20/22 10:00	05/20/22 15:33	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO)	2400		61		mg/Kg	☆	05/23/22 10:33	05/23/22 14:32	5

Residual Range Organics (RRO)	180		150		mg/Kg	☆	05/23/22 10:33	05/23/22 14:32	5
(C25-C36)									

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	107		50 - 150	05/23/22 10:33	05/23/22 14:32	5
n-Triacontane-d62	93		50 - 150	05/23/22 10:33	05/23/22 14:32	5

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	46		11		mg/Kg	☆	05/20/22 08:05	05/23/22 15:20	5

Client Sample ID: FS-051922-07-6.0

Lab Sample ID: 590-17564-7

Date Collected: 05/19/22 14:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 78.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.049		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1
Ethylbenzene	ND		0.25		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1
m,p-Xylene	ND		0.98		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1
o-Xylene	0.65		0.49		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1
Toluene	ND		0.25		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1
Xylenes, Total	1.5		1.5		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 129	05/20/22 10:00	05/20/22 15:54	1
4-Bromofluorobenzene (Surr)	119		76 - 122	05/20/22 10:00	05/20/22 15:54	1
Dibromofluoromethane (Surr)	104		80 - 120	05/20/22 10:00	05/20/22 15:54	1
Toluene-d8 (Surr)	93		80 - 120	05/20/22 10:00	05/20/22 15:54	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	710		12		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		41.5 - 162	05/20/22 10:00	05/20/22 15:54	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-07-6.0

Lab Sample ID: 590-17564-7

Date Collected: 05/19/22 14:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 78.8

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	93		12		mg/Kg	☆	05/23/22 10:33	05/23/22 14:50	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	☆	05/23/22 10:33	05/23/22 14:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	104		50 - 150				05/23/22 10:33	05/23/22 14:50	1
<i>n</i> -Triacontane-d62	104		50 - 150				05/23/22 10:33	05/23/22 14:50	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		10		mg/Kg	☆	05/20/22 08:05	05/23/22 15:24	5

Client Sample ID: FS-051922-08-8.0

Lab Sample ID: 590-17564-8

Date Collected: 05/19/22 14:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 70.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.061		mg/Kg	☆	05/20/22 10:00	05/20/22 16:15	1
Ethylbenzene	0.50		0.30		mg/Kg	☆	05/20/22 10:00	05/20/22 16:15	1
m,p-Xylene	2.3		1.2		mg/Kg	☆	05/20/22 10:00	05/20/22 16:15	1
o-Xylene	2.3		0.61		mg/Kg	☆	05/20/22 10:00	05/20/22 16:15	1
Toluene	ND		0.30		mg/Kg	☆	05/20/22 10:00	05/20/22 16:15	1
Xylenes, Total	4.6		1.8		mg/Kg	☆	05/20/22 10:00	05/20/22 16:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 129				05/20/22 10:00	05/20/22 16:15	1
4-Bromofluorobenzene (Surr)	123	S1+	76 - 122				05/20/22 10:00	05/20/22 16:15	1
Dibromofluoromethane (Surr)	110		80 - 120				05/20/22 10:00	05/20/22 16:15	1
Toluene-d8 (Surr)	95		80 - 120				05/20/22 10:00	05/20/22 16:15	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	3900		150		mg/Kg	☆	05/20/22 10:00	05/20/22 19:05	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		41.5 - 162				05/20/22 10:00	05/20/22 19:05	10

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	4900		140		mg/Kg	☆	05/23/22 10:33	05/23/22 15:11	10
Residual Range Organics (RRO) (C25-C36)	ND		340		mg/Kg	☆	05/23/22 10:33	05/23/22 15:11	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	180	S1+	50 - 150				05/23/22 10:33	05/23/22 15:11	10
<i>n</i> -Triacontane-d62	86		50 - 150				05/23/22 10:33	05/23/22 15:11	10

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	14		10		mg/Kg	☆	05/20/22 08:05	05/23/22 15:28	5

Eurofins Spokane

QC Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-36200/1-A

Matrix: Solid

Analysis Batch: 36199

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36200

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020		mg/Kg		05/20/22 10:00	05/20/22 11:13	1
Ethylbenzene	ND		0.10		mg/Kg		05/20/22 10:00	05/20/22 11:13	1
m,p-Xylene	ND		0.40		mg/Kg		05/20/22 10:00	05/20/22 11:13	1
o-Xylene	ND		0.20		mg/Kg		05/20/22 10:00	05/20/22 11:13	1
Toluene	ND		0.10		mg/Kg		05/20/22 10:00	05/20/22 11:13	1
Xylenes, Total	ND		0.60		mg/Kg		05/20/22 10:00	05/20/22 11:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 129	05/20/22 10:00	05/20/22 11:13	1
4-Bromofluorobenzene (Surr)	88		76 - 122	05/20/22 10:00	05/20/22 11:13	1
Dibromofluoromethane (Surr)	107		80 - 120	05/20/22 10:00	05/20/22 11:13	1
Toluene-d8 (Surr)	104		80 - 120	05/20/22 10:00	05/20/22 11:13	1

Lab Sample ID: LCS 590-36200/2-A

Matrix: Solid

Analysis Batch: 36199

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36200

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.500	0.512		mg/Kg		102	76 - 139
Ethylbenzene	0.500	0.491		mg/Kg		98	77 - 135
m,p-Xylene	0.500	0.493		mg/Kg		99	78 - 130
o-Xylene	0.500	0.491		mg/Kg		98	77 - 129
Toluene	0.500	0.525		mg/Kg		105	77 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		75 - 129
4-Bromofluorobenzene (Surr)	91		76 - 122
Dibromofluoromethane (Surr)	105		80 - 120
Toluene-d8 (Surr)	102		80 - 120

Lab Sample ID: 590-17564-2 MS

Matrix: Solid

Analysis Batch: 36199

Client Sample ID: FS-051922-02-3.0

Prep Type: Total/NA

Prep Batch: 36200

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	ND	F1	14.2	9.86	F1	mg/Kg	⊛	69	76 - 139
Ethylbenzene	ND	F2 F1	14.2	9.46	F1	mg/Kg	⊛	67	77 - 135
m,p-Xylene	ND	F1	14.2	ND	F1	mg/Kg	⊛	65	78 - 130
o-Xylene	ND	F1	14.2	10.1	F1	mg/Kg	⊛	71	77 - 129
Toluene	ND	F2 F1	14.2	9.21	F1	mg/Kg	⊛	65	77 - 131

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		75 - 129
4-Bromofluorobenzene (Surr)	112		76 - 122
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	96		80 - 120

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QC Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 590-17564-2 MSD

Matrix: Solid

Analysis Batch: 36199

Client Sample ID: FS-051922-02-3.0

Prep Type: Total/NA

Prep Batch: 36200

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND	F1	14.2	11.2		mg/Kg	✱	79	76 - 139	13	14
Ethylbenzene	ND	F2 F1	14.2	11.2	F2	mg/Kg	✱	79	77 - 135	17	13
m,p-Xylene	ND	F1	14.2	ND	F1	mg/Kg	✱	77	78 - 130	16	23
o-Xylene	ND	F1	14.2	11.7		mg/Kg	✱	83	77 - 129	15	15
Toluene	ND	F2 F1	14.2	11.0	F2	mg/Kg	✱	77	77 - 131	17	14

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		75 - 129
4-Bromofluorobenzene (Surr)	108		76 - 122
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Lab Sample ID: 590-17564-1 DU

Matrix: Solid

Analysis Batch: 36199

Client Sample ID: FS-051922-01-2.0

Prep Type: Total/NA

Prep Batch: 36200

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	ND		ND		mg/Kg	✱	NC	25
Ethylbenzene	ND		ND		mg/Kg	✱	NC	25
m,p-Xylene	ND		ND		mg/Kg	✱	NC	23
o-Xylene	ND		ND		mg/Kg	✱	NC	25
Toluene	ND		ND		mg/Kg	✱	NC	25
Xylenes, Total	ND		ND		mg/Kg	✱	NC	25

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		75 - 129
4-Bromofluorobenzene (Surr)	99		76 - 122
Dibromofluoromethane (Surr)	103		80 - 120
Toluene-d8 (Surr)	102		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-36200/1-A

Matrix: Solid

Analysis Batch: 36198

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36200

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		05/20/22 10:00	05/20/22 11:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		41.5 - 162	05/20/22 10:00	05/20/22 11:13	1

Lab Sample ID: LCS 590-36200/3-A

Matrix: Solid

Analysis Batch: 36198

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36200

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline	50.2	48.6		mg/Kg		97	74.4 - 124

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QC Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

		LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	98		41.5 - 162								
Lab Sample ID: 590-17564-1 DU				Client Sample ID: FS-051922-01-2.0							
Matrix: Solid				Prep Type: Total/NA							
Analysis Batch: 36198				Prep Batch: 36200							
Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	Limit
Gasoline	250			276		mg/Kg	☼			10	32.3
		DU	DU								
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	99		41.5 - 162								

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 590-36205/1-A						Client Sample ID: Method Blank					
Matrix: Solid						Prep Type: Total/NA					
Analysis Batch: 36206						Prep Batch: 36205					
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
Diesel Range Organics (DRO) (C10-C25)	ND		10		mg/Kg		05/23/22 10:33	05/23/22 11:35	1		
Residual Range Organics (RRO) (C25-C36)	ND		25		mg/Kg		05/23/22 10:33	05/23/22 11:35	1		
		MB	MB								
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	92		50 - 150								
n-Triacontane-d62	96		50 - 150								

Lab Sample ID: LCS 590-36205/2-A						Client Sample ID: Lab Control Sample					
Matrix: Solid						Prep Type: Total/NA					
Analysis Batch: 36206						Prep Batch: 36205					
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits				
Diesel Range Organics (DRO) (C10-C25)	66.7	63.8		mg/Kg		96	50 - 150				
Residual Range Organics (RRO) (C25-C36)	66.7	77.1		mg/Kg		116	50 - 150				
		LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	95		50 - 150								
n-Triacontane-d62	89		50 - 150								

Lab Sample ID: 590-17564-1 DU						Client Sample ID: FS-051922-01-2.0					
Matrix: Solid						Prep Type: Total/NA					
Analysis Batch: 36206						Prep Batch: 36205					
Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit			
Diesel Range Organics (DRO) (C10-C25)	9600		9420		mg/Kg	⊛	2	40			
Residual Range Organics (RRO) (C25-C36)	ND		329		mg/Kg	⊛	5	40			

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QC Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 590-17564-1 DU

Matrix: Solid

Analysis Batch: 36206

Client Sample ID: FS-051922-01-2.0

Prep Type: Total/NA

Prep Batch: 36205

	<i>DU</i>	<i>DU</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>o-Terphenyl</i>	288	S1+	50 - 150
<i>n-Triacontane-d62</i>	90		50 - 150

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 590-36193/2-A

Matrix: Solid

Analysis Batch: 36214

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36193

<i>Analyte</i>	<i>MB</i>	<i>MB</i>								
	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil</i>	<i>Fac</i>
Lead	ND		3.0		mg/Kg		05/20/22 08:05	05/23/22 14:20		1

Lab Sample ID: LCS 590-36193/1-A

Matrix: Solid

Analysis Batch: 36214

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36193

<i>Analyte</i>		<i>Spike</i>	<i>LCS</i>	<i>LCS</i>				<i>%Rec</i>		
		<i>Added</i>	<i>Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>		
Lead		50.0	51.4		mg/Kg		103	80 - 120		

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-01-2.0

Lab Sample ID: 590-17564-1

Date Collected: 05/19/22 10:00

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Client Sample ID: FS-051922-01-2.0

Lab Sample ID: 590-17564-1

Date Collected: 05/19/22 10:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 76.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.403 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36199	05/20/22 12:18	JSP	TAL SPK
Total/NA	Prep	5035			6.403 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36198	05/20/22 12:18	JSP	TAL SPK
Total/NA	Prep	3550C			15.36 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		10			36206	05/23/22 12:34	NMI	TAL SPK
Total/NA	Prep	3050B			1.66 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 14:48	JSP	TAL SPK

Client Sample ID: FS-051922-02-3.0

Lab Sample ID: 590-17564-2

Date Collected: 05/19/22 10:15

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Client Sample ID: FS-051922-02-3.0

Lab Sample ID: 590-17564-2

Date Collected: 05/19/22 10:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 75.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.318 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		10	0.86 mL	43 mL	36199	05/20/22 13:01	JSP	TAL SPK
Total/NA	Prep	5035			5.318 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	36198	05/20/22 13:01	JSP	TAL SPK
Total/NA	Prep	3550C			15.04 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		10			36206	05/23/22 13:15	NMI	TAL SPK
Total/NA	Prep	3050B			1.50 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 14:52	JSP	TAL SPK

Client Sample ID: FS-051922-03-2.0

Lab Sample ID: 590-17564-3

Date Collected: 05/19/22 10:30

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-03-2.0

Lab Sample ID: 590-17564-3

Date Collected: 05/19/22 10:30

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 82.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.742 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36199	05/20/22 14:06	JSP	TAL SPK
Total/NA	Prep	5035			6.742 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36198	05/20/22 14:06	JSP	TAL SPK
Total/NA	Prep	3550C			15.86 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		5			36206	05/23/22 13:34	NMI	TAL SPK
Total/NA	Prep	3050B			1.47 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 15:08	JSP	TAL SPK

Client Sample ID: FS-051922-04-2.0

Lab Sample ID: 590-17564-4

Date Collected: 05/19/22 10:45

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Client Sample ID: FS-051922-04-2.0

Lab Sample ID: 590-17564-4

Date Collected: 05/19/22 10:45

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.124 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		10	0.86 mL	43 mL	36199	05/20/22 14:49	JSP	TAL SPK
Total/NA	Prep	5035			6.124 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	36198	05/20/22 14:49	JSP	TAL SPK
Total/NA	Prep	3550C			15.54 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		5			36206	05/23/22 13:54	NMI	TAL SPK
Total/NA	Prep	3050B			1.54 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 15:12	JSP	TAL SPK

Client Sample ID: FS-051922-05-2.0

Lab Sample ID: 590-17564-5

Date Collected: 05/19/22 11:00

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Client Sample ID: FS-051922-05-2.0

Lab Sample ID: 590-17564-5

Date Collected: 05/19/22 11:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 87.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.253 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36199	05/20/22 15:11	JSP	TAL SPK
Total/NA	Prep	5035			5.253 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36198	05/20/22 15:11	JSP	TAL SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-05-2.0

Lab Sample ID: 590-17564-5

Date Collected: 05/19/22 11:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 87.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			15.86 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		5			36206	05/23/22 14:12	NMI	TAL SPK
Total/NA	Prep	3050B			1.54 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 15:16	JSP	TAL SPK

Client Sample ID: FS-051922-06-2.0

Lab Sample ID: 590-17564-6

Date Collected: 05/19/22 11:15

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Client Sample ID: FS-051922-06-2.0

Lab Sample ID: 590-17564-6

Date Collected: 05/19/22 11:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 78.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.354 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36199	05/20/22 15:33	JSP	TAL SPK
Total/NA	Prep	5035			6.354 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36198	05/20/22 15:33	JSP	TAL SPK
Total/NA	Prep	3550C			15.66 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		5			36206	05/23/22 14:32	NMI	TAL SPK
Total/NA	Prep	3050B			1.75 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 15:20	JSP	TAL SPK

Client Sample ID: FS-051922-07-6.0

Lab Sample ID: 590-17564-7

Date Collected: 05/19/22 14:00

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Client Sample ID: FS-051922-07-6.0

Lab Sample ID: 590-17564-7

Date Collected: 05/19/22 14:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 78.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.808 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36199	05/20/22 15:54	JSP	TAL SPK
Total/NA	Prep	5035			5.808 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36198	05/20/22 15:54	JSP	TAL SPK
Total/NA	Prep	3550C			16.00 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			36206	05/23/22 14:50	NMI	TAL SPK
Total/NA	Prep	3050B			1.90 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 15:24	JSP	TAL SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-08-8.0

Lab Sample ID: 590-17564-8

Date Collected: 05/19/22 14:15

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:24	M1V	TAL SPK

Client Sample ID: FS-051922-08-8.0

Lab Sample ID: 590-17564-8

Date Collected: 05/19/22 14:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 70.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.378 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36199	05/20/22 16:15	JSP	TAL SPK
Total/NA	Prep	5035			5.378 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	36198	05/20/22 19:05	JSP	TAL SPK
Total/NA	Prep	3550C			15.45 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		10			36206	05/23/22 15:11	NMI	TAL SPK
Total/NA	Prep	3050B			2.03 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 15:28	JSP	TAL SPK

Laboratory References:

TAL SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Laboratory: Eurofins Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-06-23
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
6010D	Metals (ICP)	SW846	TAL SPK
Moisture	Percent Moisture	EPA	TAL SPK
3050B	Preparation, Metals	SW846	TAL SPK
3550C	Ultrasonic Extraction	SW846	TAL SPK
5035	Closed System Purge and Trap	SW846	TAL SPK

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Address. _____

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

[illegible]

Login Sample Receipt Checklist

Client: Fulcrum Environmental

Job Number: 590-17564-1

SDG Number:

Login Number: 17564

List Number: 1

Creator: Vaughan, Madison 1

List Source: Eurofins Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



APPENDIX D

Sampling and Analysis Plan/Quality Assurance Project Plan

Sampling and Analysis Plan & Quality Assurance Project Plan

**Four Star Supply, Inc.
355 NW State Street
Pullman, Washington**

Project Number: 223516.00

May 24, 2022

Prepared for:

Four Star Supply Inc.
Attn: Kevin McDonnell
355 NW State Street
Pullman, Washington 99163

Prepared by:

Travis Trent, CIH, PG
Fulcrum Environmental Consulting, Inc.
207 West Boone Avenue
Spokane, Washington 99201

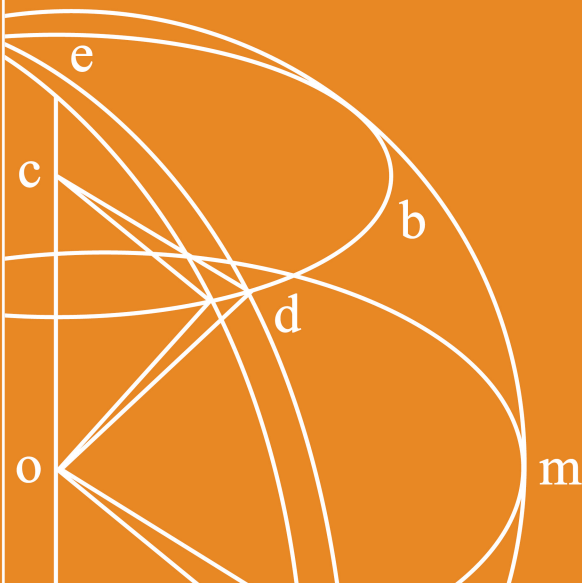




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1.0 Quality Objectives

The primary goal of this project is to accurately define magnitudes and extents of impact of petroleum hydrocarbons and other constituents in site soils to facilitate remedial design and implementation. To do this, samples collected must be representative of site soil conditions. Variations in the level of site soil impact and chemistry can occur due to natural environmental heterogeneity or historic site use patterns, 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 as described in Section 2.0.

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. Test America (Accreditation Number C593-22) and Libby Environmental (Accreditation Number C855-22), have been selected for laboratory analysis. Table 1 lists anticipated 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. Fremont's reporting limits shown in Table 1 are the practical quantitative limits (PQL) for the sample analyzed.

These MQOs are based on adequacy and completeness of field sampling and performance characteristics of measurements done by the project laboratory. Analytical and field quality control samples are discussed in Section 2.4.

Table 1: Laboratory Analyte MQOs for Soil Analysis

Analyte	Reporting Limit ¹	LCS ⁴ % Recovery Limits		Duplicate % RPD ⁵ Limits	MS ⁶ / MSD ⁷ % recovery limits	
<i>Petroleum Range Hydrocarbons²</i>						
Gasoline by NWTPH-Gx	5	65	135	30	65	135
Diesel by NWTPH-DxExt	50	77.7	127	30	64.2	137
Heavy Oil by NWTPH-DxExt	100	NA	NA	NA	NA	NA
<i>Volatile Organic Compounds by EPA Method 8260²</i>						
1,1,1,2-Tetrachloroethane	0.0063 ⁸	80	120	30	53.1	142
1,1,1-Trichloroethane	0.025	80	120	30	58.3	145



Analyte	Reporting Limit ¹	LCS ⁴ % Recovery Limits		Duplicate % RPD ⁵ Limits	MS ⁶ / MSD ⁷ % recovery limits	
1,1,2,2-Tetrachloroethane	0.015	80	120	30	51.9	131
1,1,2-Trichloroethane	0.017	80	120	30	51.6	137
1,1-Dichloroethane	0.025	80	120	30	51.8	141
1,1-Dichloroethene	0.1	80	120	30	47.3	147
1,1-Dichloropropene	0.025	80	120	30	55.1	138
1,2,3-Trichlorobenzene	0.05	80	120	30	54.4	124
1,2,3-Trichloropropane	0.013 ⁸	80	120	30	50.5	131
1,2,4-Trichlorobenzene	0.04	80	120	30	50.8	130
1,2,4-Trimethylbenzene	0.025	80	120	30	50.6	137
1,2-Dibromo-3-chloropropane	0.012 ⁸	80	120	30	40.5	131
1,2-Dibromoethane (EDB)	0.00049 ⁹	80	120	30	77.1	126
1,2-Dichlorobenzene	0.003	80	120	30	55.8	129
1,2-Dichloroethane (EDC)	0.023	80	120	30	76.5	124
1,2-Dichloropropane	0.02	80	120	30	59	136
1,3,5-Trimethylbenzene	0.025	80	120	30	51.8	136
1,3-Dichlorobenzene	0.035	80	120	30	52.6	131
1,3-Dichloropropane	0.02	80	120	30	53.1	134
1,4-Dichlorobenzene	0.03	80	120	30	52.9	129
2-Chlorotoluene	0.03	80	120	30	51.6	136
4-Chlorotoluene	0.03	80	120	30	50.1	139
4-Isopropyltoluene	0.03	80	120	30	52.9	134
Benzene	0.02	80	120	30	79.9	123
Bromobenzene	0.15	80	120	30	54.2	140
Bromodichloromethane	0.025	80	120	30	50.7	141
Bromoform	0.025	80	120	30	57.9	130
Bromomethane	0.071 ⁸	80	120	30	21.3	120
Carbon tetrachloride	0.005 ⁸	80	120	30	53.3	144
Chlorobenzene	0.025	80	120	30	60	133
Chlorodibromomethane	0.02	80	120	30	55.3	140
Chloroethane	0.12	80	120	30	31.9	123
Chloroform	0.025	80	120	30	53.2	129
Chloromethane	0.08	80	120	30	45	130
cis-1,2-Dichloroethene	0.025	80	120	30	58.6	136
cis-1,3-Dichloropropene	0.08	80	120	30	50.4	138
Cumene	0.03	80	120	30	58.9	138
Dibromomethane	0.02	80	120	30	50.6	137
Dichlorodifluoromethane	0.05	80	120	30	43.5	121
Ethylbenzene	0.025	80	120	30	79.9	129
Hexachlorobutadiene	0.05	80	120	30	40.6	158
m,p-Xylene	0.05	80	120	30	80.4	129
Methylene chloride	0.015	80	120	30	54.7	142
n-Butylbenzene	0.04	80	120	30	52.6	130
n-Propylbenzene	0.03	80	120	30	53.6	140
Naphthalene	0.1	80	120	30	54.8	157
o-Xylene	0.025	80	120	30	79.2	126



Analyte	Reporting Limit ¹	LCS ⁴ % Recovery Limits		Duplicate % RPD ⁵ Limits	MS ⁶ / MSD ⁷ % recovery limits	
sec-Butylbenzene	0.03	80	120	30	52.6	141
Styrene	0.025	80	120	30	51.1	132
tert-Butyl Methyl Ether (MTBE)	0.03	80	120	30	67.5	140
tert-Butylbenzene	0.03	80	120	30	50.5	135
Tetrachloroethene (PCE)	0.04	80	120	30	35.6	158
Toluene	0.03	80	120	30	83.6	119
trans-1,2-Dichloroethene	0.03	80	120	30	52	136
trans-1,3-Dichloropropene	0.05	80	120	30	44.1	147
Trichloroethene (TCE)	0.02	80	120	30	61.6	147
Trichlorofluoromethane	0.05	80	120	30	35	131
Vinyl chloride	0.002 ⁹	80	120	30	43.6	150
<i>Polyaromatic Hydrocarbons by EPA 8270³</i>						
1-Methylnaphthalene	20	63.4	117	30	34	120
2-Methylnaphthalene	20	61.2	118	30	36.3	115
Acenaphthene	20	58.5	113	30	31.4	113
Acenaphthylene	20	60	119	30	36.1	116
Anthracene	40	58	117	30	28.4	121
Benz(a)anthracene	20	62.2	120	30	29.7	123
Benzo(a)pyrene	20	63.6	130	30	29.4	133
Benzo(b)fluoranthene	20	54.8	119	30	20	125
Benzo(g,h,i)perylene	20	54	121	30	13.5	124
Benzo(k)fluoranthene	20	53.6	135	30	22.9	131
Chrysene	40	56.2	123	30	26.4	122
Dibenz(a,h)anthracene	40	59.3	120	30	14.8	130
Fluoranthene	40	60.5	120	30	32.5	120
Fluorene	20	60.9	120	30	32.3	121
Indeno(1,2,3-cd)pyrene	40	56.2	118	30	14.4	123
Naphthalene	20	62.6	118	30	4.67	152
Phenanthrene	40	58.4	117	30	33.5	115
Pyrene	40	59.3	118	30	31	118
<i>Metals by EPA 6020²</i>						
Arsenic	0.2	80	120	20	75	125
Barium	0.2	80	120	20	75	125
Cadmium	0.2	80	120	20	75	125
Chromium	0.2	80	120	20	75	125
Lead	0.2	80	120	20	75	125
Selenium	0.2	80	120	20	75	125
Silver	0.2	80	120	20	75	125
<i>Mercury by EPA 7471²</i>	0.25	80	120	20	70	130

¹ The analytical method provided units of measure apply to all analytes in that methodology.

² mg/Kg milligrams per kilogram

³ µg/Kg micrograms per kilogram

⁴ LCS Laboratory Control Standard

⁵ RPD Relative Percent Difference

⁶ Matrix Spike



7	Matrix Spike Duplicate
8	Method Detection Limit (MDL)
9	MDL using Selective Ion Monitoring (SIM)
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 Soil 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 remediation excavations will be obtained by direct collection from the remediation excavation where the excavation doesn't exceed 3-feet in depth, or from between the teeth of the excavator bucket where the remediation excavation exceeds 3-feet in depth.

Samples will be collected into pre-labeled, 4-ounce borosilicate sample jars and 40-milliliter vial samples preserved with methanol. 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 Northwest Total Petroleum Hydrocarbons-Gasoline (NWTPH-Gx) and EPA Method 8260 analysis will be collected using an impinger sampler to minimize loss of volatile organic compounds. Disposable, single-use impingers will be utilized to collect a measured soil sample of undisturbed soil. Following each sample collection, the sample will be immediately placed into a new methanol preserved 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.



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 a minimum of 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 for all samples submitted for laboratory analysis.

2.2 Sample Preparation for Various Analytical Methods

The following general procedures will be used during sample collection and preparation. Wear new disposable nitrile type gloves during sampling activities and discard used gloves between each sample. 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
Gasoline by NWTPH-Gx	Cool to 4° C	Two, 40-millimeter glass with septum lid	Preserve with 48-hours, Analyze within 14-days
Diesel by NWTPH-Dx	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
Polyaromatic Hydrocarbons by EPA 8270	Cool to 4° C	4 oz. glass jar with Teflon lined lid	Preserved within 14 days Analyze within 40 days
Total Metals by EPA Method 6020	Cool to 4° C	4 oz. glass jar with Teflon lined lid	Analyze within 180 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
Gasoline by NWTPH-Gx	20-25 + d	1/1	NA	None	None
Diesel by NWTPH-Dx	20-25 + d	2/2	NA	None	None
Volatile Organic Compounds by EPA Method 8260	20-25 + d	1/1	NA	None	None
Polyaromatic Hydrocarbons by EPA Method 8270	20-25 + d	2/2	NA	None	None
Metals (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium and Silver) by EPA Method 6020	20-25 + d	NA	1/1	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.

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 be 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.

Date – Remediation Area (SW, SB, BS) – Unique Sample Number. Depth of Sample



Table 4: Sample Coding

Date	Remediation Area	Consecutive Sample Number ¹	Depth of sample in feet bgs	Example
011722	Sump & Southwest (SW), Sandblast (SB), Building slab (BS)	1-20	.01, .02, .10, etc. bgs	011722- SW-01.01

¹ Assigned sequentially

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 paperwork 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 delivered to the laboratory by Fulcrum staff.
10. Use of separate coolers to protect more delicate sample containers, such as 40 milliliter vials, is encouraged.

Upon receipt of the sample 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 consumables 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 Sample Quality Control Requirements

3.1 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 field sampling activities at a rate of about 10%. 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 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.

3.2 Laboratory QA/QC Requirements

The selected project laboratory will be appropriately Ecology 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.



4.0 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 Tables 1 and 2.

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.

5.0 Audits and Reports

The project laboratories participate in performance and system audits of their routine procedures and are both accredited by the Washington State Department of Ecology for as of May 24, 2022. Results of the laboratory's performance and system audits of their routine procedures are available from the laboratory on request.

Fulcrum will provide in-progress reports for the project. A final project report will be prepared and issued at the conclusion of site remediation.

Draft versions of the report will be prepared and distributed to relevant project team members, including Ecology's site manager, prior to report finalization. Data will be completed in Ecology's Environmental Information Management (EIM) database as a component of report finalization.



6.0 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 above Tables 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 remediation area showing site features, soil sample locations, 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
- Significant or potentially significant findings
- Recommendations based on project goals if appropriate

7.0 Data Quality (Usability) Assessment

Applicable field and laboratory data will be entered into Ecology's EIM database once it has been reviewed and verified. Once all the data has been entered into EIM, the project manager will independently review project data for possible errors.

An EIM user study will be requested from Ecology's EIM coordinator for this project. All monitoring data will be available via the internet once the project data have been validated.



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.

Sediment Cleanup User's Manual II (SCUM II), *Guidance for Implementing the Cleanup Provisions of the Sediment Management Standards, Chapter 173-204 WAC*, Publication No. 12-09-057, March 2015, revised December 2017.

Standard Methods for the Examination of Water and Wastewater, 18th Edition, U.S. Environmental Protection Agency approved, prepared by the American Public Health Association, the American Water Works Association, and the Water Environment Federation.

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



APPENDIX E

Incident Waste Management and Disposal Plan

Incident Waste Management and Disposal Plan

(Four Star Supply Diesel Spill- Pullman)

Responsible Party:	<u>Four Star Supply, Inc.</u>
Spilled Material:	<u>Red Dye Diesel</u>
Spill Volume (estimate):	<u>Up to 785 gallons</u>
Spill Location:	<u>355 NW State St, Pullman, WA 99163</u>
Spill Date/Time:	<u>April 25, 2022 @ 0800</u>
Report Update Time:	<u>5/13/2022</u>

The Disposal Plan has been developed by the Environmental Unit in coordination with the Operations Section for incorporation into the Incident Action Plan. This plan may be amended as necessary to ensure compliance with all applicable laws and regulations, as new materials or waste streams are encountered, or alternative means of disposal are needed. Amendment may occur only upon mutual agreement of the responsible party, the Federal OSC (USCG/EPA), and/or the State OSC (Ecology/DEQ).

Submitted By: Fulcrum Environmental Consulting Inc. Date: 5/13/22

Approved by SOSC: _____ Date: _____

Reviewed by USCG/EPA: _____ Date: _____

Approved by Responsible Party: _____ Date: _____

Northwest Area Contingency Plan

9405. Disposal and Waste Management Guidance for the Northwest Area

Approved by other Local Government Representative(s):

_____ Date: _____

Approved by other Tribal Government Representative(s):

_____ Date: _____

SECTION I: ANTICIPATED RESPONSE TACTICS, WASTE STREAMS AND DESIGNATION OF SPILLED MATERIAL

Attached to this plan is a completed Waste Stream Analysis Form. This form is used to determine the waste streams that will be generated from the response tactics approved for the incident, and to

The spilled material was deemed (non-) dangerous waste based on the following:



Sampling will be/has been conducted. A separate sampling plan is being developed.



Safety Data Sheet attached

SECTION II: WASTE COLLECTION AND SEGREGATION

Waste will be collected and kept segregated to facilitate final disposal and for use in determining the volume spilled and recovered. The following measures will be taken:

Interim Waste Storage Areas have been established at these locations:

Name and Address	Waste Type	
Four Star Supply Inc. 355 NW State Street, Pullman, Washington 99163	Diesel contaminated soil	
Four Star Supply Inc. 355 NW State Street, Pullman, Washington 99163	Diesel contaminated water	
Four Star Supply Inc. 355 NW State Street, Pullman, Washington 99163	Non-stained Concrete	
Four Star Supply Inc. 355 NW State Street, Pullman, Washington 99163	Stained Concrete	
Four Star Supply Inc. 355 NW State Street, Pullman, Washington 99163	Diesel contaminated sorbent media	
Four Star Supply Inc. 355 NW State Street, Pullman, Washington 99163	Water and fuel mixture	



The Environmental Unit has evaluated the interim storage sites for potential existence of resources at risk and has considered the need for any required consultations or modifications.

The following conditions will be met at each site:

All contaminated and potential contaminated materials (soil, water, pads, stained concrete) will be stored in appropriate containers or over plastic sheeting supplemented with berms and plastic cover sheeting to ensure no contamination is transferred to the underlying interim storage areas.

These measures will be used to return the interim storage sites to their original condition at the end of the response:

Appropriate use of containers and plastic sheeting while interim storage is occurring for potentially contaminated materials.

B. INTERIM ON WATER STORAGE OF LIQUID MATERIALS

Describe skimmers and barges:

No barges or boats will be used. Sorbent pads and booms will be used to capture free product. Used sorbent pads, booms, and any associated water will be stored in plastic totes or 55-gallon barrels.

C. INTERIM SHORESIDE/NEARSHORE STORAGE OF LIQUID MATERIALS

Describe nearshore recovery operations for liquids and describe shoreside storage:

Sorbent pads and booms will be used to capture free product. Used sorbent pads, booms, and any associated water will be stored in plastic totes or 55-gallon barrels.

SECTION III DECANTING

Describe decanting operations, if applicable. Attach decanting authorization form (if approved).

Not applicable

SECTION IV WASHINGTON STATE OIL RECOVERY CREDIT FOR NATURAL RESOURCE DAMAGES

If the responsible party will seek credit for oil recovery under Washington State's Natural Resource Damage Assessment (RDA) process, additional segregation is required for product collected during the first 24 hours (non-persistent oils) or 48 hours after the oil release (persistent oils) (some conditions apply such as effectively contained and off of shoreline). Detailed guidance on the credit and segregation/measurement methods can be obtained from the Washington Department of Ecology document "Credit for Oil Recovery," and WAC 173-183

(WAC 173-183-870). Also see Washington Department of Ecology document “Compensation Schedule Credit for Oil Recovery, RDA Committee Resolution 96-1”.

☒ Check this box if the Responsible Party intends to seek Washington State recovery credit, and seek advice from an Ecology representative on how to proceed.

Segregation description here if using the state

Reference to wildlife plan for animal carcasses

SECTION VII: WASTE GENERATED DURING WILDLIFE OPERATIONS

A. Wildlife Collection and Rehabilitation

Oiled wildlife waste, such as oily PPE, towels, caging, and wash water generated from oiled wildlife response and rehabilitation activities are addressed in this plan.

The search, collection, and rehabilitation of oiled wildlife can be a lengthy process. Depending on the scope and scale of impacted wildlife, waste material from oiled wildlife collection and rehabilitation activities are likely to be generated several days, weeks, or even months after other oil spill response operations have ended.

Liquid Waste

Wildlife Rehabilitations operation currently anticipate the generation of (1) 21,000 gallon “Baker” or other water storage tanks of oily wash water that will need to be switched out every (unknown) days.

Solid Waste

Wildlife Rehabilitation operations currently anticipate the generation of up to (26) of 30 cubic yard sealed roll-off drop boxes that will require change out every (1 time event).

Biohazard Waste

Wildlife Rehabilitation operations currently do not anticipate encountering sharps onsite. Due to this anticipation a small 1-foot sharps container will be kept onsite in the unlikely event that sharps are encountered during rehabilitation operations. The sharps container is anticipated to be available during the planned rehabilitation operations and will be disposal of appropriately at the end of the project.

B. Wildlife Carcasses

No oiled carcasses can be disposed of until authorized by the Operations Section Wildlife Branch. The disposal of animal carcasses is coordinated through the Wildlife Branch in the Operations Section. Operations Staff should remove any dead oiled wildlife from the environment that they encounter during their normal cleanup operations and notify the Wildlife Branch. Any carcasses collected should be placed in a bag, separate from other debris, with a label identifying:

- The team leader of the operation that collected the carcass
- The time the carcass was collected
- The date the carcass was collected
- The location (GPS coordinates would be preferred) of collection if possible.

Notify the Wildlife Branch of carcasses that are collected.

If carcasses cannot be collected due to time and/or safety considerations their locations and numbers should be recorded so that they can be tallied and reported to the Wildlife Branch.

SECTION VIII: WASTE TREATMENT AND FINAL DISPOSAL

Non-stained concrete waste to be disposed of at
Atlas Sand and Rock in Pullman, Washington

Stained concrete waste will be disposed of at
Graham Road Landfill in Medical Lake, Washington

Petroleum contaminated sorbent media waste will be disposed of at
Graham Road Landfill in Medical Lake, Washington

Non-Hazardous contaminated soil waste will be disposed of by
Roach Construction Land Farm in Genesee, Idaho

Water and fuel mixture waste will be treated and recycled by
Orrco Oil Re-refinery in Tri-cities, Washington

Waste to be reused will be treated and disposed of by:
NA

Waste to be incinerated will be treated and disposed of by:
NA

Wildlife waste will be treated and disposed of by:
NA

Northwest Area Contingency Plan

9405. Disposal and Waste Management Guidance for the Northwest Area

Biohazard Waste will be collected and segregated by:

NA

SECTION XI: WASTE MANAGERS, HANDLERS AND PERMITS

The following positions will be assigned to manage the generation, storage and disposal of waste for this response:

- **Disposal Group Supervisor**
- **Technical Specialists**

The following response contractors, licensed transporters, approved treatment and disposal facilities are to be used for waste handling and disposition unless otherwise directed by Incident Command.

Name of Company	Disposal Function	Company Representative (Name, Phone #)
Able Cleanup Technologies	Onsite collection and transport	Jason Moline, 509-991-9422
Waste Management, Graham Road Facility	CERCLA and Industrial & Special Waste	Fred Downs, 509-309-6850
Atlas Sand and Gravel	Concrete Recycling	509-872-3515
Roach Construction	Non-Hazardous Contaminated Soil	208-285-1411
Orroc Oil Re-refining	Water and oil mixture	503-286-8352



Permits for this response are being tracked in a separate document by the Environmental Unit.



The Liaison Officer and the Joint Information Center have been briefed on this plan and provided information in order to respond to questions from the public.

SECTION X: WASTE TRACKING FORMS

All waste oils, regardless of type, must be managed by a complete set of records. These records should show the following:

- ⌚ where the waste was recovered,
- ⌚ the type of waste,
 - approximate volume,
 - date collected,
 - date transported to staging or disposal site,
 - date received at temporary storage area or disposal site,
 - the number of containers shipped,
 - the number of containers received,
 - the date, location and method of final disposal.

Include copies of waste tracking forms and waste profiles used for final disposal, (See Attachment A for example). Also, include copies of receipts from disposal facilities.

WASTE MANAGEMENT TRACKING FORM FOR INCIDENT: _____

Update Time:

[illegible]

* Cubic Yards for Solids

** Means to address demand per location per time.

INTERIM STORAGE TRACKING

[illegible]

* Cubic Yards for Solids.

FINAL DISPOSAL

[illegible]

* Cubic Yards for Solids.



APPENDIX F

Permitting and Plans



HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: May 24, 2022
Project End Date: May 21, 2027

Permit Number: 2022-1-46+01
FPA/Public Notice Number: N/A
Application ID: 28511

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
Four Star Supply Inc. ATTENTION: Kevin McDonnell 355 NW State Street Pullman, WA 99163	Fulcrum Environmental ATTENTION: Travis Trent 207 West Boone Avenue Spokane, WA 99201

Project Name: Four Star Diesel Cleanup Bank Removal

Project Description: Diesel from a storage tank leaked into the soil near South Fork Palouse River. The bank will need to be removed in order to contain the diesel. Fill will be added to rebuild the bank after contaminated soil is removed.

PROVISIONS

1. TIMING LIMITATION: Emergency work is authorized to begin immediately and shall be completed by September 1, 2022.
2. INVASIVE SPECIES CONTROL: Follow Method 1 for low risk locations (i.e. clean/drain/dry). Thoroughly remove visible dirt and debris from all equipment and gear (including drive mechanisms, wheels, tires, tracks, buckets, and undercarriage) before arriving and leaving the job site to prevent the transport and introduction of invasive species. For contaminated or high risk sites please refer to the Method 2 Decontamination protocol. Properly dispose of any water and chemicals used to clean gear and equipment. You can find this and additional information in the Washington Department of Fish and Wildlife's "Invasive Species Management Protocols", available online at <https://wdfw.wa.gov/species-habitats/invasive/prevention>.
3. FISH KILL/ WATER QUALITY PROBLEM NOTIFICATION: If at any time, as a result of oil spill response activities, fish are observed in distress, a fish kill occurs, or water quality problems develop immediately notify the WDFW Oil Spill Team 24-hour pager at (360) 534-8233.
4. This permit authorizes bank removal and subsequent installation of bank protection materials in response to emergency conditions.
5. Use existing roadways or travel paths to conduct work when possible.
6. Limit the removal of native bankline vegetation to the minimum amount needed to construct the project.
7. Limit the use of equipment waterward of the ordinary high water line to that necessary to gain position for the work.
8. Check equipment for leaks and complete any required repairs in an upland location before using the equipment in or near the water.
9. Erosion control methods, such as silt fencing, shall be used to prevent over-burden material from entering the channel and silt-laden water from entering the stream.



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10. The length of the bank removal and restabilization must not exceed 40 feet.
11. Install the toe to protect the integrity of bank protection material.
12. Use clean angular rock to construct the bank protection.
13. Reslope the banks equal to or less than the original vertical and horizontal slope.
14. Upon completion of the project, removal all materials or equipment from the site and dispose of all excess spoils and waste materials in an upland area above the limits of anticipated floodwater.
15. Emergency response measures installed that do not meet current WAC standards must be removed and the site restored within 90 days, unless an alternative mitigation plan is approved by the Department. NOTE: Removal and restoration must be done in compliance with WAC and HPA for work must be obtained.
16. Within 60 days, the applicant must arrange an onsite meeting with the Department to determine if emergency response measures must be removed and if there are remaining impacts to be mitigated.
17. In compliance with WAC, within 90 days of completion of work, all remaining impacts must be mitigated or an approved mitigation plan must be submitted to the Department for approval (WAC 220-660-050 (4) (e)).
18. All work contained in the mitigation plan must be completed in accordance with timelines identified in the approved mitigation plan.
19. WDFW Habitat Biologist must be notified when work authorized under this permit has been completed.

LOCATION #1:	355 NW State Street, Pullman, WA 99163					
WORK START:	May 24, 2022			WORK END:	May 19, 2027	
<u>WRIA</u>		<u>Waterbody:</u>			<u>Tributary to:</u>	
34 - Palouse		Palouse River South Fork			Palouse River	
<u>1/4 SEC:</u>	<u>Section:</u>	<u>Township:</u>	<u>Range:</u>	<u>Latitude:</u>	<u>Longitude:</u>	<u>County:</u>
	05	14 N	45 E	46.73326	-117.17977	Whitman
<u>Location #1 Driving Directions</u>						

APPLY TO ALL HYDRAULIC PROJECT APPROVALS



HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: May 24, 2022

Project End Date: May 21, 2027

Permit Number: 2022-1-46+01

FPA/Public Notice Number: N/A

Application ID: 28511

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW. Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in civil action against you, including, but not limited to, a stop work order or notice to comply, and/or a gross misdemeanor criminal charge, possibly punishable by fine and/or imprisonment.

All Hydraulic Project Approvals issued under RCW 77.55.021 are subject to additional restrictions, conditions, or revocation if the Department of Fish and Wildlife determines that changed conditions require such action. The person(s) to whom this Hydraulic Project Approval is issued has the right to appeal those decisions. Procedures for filing appeals are listed below.

MINOR MODIFICATIONS TO THIS HPA: You may request approval of minor modifications to the required work timing or to the plans and specifications approved in this HPA unless this is a General HPA. If this is a General HPA you must use the Major Modification process described below. Any approved minor modification will require issuance of a letter documenting the approval. A minor modification to the required work timing means any change to the work start or end dates of the current work season to enable project or work phase completion. Minor modifications will be approved only if spawning or incubating fish are not present within the vicinity of the project. You may request subsequent minor modifications to the required work timing. A minor modification of the plans and specifications means any changes in the materials, characteristics or construction of your project that does not alter the project's impact to fish life or habitat and does not require a change in the provisions of the HPA to mitigate the impacts of the modification. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a minor modification through APPS. A link to APPS is at <http://wdfw.wa.gov/licensing/hpa/>. If you did not use APPS you must submit a written request that clearly indicates you are seeking a minor modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234, or by email to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.



HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

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Project End Date: May 21, 2027

Permit Number: 2022-1-46+01
FPA/Public Notice Number: N/A
Application ID: 28511

MAJOR MODIFICATIONS TO THIS HPA: You may request approval of major modifications to any aspect of your HPA. Any approved change other than a minor modification to your HPA will require issuance of a new HPA. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a major modification through APPS. A link to APPS is at <http://wdfw.wa.gov/licensing/hpa/>. If you did not use APPS you must submit a written request that clearly indicates you are requesting a major modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send your written request by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234. You may email your request for a major modification to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

APPEALS INFORMATION

If you wish to appeal the issuance, denial, conditioning, or modification of a Hydraulic Project Approval (HPA), Washington Department of Fish and Wildlife (WDFW) recommends that you first contact the department employee who issued or denied the HPA to discuss your concerns. Such a discussion may resolve your concerns without the need for further appeal action. If you proceed with an appeal, you may request an informal or formal appeal. WDFW encourages you to take advantage of the informal appeal process before initiating a formal appeal. The informal appeal process includes a review by department management of the HPA or denial and often resolves issues faster and with less legal complexity than the formal appeal process. If the informal appeal process does not resolve your concerns, you may advance your appeal to the formal process. You may contact the HPA Appeals Coordinator at (360) 902-2534 for more information.

A. INFORMAL APPEALS: WAC 220-660-460 is the rule describing how to request an informal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete informal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request an informal appeal of that action. You must send your request to WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. WDFW must receive your request within 30 days from the date you receive notice of the decision. If you agree, and you applied for the HPA, resolution of the appeal may be facilitated through an informal conference with the WDFW employee responsible for the decision and a supervisor. If a resolution is not reached through the informal conference, or you are not the person who applied for the HPA, the HPA Appeals Coordinator or designee may conduct an informal hearing or review and recommend a decision to the Director or designee. If you are not satisfied with the results of the informal appeal, you may file a request for a formal appeal.

B. FORMAL APPEALS: WAC 220-660-470 is the rule describing how to request a formal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete formal appeal procedures. The following information summarizes that rule.



HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: May 24, 2022
Project End Date: May 21, 2027

Permit Number: 2022-1-46+01
FPA/Public Notice Number: N/A
Application ID: 28511

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request a formal appeal of that action. You must send your request for a formal appeal to the clerk of the Pollution Control Hearings Boards and serve a copy on WDFW within 30 days from the date you receive notice of the decision. You may serve WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, you may request a formal appeal within 30 days from the date you receive the Director's or designee's written decision in response to the informal appeal.

C. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS: If there is no timely request for an appeal, the WDFW action shall be final and unappealable.

Habitat Biologist	melissa.mackelvie@dfw.wa.gov
Melissa Mackelvie	509-892-1001, Ext:309

A handwritten signature in black ink, appearing to read "Melissa Mackelvie".

for Director
WDFW

U.S. Army Corps of Engineers (USACE)
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
 33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved -
OMB No. 0710-0003
Expires: 01-08-2018

The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <http://dpcl.dod.mil/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx>

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
--------------------	----------------------	------------------	------------------------------

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME First - Travis Middle - L Last - Trent Company - Fulcrum Environmental Consulting Inc E-mail Address - ttrent@efulcrum.net	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Middle - Last - Company - E-mail Address -
6. APPLICANT'S ADDRESS: Address- 207 West Boone Ave City - Spokane State - WA Zip - 99201 Country - USA	9. AGENT'S ADDRESS: Address- City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax 509.993.4739 509.459.9220	10. AGENTS PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Kevin McDonnell to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.


 SIGNATURE OF APPLICANT

5/10/2022
 DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) Pullman Diesel Spill	
13. NAME OF WATERBODY, IF KNOWN (if applicable) Palouse River	14. PROJECT STREET ADDRESS (if applicable) Address 355 NW State Street City - Pullman State - WA Zip - 99163
15. LOCATION OF PROJECT Latitude: °N 46.73251 Longitude: °W 114.18119	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID Municipality Section - Township - Range -	

17. DIRECTIONS TO THE SITE

355 NW State Street, Pullman, WA 99163

18. Nature of Activity (Description of project, include all features)

Removal of approximately 800 cubic yards of contaminated soil, directly adjacent to the Palouse River. This work has the potential to impact (remove and replace) the bank of the river

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Approximately 700 gallons of red dye diesel leaked from an above ground storage tank. The diesel is making its way through the soil and is leaching into the south fork of the Palouse River. The response team has decided that the best plan of action is to remove the contaminated soil, replace with clean fill material, and restore the immediate habitat

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	Type	Type
Amount in Cubic Yards	Amount in Cubic Yards	Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres
or
Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list)

a. Address-

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
WSDFW	Emergency Permit				
Pullman City	Emergency Permit not required				

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.



5/10/22

SIGNATURE OF APPLICANT

DATE

SIGNATURE OF AGENT

DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

CITY OF PULLMAN PERMIT APPLICATION

SITE ADDRESS: _____

LOT: _____ **BLOCK:** _____ **SUBDIVISION:** _____

DOES THIS PROPERTY INCLUDE RESIDENTIAL UNITS: ☐ No ☐ Yes **HOW MANY:** _____

APPLICANT: _____

CONTRACTOR: _____

Address: _____

Address: _____

Phone: _____

Phone: _____

Email: _____

Email: _____

PROPERTY OWNER: (if different) _____

License #: _____

Address: _____

PROJECT CONTACT: (if different) _____

Phone: _____

Phone: _____

Email: _____

Email: _____

DESCRIPTION OF WORK: _____

ESTIMATED VALUATION OF WORK: _____ (Building Inspector determines final valuation for permit calculations.)

STORMWATER

Required for $\geq 5,000$ ft² disturbance, or construction of single family home or larger.

PROPOSED START DATE _____ **PROPOSED END DATE** _____

TOTAL AREA OF DISTURBANCE _____ ft²

WATER / SEWER SERVICE

It is understood that the charges for certain water (>1-in)/sewer connections are only a deposit, and the applicant/property owner/contractor is responsible for actual costs to be billed after work is completed. Any deposits collected for water/sewer service are non-refundable and are not reflective of actual costs, which include time, materials, and equipment.

The ☐ applicant ☐ property owner ☐ contractor agrees to pay all fees and usage charges for service provided by the City resulting from this application.

Initials _____ **Printed Name** _____ **Title** _____

If the person responsible for fees and usage charges for services provided by the City of Pullman changes, an updated form will need to be submitted to the City of Pullman.

PERMIT TYPE(S)

Please indicate the permit type(s). *Pullman City Code references are provided.* <http://www.pullman-wa.gov/city-code>

☐ Building Permit (Chapter 2.15, 17)

☐ Grading Permit (Chapter 2.15)

☐ Demolition Permit (Chapter 2.15)

☐ Plumbing Permit (Chapter 2.20)

☐ Mechanical Permit (Chapter 2.25, 2.30)

☐ Sign Permit (Chapter 17.50)

☐ Stormwater Control Regulations (Chapter 10.32)

(Additional applicable permit types may be selected by staff)

I HEREBY CERTIFY THAT I HAVE READ AND UNDERSTAND THIS PERMIT(S). ALL LAWS AND ORDINANCES GOVERNING THIS TYPE OF WORK WILL BE COMPLIED WITH, WHETHER SPECIFIED HEREIN OR NOT. GRANTING THIS PERMIT(S) DOES NOT GIVE AUTHORITY TO VIOLATE OR CANCEL ANY STATE OR LOCAL LAW REGULATING CONSTRUCTION. I AGREE TO COMPLY WITH ALL REQUIREMENTS OF THIS PERMIT(S).

Signature of Owner / Authorized Agent _____ **Date** _____

Printed Name _____

RECEIPT NO.: _____

DATE APPLICATION RECEIVED: _____

DATE APPLICATION ACCEPTED AS COMPLETE: _____

CITY OF PULLMAN, 190 SE CRESTVIEW ST., BLDG. A, PULLMAN, WA 99163 (509) 338-3220

SHORELINE MASTER PROGRAM APPLICATION

- ☐ SHORELINE SUBSTANTIAL DEVELOPMENT PERMIT (\$150 fee)
☐ SHORELINE CONDITIONAL USE PERMIT (\$250 fee)
☐ SHORELINE VARIANCE (\$250 fee)
☐ SHORELINE EXEMPTION (no fee)

This is an application for a substantial development, conditional use, variance, or exemption as authorized by the Shoreline Management Act of 1971 and the Pullman Shoreline Master Program. Applicants are advised to check with appropriate local, state, or federal officials to determine whether your project demands any other permits or approvals. All of the following information is required for a complete application.

- 1) Name of Applicant _____
2) Mailing Address _____
3) Telephone number _____
4) Email address _____

___ Initial here if you will accept email correspondence in lieu of hardcopy mail.

- 5) Relation of applicant to property:
☐ Owner ☐ Purchaser ☐ Lessee ☐ Other _____

- 6) Name, address, and telephone number of owner, if other than applicant:

If the applicant is not the property owner, written consent must be submitted by the owner granting the applicant permission to act as his/her agent.

- 7) Location of proposed project (address and quarter section, township, range):
355 NW State Street Pullman, WA 99163
- 8) Name of water area within or near the boundary of the proposed development:
Palouse River
- 9) General description of the proposed project that includes the proposed use or uses and the activities necessary to accomplish the project:
Removal of approximately 800 cubic yards of contaminated soil, directly adjacent to the Palouse River. This work has the potential to impact (remove and replace) the bank of the river. The response team has decided that the best plan of action is to remove the contaminated soil, replace with clean fill material, and restore the immediate habitat

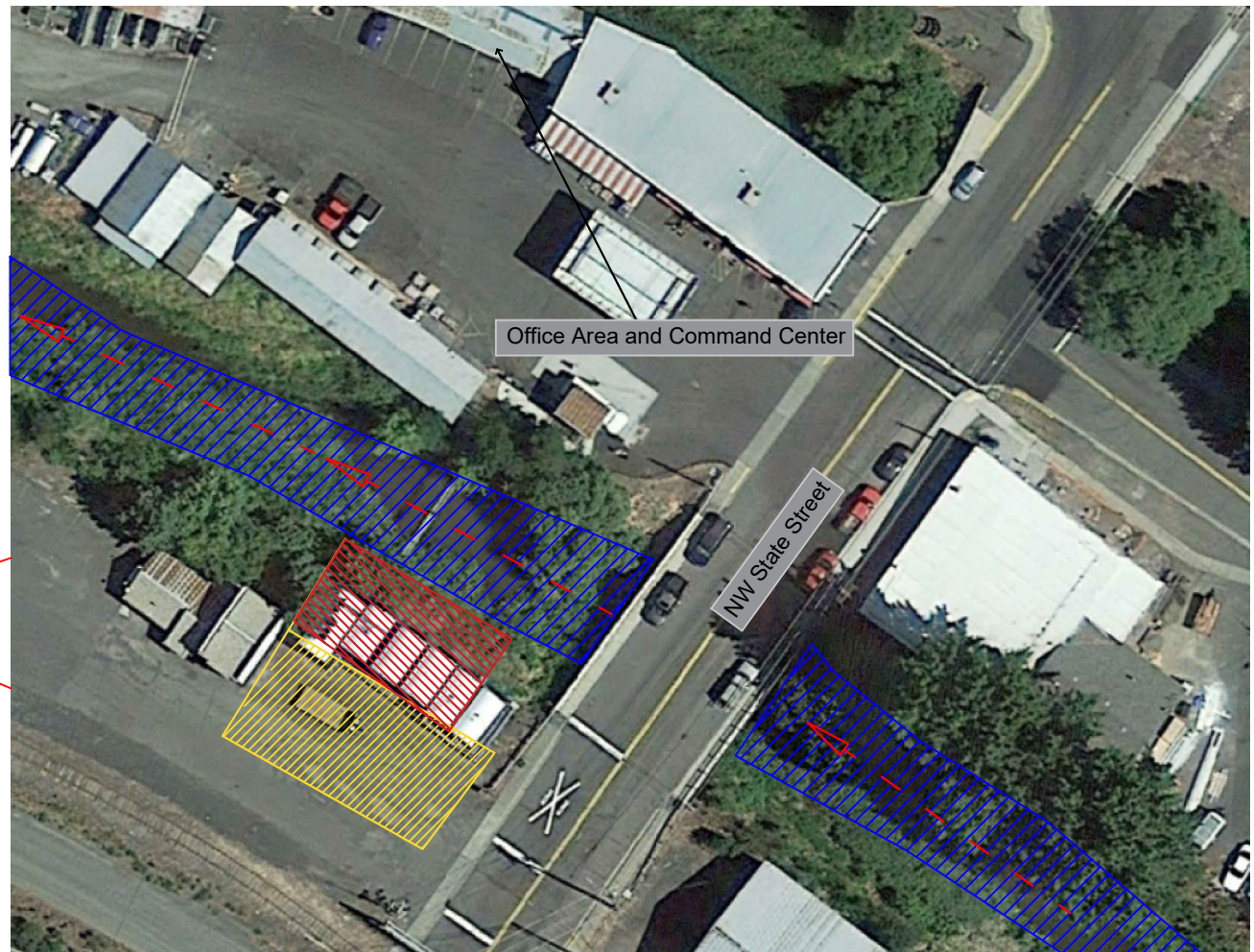
- 10) General description of the property as it now exists including its physical characteristics and improvements and structures:
The fuel spill location occurred in the bulk fuel storage facility located on the south side of the Four Star Supply Inc. property, south of the South fork Palouse River. The Bulk fuel storage is located at the top of the stream embankment.
-
- 11) General description of the vicinity of the proposed project including identification of the adjacent uses, structures and improvements, intensity of development, and physical characteristics:
The remedial work area is identified as the former NW portion of the now removed tank farm and the associated riverbank and riverslope.
-
- 12) **PROJECT DRAWINGS:** Provide a site development plan consisting of maps and elevation drawings, drawn to an appropriate scale to depict clearly all required information, photographs, and text which shall include:
- a) The boundary of the parcel(s) of land upon which the development is proposed.
 - b) The ordinary high water mark of all water bodies located adjacent to or within the boundary of the project. This may be an approximate location provided that, for any development where a determination of consistency with the applicable regulations requires a precise location of the ordinary high water mark, the mark shall be located precisely and the biological and hydrological basis for the location as indicated on the plans shall be included in the development plan. Where the ordinary high water mark is neither adjacent to or within the boundary of the project, the plan shall indicate the distance and direction to the nearest ordinary high water mark of a shoreline.
 - c) Existing and proposed land contours. The contours shall be at intervals sufficient to accurately determine the existing character of the property and the extent of proposed change to the land that is necessary for the development. Areas within the boundary that will not be altered by the development may be indicated as such and contours approximated for that area.
 - d) A delineation of all wetland areas that will be altered or used as a part of the development.
 - e) A general indication of the character of vegetation found on the site.
 - f) The dimensions and locations of all existing and proposed structures and improvements, including but not limited to: buildings, paved or graveled areas, roads, utilities, septic tanks and drainfields, material stockpiles or surcharge, and stormwater management facilities.
 - g) Where applicable, a landscaping plan for the project.
 - h) Where applicable, plans for development of areas on or off the site as mitigation for impacts associated with the proposed project that contain information consistent with pertinent shoreline requirements.
 - i) Quantity, source, and composition of any fill material that is placed on the site whether temporary or permanent.
 - j) Quantity, composition, and destination of any excavated or dredged material.
 - k) A vicinity map showing the relationship of the property and proposed development or use to roads, utilities, existing developments, and uses on adjacent properties.
 - l) Where applicable, a depiction of the impacts to views from existing residential uses and public areas.
 - m) On all variance applications, the plans shall clearly indicate where development could occur without approval of a variance, the physical features and circumstances on the property that provide a basis for the request, and the location of adjacent structures and uses.

All information provided in this application is said to be true under penalty of perjury by the laws of the State of Washington.





Signature _____

Date _____

NWS-2022-390
 13 May 2022
 46.7327, -117.1817
 1 of 3



LEGEND

-  Flow direction
-  South Fork Palouse River
-  Approximate excavation area
-  Staging and storage area

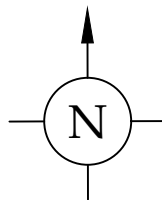
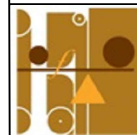


Figure 1: Four Star Supply Site Vicinity Map

355 Northwest State Street
 Pullman, Washington 99163



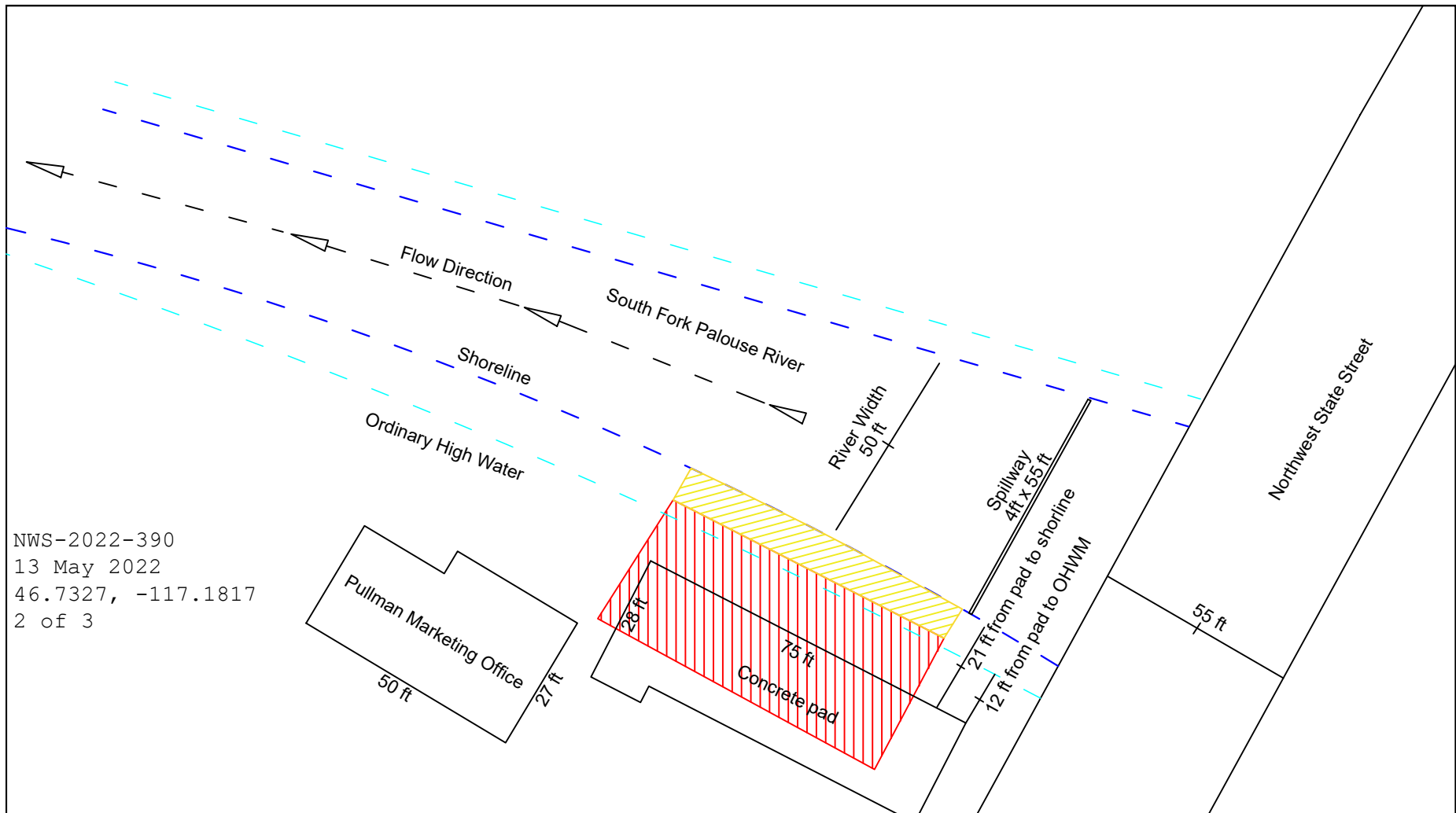
FULCRUM ENVIRONMENTAL CONSULTING, INC.
 207 W. BOONE AVENUE
 SPOKANE, WASHINGTON 99201
 (509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken

PROJECT NUMBER: 223516.00

DATE: May 12, 2022

REVIEWED BY: Scott Groat



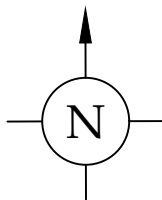
LEGEND



Potential area of planned excavation.
Estimated 800 cubic yards planned
for removal.



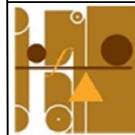
Phase two shoreline excavation area



Approximate Scale In Feet

Figure 2: Plan View of Fuel Release Area

355 Northwest State Street
Pullman, Washington 99163



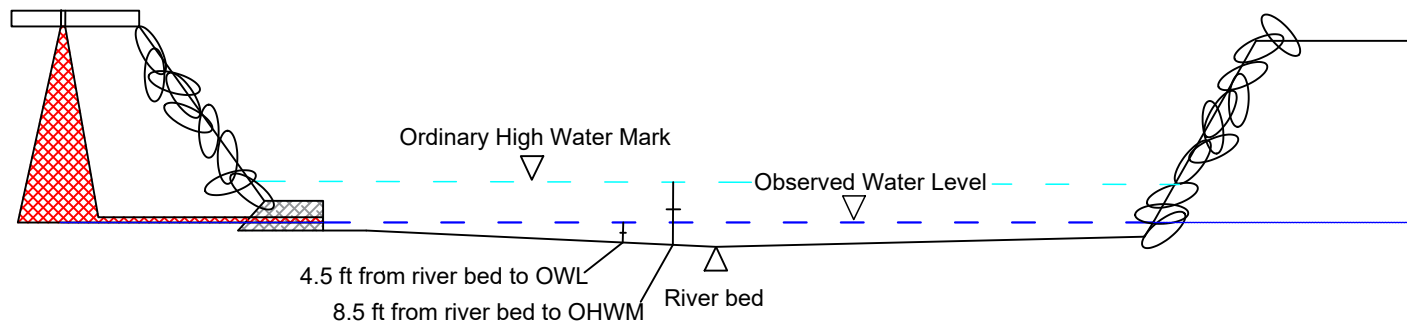
FULCRUM ENVIRONMENTAL CONSULTING, INC.
207 W. BOONE AVENUE
SPOKANE, WASHINGTON 99201
(509) 459-9220 www.efulcrum.net

MAP BY: Ethan Ducken

DATE: May 12, 2022






PROJECT NUMBER: 223516.00

REVIEWED BY: Scott Groat



NWS-2022-390
 13 May 2022
 46.7327, -117.1817
 3 of 3

LEGEND

-  Concrete pad
-  Basalt riprap
-  Native soils
-  Anticipated diesel impact area
-  Approximate groundwater elevation

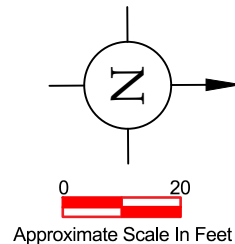
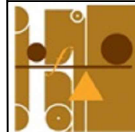


Figure 3: Section View of Fuel Release Area

355 Northwest State Street
 Pullman, Washington 99163



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 SPOKANE, WASHINGTON 99201
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MAP BY: Ethan Ducken

DATE: May 12, 2022

PROJECT NUMBER: 223516.00

REVIEWED BY: Scott Groat

CITY OF PULLMAN
FLOODPLAIN/FLOODWAY DEVELOPMENT PERMIT

APPLICANT Kevin McDonnell PHONE (509) 332-2511
MAILING ADDRESS 355 NW State Street Pullman, WA 99163
EMAIL ADDRESS kmcdonnell@fourstarsupplyinc.com
PROPERTY LOCATION 355 NW State Street Pullman, WA 99163

PROPERTY LEGAL DESCRIPTION Coordinates: Latitude – 46.73251 Longitude – 114.181119

FLOOD INFORMATION:

Flood Insurance Rate Map Number: Panel number 530212 0001 C
Flood Zone: A9; Base Flood Elevation: 2336.8, NGVD;
Lowest Elevation of Site: Existing 2336, NGVD; Proposed _____, NGVD
Proposed Construction is Located in: ☐ Floodway ☒ Floodplain
Proposed Use: ☐ Residential ☐ Mobile Home ☒ Commercial ☐ Storage
☒ Industrial ☐ Other _____
Proposed elevation of lowest floor, including basement or cellar: _____, NGVD
Flood proofing measures (if lowest floor is below the base flood elevation):
Contaminated soil was removed from the area of impact and then backfilled with clean soil to the initial grade.

All information provided in this application is said to be true under penalty of perjury by the laws of the State of Washington.

Applicant's Signature  Date 2/28/2023

I certify that, to the best of my knowledge, the construction authorized by this permit is in compliance with Chapter 17.100 of the Pullman City Code regulating development within a floodplain or floodway.

Public Works Director _____ Date _____

Actual elevation of lowest floor, including basement or cellar: _____, NGVD

Flood proofed elevation: _____, NGVD [Attached professional certification pursuant to P.C.C. 17.100.050(4)(f)]

PERMIT FEE*: \$35.00

PERMIT NO.: _____

PERMIT DATE: _____

* Permit fee is not due until the permit has been reviewed and approved; please do not submit payment at the time of application.

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the [SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS \(part D\)](#). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [\[HELP\]](#)

1. Name of proposed project, if applicable:

Four Star Supply Inc.

2. Name of applicant:

Kevin McDonnell

3. Address and phone number of applicant and contact person:

355 NW State Street
Pullman, WA 99163
509.332.2511
Kevin McDonnell
kmcdonnell@fourstarsupplyinc.com

or

Fulcrum Environmental Consulting Inc.
207 West Boone Ave.
Spokane, WA 99205
509.459.9220
Travis Trent or Scott Groat

4. Date checklist prepared:

10/31/2022

5. Agency requesting checklist:

City of Pullman

6. Proposed timing or schedule (including phasing, if applicable):

Spill response initiated in May of 2022. Removal of diesel contaminated soil June through September of 2022. Monitoring well installation anticipated to occur Spring 2023.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Installation of ground water monitoring wells anticipated in Spring of 2023.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Four Star Fuel Spill Health and Safety Plan
Four Star Fuel Release Soil Remediation Work Plan
Four Star Fuel Release Sample and Analysis Plan & Quality Assurance Project Plan

Four Star Fuel Spill Remedial Oversight Report (in progress)

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None

10. List any government approvals or permits that will be needed for your proposal, if known.

*Army Corp of Engineers Permit
Department of Fish and Wildlife Permit
City of Pullman Hydraulic Permit, Shoreline Permit, and Grading Permit*

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The site is located at Four Star Supply Inc. 355 NW State Street in Pullman, Washington. A Diesel spill from onsite fuel storage tanks was identified in April of 2022 resulting in diesel impact to underlying soils. The Washington State Department of Ecology was notified and a spill response was initiated. As part of the spill response, all above ground storage tanks at the site were emptied and removed, the concrete basin secondary containment was removed and the fuel line over the river was removed. All soil impacted by the release was removed except for a small area underlying the edge of the river. This location was left in place to minimize adverse impact to the river. It was capped with clay and monitored to confirm efficacy. Following completion of the spill response, additional soil excavation was conducted at the site to address pre-existing contaminated soil. All contaminated soil was removed from the site to the extent possible without risking impact to adjacent buildings, roads, the river or the bridge. Groundwater wells will be installed in the Spring of 2023 and the site will be monitored in accordance with State guidelines.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

Street Address: 355 NW State Street, Pullman, Washington 99163
Coordinates: Latitude – 46.73251 Longitude – 114.181119

The site is located immediately south west of the South Fork Palouse River Bridge, west of NW State Street, and north of Poplar Street in Pullman, WA

B. Environmental Elements [\[HELP\]](#)

1. **Earth** [\[help\]](#)

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other

Flat with steep slope at the northern boundary.

b. What is the steepest slope on the site (approximate percent slope)?

Approximate 50% slope

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Non-native gravels (basalt cobbles and boulders).

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No indications for unstable soils were identified onsite.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

A total of (4,246) loose cubic yards (lcy) of contaminated soil was removed from the site. The removed soil was replaced with like material and returned to original grade and configuration. Fill material was local sourced from Roach Construction in Genesee, Idaho and Atlas Sand & Rock in Pullman, Washington

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion could occur with the proximity to the river, and the reconstruction of the stream bank.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The site will be covered with gravel parking area. The city of Pullman views gravel as an impervious surface.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

The streambank was reconstructed per pre-impact condition with basalt cobbles and boulder used to armor the bank.

2. Air [\[help\]](#)

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

None

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None.

- c. Proposed measures to reduce or control emissions or other impacts to air, if any:

None.

3. Water [\[help\]](#)

- a. Surface Water: [\[help\]](#)

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The South Fork Palouse River is present at the North boundary of the site.

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

All work occurred within 200-feet of the South Fork Palouse River. The remediation occurred under the review, direction, and oversight of Ecology, Fish and Wildlife, and the Army Corp of Engineers. Work was designed and implemented in a manner protective of the river. Sorbant booms and a floating turbidity curtain were placed in the river as further protection during the work. Known impact was limited to minor petroleum hydrocarbon impact to waters immediately adjacent to the river bank with no known release beyond the sorbent booms.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Twenty cubic yards of clay was installed and compacted along the riverbank to cap contaminated soils present in the streambank. This work was conducted under permit from the Army Corp of Engineers and Fish and Wildlife.

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

None

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

According to The FEMA FIRM Flood Insurance Rate Map for the City of Pullman Washington Panel number 530212 0001 C The proposed project site is located in Zone A9 identified as an Area of 100-year flood; base flood elevations and flood hazard not determined.

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No

b. Ground Water: [\[help\]](#)

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No groundwater was withdrawn and no water was discharged to the site as part of the project.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

None

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

None

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

Petroleum contamination impacted the river as a result of the spill. The response effort was effective in containing the release to within the area protect4ed by sorbent booms. Impact was stopped by removal of accessible source material and placement of a clay cap at the river edge.

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No impact to drainage patterns.

- d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Sorbent booms and a turbidity curtain were used to protect the river during the work. A clay cap was placed over the riverbank to protect the river from residual contamination present in bank soils.

4. **Plants** [\[help\]](#)

- a. Check the types of vegetation found on the site:

☒ deciduous tree: alder, maple, aspen, other
☐ evergreen tree: fir, cedar, pine, other
☐ shrubs
☒ grass
☐ pasture
☐ crop or grain
☐ Orchards, vineyards or other permanent crops.
☐ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
☐ water plants: water lily, eelgrass, milfoil, other
☐ other types of vegetation

- b.W hat kind and amount of vegetation will be removed or altered?

An approximate 300 square foot area of canary grass located on the off-shore bank of the site was removed during the remedial excavation work. The off-shore bank will be reconstructed and allowed to naturally revegetate during seasonal flooding.

- c. List threatened and endangered species known to be on or near the site.

Washington State Department of Fish and Wildlife Priority Habitats and Species web search did not identify any threatened and/or endangered species within a 1-mile radius of the site.

U.S. Fish and Wildlife Service IPAC identifies yellow-billed cuckoo as threatened and Spalding's catchfly plant as threatened.

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

The bank will be allowed to naturally revegetate during seasonal flooding. The balance of the site will be used as a gravel parking area.

- e. List all noxious weeds and invasive species known to be on or near the site.

According to the Washington State Noxious Weed Data Viewer Salteedar and Japanese knotweed have been identified in Pullman Washington.

[Washington State Noxious Weed Data Viewer \(arcgis.com\)](#)

5. **Animals** [\[help\]](#)

- a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Birds, fish area assumed present in the river.

- b. List any threatened and endangered species known to be on or near the site.

Washington State Department of Fish and Wildlife Priority Habitats and Species web search did not identify any threatened and/or endangered species within a 1-mile radius of the site.

[PHS on the Web \(wa.gov\)](#)

Washington Fish and Wildlife IPac Search shows that the yellow-billed cuckoo is threatened and the monarch butterfly is a candidate for endangered.

[IPaC: Explore Location resources \(fws.gov\)](#)

- c. Is the site part of a migration route? If so, explain.

Washington Fish and Wildlife IPac Search lists the following migratory birds for the project location region:

Bald Eagle, Cassin's Finch, Evening Grosbeak, Franklin's Gull, Lewis's Woodpecker, Long-eared Owl, Olive-sided Flycatcher, Rufous Hummingbird
[American White Pelican, California Gull, Lesser Yellowlegs, Sage Thrasher,](#)
Western Grebe.

[IPaC: Explore Location resources \(fws.gov\)](#)

- d. Proposed measures to preserve or enhance wildlife, if any:

None

- e. List any invasive animal species known to be on or near the site.

None

6. Energy and Natural Resources [\[help\]](#)

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Energy use was limited to fuel for excavation and transport equipment.

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No

- b. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

None

7. Environmental Health [\[help\]](#)

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

- 1) Describe any known or possible contamination at the site from present or past uses.

Petroleum hydrocarbon impacted soils

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

None

- 4) Describe special emergency services that might be required.

No

- 5) Proposed measures to reduce or control environmental health hazards, if any:

A site specific Health and Safety plan was established for the site by a Certified Safety Professional. Work was conducted in accordance with the plan.

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Minor traffic noise from the adjacent road.

- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Short term noise occurred during soil excavation, removal, and replacement during normal work hours.

- 3) Proposed measures to reduce or control noise impacts, if any:

None

8. Land and Shoreline Use [\[help\]](#)

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The site was used as a bulk fuel storage site prior to the release. The storage facility was removed as part of the cleanup and the site will be used for parking in the future. There will be no known effect to land use on nearby or adjacent properties.

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

The site is not used as a working farmland or forest land. Land use is classified and zoned as industrial.

[ArcGIS Enterprise - Official Zoning Map of The City of Pullman \(pullman-wa.gov\)](#)

- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No, surrounding properties are designated as industrial landuse.

c. Describe any structures on the site.

None at the conclusion of the project.

d. Will any structures be demolished? If so, what?

Bulk AST storage tanks and associated concrete secondary containment have been removed.

e. What is the current zoning classification of the site?

The Proposed Project site is located in the industrial district, as identified by the City of Pullman.

f. What is the current comprehensive plan designation of the site?

Industrial

g. If applicable, what is the current shoreline master program designation of the site?

High Intensity

i. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Aquifer Recharge Area, Priority Habitat, Geologically Hazardous Area.

j. Approximately how many people would reside or work in the completed project?

None

j. Approximately how many people would the completed project displace?

None

k. Proposed measures to avoid or reduce displacement impacts, if any:

None

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

None

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

None

9. Housing [\[help\]](#)

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None

- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None

- c. Proposed measures to reduce or control housing impacts, if any:

None

10. Aesthetics [\[help\]](#)

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

This project does not include the development of structures.

- b. What views in the immediate vicinity would be altered or obstructed?

This project will not impact, alter, or obstruct views.

- c. Proposed measures to reduce or control aesthetic impacts, if any:

This project will not cause a reduction in controlled aesthetics.

11. Light and Glare [\[help\]](#)

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

This project will not produce light or glare on or surrounding the project site.

- b. Could light or glare from the finished project be a safety hazard or interfere with views?

No

c. What existing off-site sources of light or glare may affect your proposal?

None

d. Proposed measures to reduce or control light and glare impacts, if any:

None

12. Recreation [\[help\]](#)

a. What designated and informal recreational opportunities are in the immediate vicinity?

None

b. Would the proposed project displace any existing recreational uses? If so, describe.

No

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None

13. Historic and cultural preservation [\[help\]](#)

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe.

None

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

None. Archeology services were present on site during all impact to site soils. No conditions of historic or cultural significance were encountered.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples *include* consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Archeology services assessed the site during the initial spill response and were present on site during all impact to site soils. No conditions of historic or cultural significance were encountered.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

None

14. Transportation [\[help\]](#)

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The site is located on NW state Street in Pullman, Washington. Potential roadways used during this project are North west State Street, Highway 27, North Grand Avenue, Highway 270, Highway 195.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

Yes, The Pullman Blue loop transit bus travels on NW State Street. The closes Transit stop is located 200-feet southwest of the site on Highway 270.

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

This project will not eliminate or add parking spots to the project site.

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No new or road improvements will be needed for this project.

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The South Fork of the Palouse Rive is located immediately north of the project site. The Northern Pacific Railroad is located south of the subject site.

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

During soil removal approximately 4-6 trucks traveled to the site per day to pick up contaminated soil and deliver clean fill.

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No affect.

- h. Proposed measures to reduce or control transportation impacts, if any:

None

15. Public Services [\[help\]](#)

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

None

- b. Proposed measures to reduce or control direct impacts on public services, if any.

None

16. Utilities [\[help\]](#)

- a. Circle utilities currently available at the site:
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system,
other _____

Public utilities are available. Electricity was used prior to the remedial action. Following removal of the tank farm and cleanup of contaminated soils, the site has been redeveloped as a gravel parking area with no utility service.

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None

C. Signature [\[HELP\]](#)

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____

Need signature

Name of signee Kevin McDonnell

Position and Agency/Organization Four Star Supply Inc.

Date Submitted: _____

D. Supplemental sheet for nonproject actions [\[HELP\]](#)

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

The spill resulted in petroleum impact to the South Fork of the Palouse River which was contained by sorbent booms until it could be addressed through placement of a clay cap.

Proposed measures to avoid or reduce such increases are:

Placement of a clay cap to protect the river from contamination remaining in the bank.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

No impact

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

None

3. How would the proposal be likely to deplete energy or natural resources?

No impact

Proposed measures to protect or conserve energy and natural resources are:

None

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

No affect

Proposed measures to protect such resources or to avoid or reduce impacts are:

None

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

No impact

Proposed measures to avoid or reduce shoreline and land use impacts are:

None

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

No impact

Proposed measures to reduce or respond to such demand(s) are:

None

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

Work was conducted under the direction and oversight of an Ecology lead spill response team that included representation from various state and federal agencies. No conflict with applicable requirements occurred.



APPENDIX G

Site Photographs



Photograph #1: 05/03/2022:

View of the 12,000-gallon Above Ground Storage Tank (AST) present at Four Star Supply, Inc located at 355 Northwest State Street in Pullman, Washington. The South Fork Palouse River (SFPR) can be seen at the bottom of the photo flowing west. A containment system can be seen along the shoreline preventing petroleum product from entering the SFPR.



Photograph #2: 05/03/2022:

View of the 1/4-inch hole on tank 4 that leaked approximately 400-gallons of red-dyed diesel #2 through the cracked secondary containment sometime after April 22, 2022 until the leak was discovered on April 25, 2022 at 6:30 in the morning.



Photograph #3: 05/03/2022:

View of diesel saturated oleophilic sorbent materials (OSM) within one of the five sub-surface product capture points constructed along the south shore of the SFPR.



Photograph #4: 05/03/2022:

View of containment booms, OSM booms, and OSM pads deployed along the south shore of the SFPR.



Photograph #5: 5/03/2022:

View of petroleum sheen observed being captured within the containment boom supplemented with OSM booms and pads.



Photograph #6: 05/06/2023:

View of residual diesel fuel associated with the leaking AST #4 and the concrete secondary containment located below the AST tank farm.



Photograph #7: 05/12/2022:

View of the AST tank farm being decommissioned and the concrete secondary containment being demolished.



Photograph #8: 05/19/2022:

View of the Phase I Characterization sampling area located below the leaking AST #4.



Photograph #9: 05/19/2022:

View of Phase I Characterization sample FS-051922-02-3.0 collected from the west central area of the excavation site that was identified to have detectable concentrations of diesel range organics, gasoline range organics, and benzene above the MTCA Method A Cleanup Levels.



Photograph #10: 05/24/2022:

View looking west at the Phase I petroleum-impacted area after the AST's were decommissioned and concrete secondary containment was demolished. Excavation started where the tanks previously sat within the Grange Supply property. Containments of Concern (COC) were identified to consist of gasoline-range hydrocarbons, diesel-range hydrocarbons, benzene, toluene, ethylbenzene, and xylenes (BTEX).



Photograph #11: 05/24/2022:

View of Phase I excavation continuing on the northeast side of the excavation site.



Photograph #12: 05/24/2022:

View of Phase I excavation continuing on the northeast side of the excavation site. The sub-surface product capture points and containment system can be seen towards the right of the photo.



Photograph #13: 05/25/2022:

View of the excavator loading a truck with petroleum contaminated soil (PCS) from the Phase I excavation.



Photograph #14: 05/25/2022:

View of the oil water separator located in the northcentral portion of the Phase I excavation. Various Types of undocumented fill consisting of metal, piping, basalt cobble, and concrete were identified throughout the Phase I excavation area.



Photograph #15: 05/25/2022:

View of the eastern exploratory trench extended to the south property boundary. Fulcrum identified PCS to extend past the south and east excavation extents associated with the Phase I work.



Photograph #16: 05/26/2022:

View of Phase I excavation continuing on the west side of the excavation site. The high plasticity clay used as backfill can be seen in the background (see arrow).



Photograph #17: 05/26/2022:

View of Phase I excavation pit looking northeast near the west boundary of the excavation area. Groundwater can be seen within the excavation at approximately the same elevation as the SFPR.



Photograph #18: 05/26/2022:

View of petroleum contaminated soil present within the Phase 1 excavation pit (see arrow).



Photograph #19: 05/26/2022:

View of confirmation sample FS-052622-SW-31-2.0 collected from the northwest area of the excavation site that was identified to have detectable concentrations of diesel range organics, gasoline range organics, and benzene above MTCA Method A Cleanup Levels.



Photograph #20: 05/26/2022:

View of Phase I excavation pit extents. The northeast, north, and northwest areas of the Phase I excavation were excavated down to clean pit bottoms and backfilled with a continuous clay layer to serve as a protective impermeable barrier preventing any remaining inaccessible contamination from entering the proximal SFPR.



Photograph #21: 06/01/2022:

View sample FS-060122-PB-19-11 collected from the northeast pit bottom of the Phase I excavation. Laboratory analytical identified nondetect concentrations for diesel-range organics, gasoline-range organics, and BTEX.



Photograph #22: 06/03/2022:

View of Phase I excavation pit being filled with high plastic clay backfill material to protect the proximal SFPR.



Photograph #23: 06/03/2022:

Additional view of Phase I excavation pit being filled with high plastic clay material.



Photograph #24: 06/09/2022:

View of the bank restored to its pre-incident condition after backfilling was completed for the Phase I excavation pit.



Photograph #25: 06/09/2022:

View of the turbidity curtain being deployed along the south shore of the SFPR to prepare for the Phase I south shore PCS clay capping and basalt armoring install. Able can be seen in the background wearing their personal flotation devices (PFD).



Photograph #26: 06/09/2022:

View of high plasticity clay being applied to the south shoreline of the SFPR.



Photograph #27: 06/09/2022:

View looking east from the west end of the engineered cap placed along the area of the SFPR south shoreline impacted by PCS. Basalt rip-rap was placed over the high plasticity clay cap to prevent erosion of the shoreline. No sheen was observed within the containment zone after the engineered cap was installed.



Photograph #28: 06/28/2022:

View of the south shoreline bank constructed back to its initial condition after the Phase I site restoration activities were completed.



Photograph #29: 06/28/2022:

View of the excavation site after the Phase I site restoration activities were completed.



Photograph #30: 08/15/2022:

View of the excavation site at the start of the Phase II remedial activities.



Photograph #31: 08/15/2022:

View of the eastern Phase II characterization trench. Two trenches were excavated to characterize site soils prior to planned remedial excavation activities.



Photograph #32: 08/15/2022:

View of Phase II characterization sample T1-0815022-02-5.0 collected from the central area of characterization trench 1 (T1) that was identified to have detectable concentrations of diesel range organics, gasoline range organics, and benzene above MTCA Method A Cleanup Levels.



Photograph #33: 08/16/2022:

View of Phase II remedial excavation conducted along the eastern boundary of the Grange Supply property.



Photograph #34: 08/16/2022:

View of characterization sample FS-081522-SW-46-11.0 collected from the southeast pit bottom sidewall of the Phase II remedial excavation. Laboratory analytical identified nondetect concentrations for diesel range organics, gasoline range organics, and benzene above MTCA Method A Cleanup Levels.



Photograph #35: 08/16/2022:

View of confirmation sample being collected within the southeast corner of the Phase II remedial excavation.



Photograph #36: 08/17/2022:

View of continued Phase II remedial excavation work being conducted within the southeast portion of the remedial excavation. A truck and pup can be seen in the background being direct loaded with PCS.



Photograph #37: 08/17/2022:

View of continued Phase II remedial excavation being conducted within the southeast portion of the remedial excavation.



Photograph #38: 08/19/2022:

View of Phase II confirmation sample FS-081522-PB-51-11.5 collected along the eastern excavation pit bottom. Laboratory analytical identified nondetect concentrations for diesel range organics, gasoline range organics, and benzene above MTCA Method A Cleanup Levels.



Photograph #39: 08/19/2022:

View of backfill material being placed along the eastern sidewall of the excavation site. All imported backfill was sampled for the COCs prior to placement within the excavation.



Photograph #40: 08/22/2022:

View of Phase II remedial excavation work being conducted along the west excavation boundary.



Photograph #41: 08/23/2022:

View of continued Phase II remedial excavation performed within the north central portion of the site. The high plasticity clay used for backfill during the Phase I remedial excavation is shown in the central portion of the photo (see arrow).



Photograph #42: 08/24/2022:

View of continued Phase II remedial excavation performed in the central area of the excavation site. Groundwater was observed at approximately 20-ft below ground surface (bgs).



Photograph #43: 08/24/2022:

View of continued Phase II remedial excavation performed within the northwest portion of the excavation site.



Photograph #44: 10/18/2017:

View of Phase II confirmation sample FS-081522-SW-64-6.5 collected from the western side wall of the excavation site that was identified to have detectable concentrations of diesel-range organics, gasoline-range organics, and benzene above MTCA Method A Cleanup Levels.



Photograph #45: 08/26/2022:

View of continued Phase II remedial excavation conducted within the southwest portion of the excavation site.



Photograph #46: 08/26/2022:

View of Phase II excavation pit being filled with backfill material. Groundwater can be seen within the excavation at approximately 20-feet bgs.



Photograph #47: 08/26/2022:

View of Phase II excavation pit being backfilled with clean basalt cobble material.



Photograph #48: 08/31/2022:

View of Phase II excavation site restoration activities being completed at the Grange Supply property.



Photograph #49: 09/01/2022:

View of Phase II excavation site being finished with 5/8 minus gravel throughout the parking area.



Photograph #50: 09/01/2022:

View of Phase II excavation site during restoration activities. Large boulders were placed along the bank to prevent vehicles from falling into the SFPR.



Photograph #51: 09/01/2022:

View of Phase II excavation area after the completion of site restoration activities.



APPENDIX H

Soil Sample Results Summary Table

Table 1: Four Star Fuel Supply - Characterization Soil Samples										
Sample ID	Depth Below Ground Surface (ft) Measured Relative to SFPR Elevation	Analytes (ppm)								
		NWTPH-Dx		NWTPH-Gx	BTEX				Lead	
		Diesel Range Organics (DRO)	Residual Range Organics (RRO)	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	Total Lead	TCLP Lead
FS-052422-MB-01	0	680	ND	23	0.092	0.11	0.18	0.37	-	
FS-052422-MB-02	0	1000	ND	190	0.12	0.16	0.5	0.5	-	
FS-052422-MB-03	0	1500	ND	1500	0.84	ND	7.5	0.99	-	
FS-052422-MB-04	0	1200	ND	1200	0.89	0.14	0.37	0.74	-	
FS-052422-MB-05	0	1400	ND	270	0.19	0.096	0.6	0.46	-	
FS-051322-01-0.0	0	38	ND	ND	ND	ND	ND	ND	24	-
FS-051322-02-0.0	0	ND	ND	ND	ND	ND	ND	ND	19	-
FS-051322-03-0.0	0	ND	ND	ND	ND	ND	ND	ND	160	ND
FS-051322-04-0.0	0	34	ND	ND	ND	ND	ND	ND	16	-
FS-051322-05-0.0	0	3700	ND	5200	ND	0.49	0.83	8.4	ND	-
FS-052522-PB-09-11	11	9,500	ND	2,800E	1.3	<1.0	23	14	-	-
FS-052522-PB-09-11 (duplicate)^	11	6,800	ND	2,200	1.1	<2.0	22	13	-	-
FS-051922-01-2.0	2	9600	ND	250	ND	ND	ND	ND	170	-
FS-051922-02-3.0	3	2800	770	6600	ND	ND	ND	ND	79	-
FS-051922-03-2.0	2	2900	ND	800	ND	ND	ND	ND	ND	-
FS-051922-04-2.0	2	3600	ND	2000	ND	ND	ND	ND	54	-
FS-051922-05-2.0	2	260	ND	ND	ND	ND	ND	ND	170	-
FS-051922-06-2.0	2	2400	180	73	ND	ND	ND	ND	46	-
FS-051922-07-6.0	6	93	ND	710	ND	ND	ND	1.5	ND	-
FS-051922-08-8.0	8	4900	ND	3900	ND	ND	0.5	4.6	14	-
FS-081522-SP-01^	N/A	ND	ND	ND	ND	ND	ND	ND	-	-
FS-052722-PB-43-20.0	2	ND	ND	ND	0.033	ND	ND	ND	-	-
FS-052722-DP-05 (43 Duplicate)^	2	ND	ND	ND	ND	ND	ND	ND	-	-
T1-081522-01-3.0	3	100	ND	35*	ND	ND	ND	ND	-	-
T1-081522-01-5.0	5	4700	ND	1100	0.21	0.18	0.39	ND	-	-
T1-081522-02-3.0	3	41	170	19	ND	ND	ND	ND	-	-
T1-081522-02-5.0	5	19	ND	29	ND	ND	ND	ND	-	-
T1-081522-02-7.0	7	69	ND	10	ND	ND	ND	ND	-	-
T1-081522-02-8.0	8	7200	ND	1900	0.056	ND	0.44	ND	-	-
T1-081522-03-3.0	3	350	670	34*	0.055	0.5	ND	ND	-	-
T1-081522-03-5.0	5	180	420	ND	ND	ND	ND	ND	-	-
T1-081522-03-10.0	10	530	ND	910	ND	ND	ND	ND	-	-
T2-081522-01-3.0	3	ND	ND	21	ND	ND	ND	ND	-	-
T2-081522-01-5.0	5	ND	ND	ND	ND	ND	ND	ND	-	-
T2-081522-01-6.5	6.5	4400	ND	1300	0.2	ND	0.16	ND	-	-
T2-081522-02-2.0	2	ND	38	55	ND	ND	ND	ND	-	-
T2-081522-02-4.0	4	ND	ND	ND	ND	ND	ND	ND	-	-
T2-081522-02-6.5	6.5	4200	ND	1600	0.057	ND	3.5	ND	-	-
T2-081522-03-2.0	2	53	270	7.3	ND	ND	ND	ND	-	-
T2-081522-03-4.0	4	ND	44	ND	ND	ND	ND	ND	-	-
T2-081522-03-10.0	10	26	ND	18	ND	ND	ND	ND	-	-
FS-081522-ASP-01^	N/A	ND	ND	ND	ND	ND	ND	ND	-	-
FS-052522-SW-CS-27^	N/A	ND	ND	ND	ND	ND	ND	ND	-	-
MTCA Method A Clean Up Level		2000		30	0.03	7	6	9	250	5

Bold indicates concentrations above MTCA Method A Clean Up Level

* MTCA Method A Clean Up Level for Gasoline in soil when Benzene is present - 30 ppm

- Indicates Not Analyzed

^ Indicates not represented on Figures

Indicates Characterization Sample

Indicates Imported Backfill Sample

33 Total Characterization Samples
3 Total Imported Backfill Samples

Table 2: Four Star Fuel Supply - Clean Pit Bottom Confirmation Samples								
Sample ID	Depth Below Ground Surface (ft) Measured Relative to SFPR Elevation	Analytes (ppm)						
		NWTPH-Dx		NWTPH-Gx	BTEX			
		Diesel Range Organics (DRO)	Residual Range Organics (RRO)	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes
FS-052722-PB-47-22.0	12	ND	ND	ND	ND	ND	ND	ND
FS-052722-PB-47-22.0 (LD)	12	ND	ND	ND	ND	ND	ND	ND
FS-053122-01-11.0	11	ND	ND	ND	ND	ND	ND	ND
FS-053122-05-11.0	11	ND	ND	ND	ND	ND	ND	ND
F053122-05-11 (LD)^	11	ND	ND	ND	ND	ND	ND	ND
FS-053122-09-11.0	11	ND	ND	ND	ND	ND	ND	ND
F053122-09-11 (LD)^	11	ND	ND	ND	ND	ND	ND	ND
FS-053122-14-11.0	11	ND	ND	ND	ND	ND	ND	ND
F053122-14-11 (LD)^	11	ND	ND	ND	ND	ND	ND	ND
FS-053122-18-9.0	9	ND	ND	ND	ND	ND	ND	ND
FS-060122-PB-19-11	11	ND	ND	ND	ND	ND	ND	ND
FS-060122-PB-23-11	2	ND	ND	ND	ND	ND	ND	ND
FS-060222-PB-27-11.0	11	ND	ND	ND	ND	ND	ND	ND
FS-052622-PB-28-20.0	10	ND	ND	ND	0.021	ND	ND	0.65
FS-060222-PB-31-11	11	ND	ND	ND	ND	ND	ND	ND
FS-052622-PB-32-20.0	10	ND	ND	ND	ND	ND	ND	ND
FS-052622-PB-36-20.0	10	ND	ND	ND	ND	ND	ND	ND
FS-081522-43	11	ND	ND	ND	ND	ND	ND	ND
FS-081522-43 (LD)^	11	ND	ND	ND	ND	ND	ND	ND
FS-081522-46	11	ND	ND	ND	ND	ND	ND	ND
FS-081522-46 (LD)^	11	ND	ND	ND	ND	ND	ND	ND
FS-081522-Pb-49-12.5	12.5	ND	ND	ND	ND	ND	ND	ND
FS-081522-PB-50-12.5	12.5	ND	ND	ND	ND	ND	ND	ND
FS-081522-Pb-51-11.5	11.5	ND	ND	ND	ND	ND	ND	ND
FS-081522-PB-60-11.5	11.5	ND	ND	ND	ND	ND	ND	ND
FS-081522-PB-75-12.5	12.5	ND	ND	ND	ND	ND	ND	ND
MTCA Method A Clean Up Level		2000		30	0.03	7	6	9

^ Indicates not represented on Figures

Table 3: Four Star Fuel Supply -Sidewall Confirmation Samples								
Sample ID	Depth Below Ground Surface (ft) Measured Relative to SFPR Elevation	Analytes (ppm)						
		NWTPH-Dx		NWTPH-Gx	BTEX			
		Diesel Range Organics (DRO)	Residual Range Organics (RRO)	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes
FS-052522-SW-11-6.5	6.5	62	ND	39	0.028	ND	0.069	ND
FS-052522-SW-12-9.0	9	ND	ND	ND	0.066	ND	ND	ND
FS-052522-SW-13-2.0	2	14,000	ND	87	0.048	2	4.7	23E
FS-052522-SW-14-11.0	11	11,000	ND	480	0.66	<2.0	4.8	<3.0
FS-052522-SW-15-9.0	9	74	ND	ND	ND	ND	ND	ND
FS-052522-SW-16-3.0	3	ND	ND	ND	ND	ND	ND	ND
FS-052522-SW-17-11.0	11	10,000	ND	2,100	3.8	<2.0	2.8	<3.0
FS-052522-SW-18-9.0	9	6,700	ND	450	2.4	<1	1.8	<1.5
FS-052522-SW-19-3.0	3	ND	ND	ND	ND	ND	ND	ND
FS-052522-SW-19-3.0 (LD)^	3	-	-	ND	ND	ND	ND	ND
FS-052522-SW-20-11.0	11	290	ND	48	0.1	ND	0.12	ND
FS-052522-SW-21-9.0	9	930	ND	21	ND	ND	ND	ND
FS-052522-SW-22-3.0	3	ND	ND	ND	ND	ND	ND	ND
FS-052522-SW-23-11.0	11	ND	ND	14	ND	ND	ND	0.54
FS-052522-SW-24-9.0	9	ND	ND	ND	ND	ND	ND	ND
FS-052522-SW-24-9.0 (LD)^	9	ND	ND	ND	ND	ND	ND	ND
FS-052522-SW-25-3.0	3	ND	ND	12	ND	ND	ND	ND
FS-052522-SW-26-21.0	11	ND	ND	31	ND	ND	ND	0.13
FS-052622-SW-29-9.0	9	ND	ND	ND	0.038	ND	ND	ND
FS-052622-SW-30-6.5	6.5	83	ND	19	0.061	ND	ND	ND
FS-052622-SW-30-6.5 (LD)^	6.5	-	-	ND	0.066	ND	ND	ND
FS-052622-SW-31-2.0	2	4,900	ND	260	<0.1	ND	1.6	8.8
FS-052622-SW-33-9.0	9	ND	ND	ND	ND	ND	ND	ND
FS-052622-SW-33-9.0 (LD)^	9	ND	ND	ND	ND	ND	ND	ND
FS-052622-SW-34-6.5	6	69	ND	ND	ND	ND	ND	ND
FS-052622-SW-35-2.0	2	1,500	ND	180	<0.05	0.45	1.3	8.5
FS-052622-SW-36-20.0	10	ND	ND	ND	ND	ND	ND	ND
FS-052622-SW-37-9.0	9	ND	ND	ND	ND	ND	ND	ND
FS-052622-SW-37-9.0 (LD)^	9	ND	ND	ND	ND	ND	ND	ND
FS-052622-DP-01 (37 Duplicate)^	9	ND	-	ND	0.11	0.29	ND	ND
FS-052622-SW-38-6.5	6.5	13,000	ND	360	0.18	<1.0	3.4	<1.5
FS-052622-SW-39-2.0	2	540	ND	20	ND	ND	0.088	0.69
FS-052622-DP-02 (39 Duplicate)^	2	2,400	ND	ND	ND	ND	0.068	0.56
FS-052622-SW-40-9.0	9	ND	ND	ND	ND	ND	ND	ND
FS-052622-DP-03 (40 Duplicate)^	9	ND	ND	ND	ND	ND	ND	ND
FS-052622-SW-41-6.5	6.5	ND	ND	ND	ND	ND	ND	ND
FS-052622-DP-04 (41 Duplicate)^	6.5	1900	ND	ND	ND	ND	ND	ND
FS-052622-SW-42-2.0	2	98	ND	ND	ND	ND	ND	ND
FS-052722-SW-44-9.0	9	82	ND	ND	ND	ND	ND	ND
FS-052722-SW-45-6.0	6	6,600	ND	420	<0.4	<2.0	1.3	7.3
FS-052722-SW-46-2.0	2	13,000	ND	ND	ND	ND	ND	ND
FS-053122-02-2.0	2	5,200	ND	95	< 0.1	< 0.5	< 0.25	< 0.75
FS-053122-03-6.0	6	ND	ND	21	0.078	ND	ND	ND
FS-053122-04-9.0	9	ND	ND	ND	ND	ND	ND	ND

Sample ID	Depth Below Ground Surface (ft) Measured Relative to SFPR Elevation	Analytes (ppm)						
		NWTPH-Dx		NWTPH-Gx	BTEX			
		Diesel Range Organics (DRO)	Residual Range Organics (RRO)	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes
FS-053122-06-2.0	2	1,700	ND	20	0.1	ND	ND	ND
FS-053122-07-6.0	6	ND	ND	ND	ND	ND	ND	ND
FS-053122-08-9.0	9	ND	ND	ND	ND	ND	ND	ND
FS-053122-10-2.0	2	11,000	ND	25	ND	ND	ND	ND
FS-053122-11-6.0	6	250	ND	28	0.038	ND	ND	ND
FS-053122-12-6.0	6	370	ND	32	ND	ND	0.19	ND
FS-053122-13-9.0	9	ND	ND	22	ND	ND	ND	ND
FS-053122-15-2.0	2	ND	ND	ND	ND	ND	ND	ND
FS-053122-16-6.0	6	170	ND	160	0.2	ND	2.1	0.26
FS-053122-17-9.0	9	350	ND	64	0.054	ND	0.85	ND
FS-060122-SW-20-2.0	2	ND	ND	ND	0.13	ND	ND	ND
FS-060122-SW-21-6.0	6	ND	ND	ND	ND	ND	ND	ND
FS-060122-SW-22-9.0	9	ND	ND	12	0.077	ND	ND	ND
FS-060122-SW-24-2.0	2	150	ND	120E	0.15	ND	1.1	0.49
FS-060122-SW-25-6.0	6	ND	ND	ND	ND	ND	ND	ND
FS-060122-SW-26-9.0	9	ND	ND	ND	ND	ND	ND	ND
FS-060222-SW-28-2.0	2	ND	ND	ND	0.021	ND	ND	0.65
FS-060222-SW-29-6.0	6	ND	ND	ND	ND	ND	ND	ND
FS-060222-SW-30-9.0	9	ND	ND	ND	ND	ND	ND	ND
FS-060222-SW-32-2.0	2	1,300	ND	110	0.077	0.68	1.1	6.8
FS-060222-SW-33-6.0	6	ND	ND	ND	0.6	ND	0.72	ND
FS-060222-SW-34-9.0	9	ND	ND	ND	0.039	ND	ND	ND
FS-060222-SW-35-11	11	ND	ND	ND	0.47	ND	0.57	ND
FS-081522-44	3	3,200	ND	660	ND	0.18	0.24	0.29
FS-081522-45	3	ND	ND	13	0.049	0.22	ND	0.25
FS-081522-47	6	ND	ND	ND	ND	ND	ND	ND
FS-081522-48	3	ND	ND	ND	ND	ND	ND	ND
FS-081522-SW-61-11.5	11.5	ND	ND	ND	ND	ND	ND	ND
FS-081522-SW-62-10.5	10.5	ND	ND	ND	ND	ND	ND	ND
FS-081522-SW-63-8.5	8.5	ND	ND	ND	ND	ND	ND	ND
FS-081522-SW-64-6.5	6.5	2,000	ND	2,100	0.44	0.21	22	1.5
FS-081522-SW-65-+6.0	(+)6	ND	ND	ND	ND	ND	ND	ND
FS-081522-SW-66-12.5	12.5	ND	ND	ND	ND	ND	ND	ND
FS-081522-SW-67-10.5	10.5	ND	ND	ND	ND	ND	ND	ND
FS-081522-SW-68-8.5	8.5	ND	ND	ND	ND	ND	ND	ND
FS-081522-SW-69-4.0	4	500	ND	220	ND	ND	0.49	ND
FS-081522-SW-70-+8.0	(+)8	730	ND	ND	ND	ND	0.098	ND
FS-081522-SW-71-11.5	11.5	ND	ND	ND	ND	ND	ND	ND
FS-081522-SW-72-8.5	8.5	ND	ND	ND	0.025	ND	ND	ND
FS-081522-SW-73-6.0	6	1,900	ND	230	0.61	0.21	3	3.2
FS-081522-SW-74-+9.0	(+)9	ND	ND	ND	ND	ND	ND	ND
FS-081522-SW-76-12.5	12.5	ND	ND	ND	ND	ND	ND	ND
FS-081522-SW-77-+7.5	(+)7.5	ND	ND	ND	ND	ND	ND	0.17
FS-081522-SW-78-11.5	11.5	ND	ND	27	ND	ND	0.17	ND
FS-081522-SW-79-+2.5	(+)2.5	90	ND	9,900	< 0.2	1.6	64	160
FS-081522-SW-80-8.5	8.5	ND	ND	ND	ND	ND	ND	ND
MTCA Method A Clean Up Level		2000		30	0.03	7	6	9
Total Samples		85						
Above MTCA Level A Cleanup		36						
Below MTCA Cleanup/Non-Detect		49						
Percent Clean		58.00%						

^ Indiciates not represented on Figures
LD lab duplicate



APPENDIX I

Waste Disposal Receipts

Waste Management Facility
18200 W. Ham Road
Medina, WA 99022

Ph: (509)244-0151

Original
Ticket# 667665

Job # 22116
Approved: _____
Check# _____ Paid _____

Customer Name ABLECLEAN ABLE CLEAN-UP Carrier ABLECLEANUP ABLE CLEANUP TECHNOLOGIE
Ticket Date 06/20/2022 Vehicle# DARON
Payment Type Credit Account Container
Manual Ticket# Driver DARON SLATER
Route Check#
Hauling Ticket# Billing# 0000726
Destination Grid
Manifest 106595wa
Profile 106595WA (LF01 Diesel Fuel Contaminated Soil and Debris (WM012A))
Generator WA-ABLE CLEANUP TECHNOLOGIES ABLE CLEANUP TECHNOLOGIES
PO# 22110

COPY

	Time	Scale	Operator	Inbound	Gross	
In	06/20/2022 14:07:50	Scale1	ashield2		Tare	13520 lb
Out	06/20/2022 14:38:44	Scale1	ashield2		Net	11660 lb
					Tons	1860 lb
						0.93

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	0.93	Tons	33.48	1.21	\$33.48	SPOKANE
2 EVF-P10-Environmental F	100		%	10.00		\$3.38	SPOKANE
3 SRHD1-Spokane Regional	100	0.93	Tons	0.32	0.01	\$0.30	SPOKANE

Phase 1

Soils From Holes on Shoreline

Total Tax/Fees \$1.22
Total Ticket \$38.38

Driver's Signature

ASK Daron

The total amount includes fees and taxes that may not all be listed on this ticket due to technical limitation.

WM
1820 Main Road
Medi WASTE MANAGEMENT 9022

Ph: (509)244-0151

Original
Ticket# 664881

COPY

Customer Name ABLECLEAN ABLE CLEAN-UP Carrier BODES
Ticket Date 05/18/2022 Vehicle# BRAD
Payment Type Credit Account Container
Manual Ticket# Driver
Route Check#
Hauling Ticket# Billing# 0000726
Destination Grid
Manifest 106595wa
Profile 106595WA (LF01 Diesel Fuel Contaminated Soil and Debris (WM012A))
Generator WA-ABLE CLEANUP TECHNOLOGIES ABLE CLEANUP TECHNOLOGIES
PO# 22110

Category:
Job # 22110 Four Star
Approved:
Check# Paid ☐

	Time	Scale	Operator	Inbound	Gross	
In	05/18/2022 13:24:27	Scale1	ASHIELD2		Tare	67620 lb
Out	05/18/2022 14:01:47	Scale1	ASHIELD2		Net	43160 lb
					Tons	24460 lb
						12.23

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	12.23	Tons	33.48	14.74	\$409.46	SPOKANE
2 EVF-P10-Environmental F	100		%	10.00		\$41.34	SPOKANE
3 SRHDL-Spokane Regional	100	12.23	Tons	0.32	0.14	\$3.91	SPOKANE

Booms
+
Pads

Phase 1

Total Tax/Fees \$14.88
Total Ticket \$469.59

Driver's Signature

ABKBrad

The total amount includes fees and taxes that may not all be listed on this ticket due to technic limitation.

Waste Management Facility
1820 W. Main Road
Medi WASTE MANAGEMENT 9022

Original
Ticket# 663721
Ph: (509) 244-0151

COPY

Customer Name ABLECLEAN ABLE CLEAN-UP Carrier ABLECLEANUP ABLE CLEANUP TECHNOLOGIE
Ticket Date 05/06/2022 Vehicle# DARON
Payment Type Credit Account Container
Manual Ticket# Driver DARON SLATER
Route Check#
Hauling Ticket# Billing# 0000726
Destination Grid
Manifest 106595WA
Profile 106595WA (LF01 Diesel Fuel Contaminated Soil and Debris (WM012A))
Generator WA-ABLE CLEANUP TECHNOLOGIES ABLE CLEANUP TECHNOLOGIES
PO# 22110

Category:
Job # 22110 Four Star
Approved:
Check# Paid 1

	Time	Scale	Operator	Inbound	Gross	
In	05/06/2022 13:31:36	Scale1	Fbaxter		Tare	54520 lb
Out	05/06/2022 13:56:10	Scale1	Fbaxter		Net	53940 lb
					Tons	580 lb
						0.29

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	0.29	Tons	33.48	1.21	\$33.48	SPOKANE
2 EVF-P10-Environmental F	100		%	10.00		\$3.36	SPOKANE
3 SRHD1-Spokane Regional	100	0.29	Tons	0.32		\$0.09	SPOKANE

Phase 1
Booms & Pads

Total Tax/Fees \$1.21
Total Ticket \$38.14

Driver's Signature

FB

The total amount includes fees and taxes that may not all be listed on this ticket due to technic limitation.

Waste Management Facility
1820 W. Graham Road
Medina, WA 98042

Original
Ticket# 675266
Ph: (509)244-0151

Customer Name ABLECLEAN ABLE CLEAN-UP Carrier ABLECLEANUP ABLE CLEANUP TECHNOLOGIE
Ticket Date 09/07/2022 Vehicle# ALLEN
Payment Type Credit Account Container
Manual Ticket# Driver ALLEN PHILLIPS
Route Check#
Hauling Ticket# Billing# 0000726
Destination Grid
Manifest 106595wa
Profile 106595WA (LF01 Diesel Fuel Contaminated Soil and Debris (WM012A))
Generator WA-ABLE CLEANUP TECHNOLOGIES ABLE CLEANUP TECHNOLOGIES
PO# 22110

Time	Scale	Operator	Inbound	Gross	15340 lb
In 09/07/2022 13:19:25	Scale1	ASHIELD2		Tare	14580 lb
Out 09/07/2022 13:30:38	Scale1	ASHIELD2		Net	760 lb
				Tons	0.38

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	0.38	Tons	33.48	1.21	\$33.48	SPOKANE
2 EVF-P10-Environmental F	100		%	10.00		\$3.36	SPOKANE
3 SRHD1-Spokane Regional	100	0.38	Tons	0.32		\$0.12	SPOKANE

Phase 1
Beams + Pads
From shoreline
Recovery Holes

Total Tax/Fees \$1.21
Total Ticket \$38.17

Driver's Signature

ABK Allen

The total amount includes fees and taxes that may not all be listed on this ticket due to technical limitation.



P.O. Box 68
Genesee, ID 83832
rcc@roachconstruction.biz
Phone # 208-285-1411

COPY

Invoice

DATE	INVOICE NO.
6/30/2022	13815

Q Category: 4STAR
Job # 22110
Approved: _____
Check# _____ Paid ☐

BILL TO
ABLE CLEAN-UP TECHNOLOGIES, INC PO BOX 6185 SPOKANE, WA 99217

Phase 1

P.O. NO.	TERMS
4-STAR PULLMAN	Due on receipt

DATE	DESCRIPTION	QTY	RATE	AMOUNT
6/9/2022	4-STAR, PULLMAN PETROLEUM CONTAMINATED SOILS CLEANUP PROGRESS BILLING #2 FINAL BILLING THROUGH 6/9/22			
	CLAY BY THE TON	63.33	5.50	348.32
	DIRTY PIT RUN BY THE TON	98.58	5.50	542.19
	HAULING TR#47 WITH PUP	10	170.00	1,700.00
	Washington Sales Tax Whitman Co		7.90%	0.00
			Total	\$2,590.51

Invoices are due and payable upon receipt of the invoice. Unpaid invoices are subject to a minimum \$20 late fee or 1.5% monthly (18% annual) service charge, whichever is greater.



P.O. Box 68
Genesee, ID 83832
rcc@roachconstruction.biz
Phone # 208-285-1411

COPY

Invoice

DATE	INVOICE NO.
6/7/2022	13762

Phase 1

BILL TO
ABLE CLEAN-UP TECHNOLOGIES, INC
PO BOX 6185
SPOKANE, WA 99217

Category: _____
Job # 22110 Four Star
Approved: _____
Check# _____ Paid ☐

P.O. NO.	TERMS
4-STAR PULLMAN	Due on receipt

DATE	DESCRIPTION	QTY	RATE	AMOUNT
	4-STAR, PULLMAN PETROLEUM CONTAMINATED SOILS CLEANUP PROGRESS BILLING #1 THROUGH 6/6/2022			
5/24/2022	PCS BY THE LCY	164	100.00	16,400.00
	HAULING TR#43 END DUMP	9	170.00	1,530.00
	HAULING TR#45 PUP	8	170.00	1,360.00
5/25/2022	PCS BY THE LCY	229	100.00	22,900.00
	HAULING TR#43 END DUMP	10	170.00	1,700.00
	HAULING TR#45 PUP	10	170.00	1,700.00
	HAULING TR#47	9	140.00	1,260.00
5/26/2022	PCS BY THE LCY	246	100.00	24,600.00
	CLAY BY THE TON	92.84	5.50	510.62T
	CONCRETE DUMP	2	100.00	200.00
	HAULING TR#43 END DUMP	11	170.00	1,870.00
	HAULING TR#45 PUP	11	170.00	1,870.00
	HAULING TR#47	9	140.00	1,260.00
5/27/2022	PCS BY THE LCY	123	100.00	12,300.00
	CLAY BY THE TON	97.51	5.50	536.31T
	HAULING TR#43 END DUMP	8	170.00	1,360.00
	HAULING TR#45 PUP	8	170.00	1,360.00
			Total	



P.O. Box 68
Genesee, ID 83832
rcc@roachconstruction.biz
Phone # 208-285-1411

Invoice

DATE	INVOICE NO.
6/7/2022	13762

BILL TO
ABLE CLEAN-UP TECHNOLOGIES, INC PO BOX 6185 SPOKANE, WA 99217

P.O. NO.	TERMS
4-STAR PULLMAN	Due on receipt

DATE	DESCRIPTION	QTY	RATE	AMOUNT
5/31/2022	PCS BY THE LCY	123	100.00	12,300.00
	CLAY BY THE TON	132.46	5.50	728.53T
	HAULING TR#43 END DUMP	11	170.00	1,870.00
	HAULING TR#45 PUP	9	170.00	1,530.00
6/1/2022	PCS BY THE LCY	68	100.00	6,800.00
	CLAY BY THE TON	83.03	5.50	456.67T
	HAULING TR#43 END DUMP	10	170.00	1,700.00
6/2/2022	PCS BY THE LCY	275	100.00	27,500.00
	CLAY BY THE TON	194.17	5.50	1,067.94T
	HAULING TR#47 PUP	10	170.00	1,700.00
	HAULING TR#43 END DUMP	10.75	170.00	1,827.50
	HAULING TR#51	10	140.00	1,400.00
6/3/2022	PCS BY THE LCY	17	100.00	1,700.00
	CLAY BY THE TON	240.55	5.50	1,323.03T
	DIRTY PIT RUN BY THE TON	51.33	5.50	282.32T
	HAULING TR#47 PUP	8	170.00	1,360.00
	HAULING TR#43 END DUMP	8.5	170.00	1,445.00
	HAULING TR#51	8	140.00	1,120.00
6/6/2022	CLAY BY THE TON	154.86	5.50	851.73T
			Total	



P.O. Box 68
Genesee, ID 83832
rcc@roachconstruction.biz
Phone # 208-285-1411

Invoice

DATE	INVOICE NO.
6/7/2022	13762

BILL TO
ABLE CLEAN-UP TECHNOLOGIES, INC PO BOX 6185 SPOKANE, WA 99217

Phase 1

P.O. NO.	TERMS
4-STAR PULLMAN	Due on receipt

DATE	DESCRIPTION	QTY	RATE	AMOUNT
	DIRTY PIT RUN BY THE TON	175.92	5.50	967.56T
	CLEAN PIT RUN BY THE TON	88.03	7.00	616.21T
	HAULING TR#47 PUP	7.5	170.00	1,275.00
	HAULING TR#43 END DUMP	7	170.00	1,190.00
	HAULING TR#51	7	140.00	980.00
	HAULING TR#MISSION CREEK PUP	7.5	170.00	1,275.00
	Washington Sales Tax Whitman Co		7.90%	579.93
			Total	\$166,563.35

Invoices are due and payable upon receipt of the invoice. Unpaid invoices are subject to a minimum \$20 late fee or 1.5% monthly (18% annual) service charge, whichever is greater.

===== TRANSACTION RECORD =====

ATLAS SAND ROCK INC
4341 SNAKE RIVER AVE
LEWISTON, ID 83501
United States

TYPE: Purchase

ACCT: Visa \$ 766.18 USD

CARDHOLDER NAME : Jason Moline
CARD NUMBER : #####2091
DATE/TIME : 16 May 22 12:25:52
REFERENCE # : 001 0767469 T
AUTHOR. # : 016915
TRANS. REF. :

Approved - Thank You 100

SIGNATURE

COPY

Phase 1

ATLAS SAND & ROCK, INC.

4341 SNAKE RIVER AVE OFFICE (208) 743-5596
LEWISTON, ID 83501

Ticket: 053 - 83139

Date: 05/16/2022

Time: 10:40:38 AM

Site Location: CHIPMAN 053

Carrier ATLAS SAND & ROCK
Vehicle ATL18393 ATLAS SAND & ROCK - 18393

Customer COD ABLE CLEANUP TECHNOLOGISTS
Order 68007 NW STATE ST

Product DF-TC DUMP FEE OVERSIZE CONCRE

P.O.

Deliver

Product #	Qty	Rate	Amount
DF-TC	13.74	\$10.00	\$137.40
Order Total		Tax	\$4.95
\$285.32		Ticket Total	\$142.35

	Pounds	Net Tons	
Gross	53,480	26.74	
Tare	<u>26,000</u>	<u>13.00</u>	
Net	27,480	13.74	
	Today	Tons Ordered	Remaining
Loads	2		
Qty	27.54	5.00	-22.54

ATLAS SAND & ROCK, INC.

4341 SNAKE RIVER AVE OFFICE (208) 743-5596
LEWISTON, ID 83501

Ticket: 053 - 83143

Date: 05/16/2022

Time: 11:24:23 AM

Site Location: CHIPMAN 053

Carrier ATLAS SAND & ROCK
Vehicle ATL18393 ATLAS SAND & ROCK - 18393

Customer COD ABLE CLEANUP TECHNOLOGISTS
Order 68007 NW STATE ST

Product DF-TC DUMP FEE OVERSIZE CONCRE
98WA HAULING - WASHINGTON

P.O.

Deliver

Product #	Qty	Rate	Amount
DF-TC	15.17	\$10.00	\$151.70
98WA	2.5	\$120.00	\$300.00
Order Total		Tax	\$29.16
\$766.18		Ticket Total	\$480.86

	Pounds	Net Tons	
Gross	56,340	28.17	
Tare	<u>26,000</u>	<u>13.00</u>	
Net	30,340	15.17	
	Today	Tons Ordered	Remaining
Loads	3		
Qty	42.71	5.00000	-37.71

TRANSACTION RECORD
 ATLAS SAND ROCK INC
 4341 SNAKE RIVER AVE
 LEWISTON, ID 83501
 United States

TYPE: Purchase

ACCT: Visa \$ 1,077.89 USD

CARDHOLDER NAME : Jason Moline
 CARD NUMBER : #####2091
 DATE/TIME : 17 May 22 16:34:51
 REFERENCE # : 001 0207190 T
 AUTHOR. # : 017225
 TRANS. REF. :

Approved - Thank You 100

SIGNATURE

Please retain this copy for your records.

Cardholder will pay above amount to
 card issuer pursuant to cardholder
 agreement.

ATLAS SAND & ROCK, INC.

4341 SNAKE RIVER AVE
 LEWISTON, ID 83501

OFFICE (208) 743-5596

Ticket: 053 - 83168

Date: 05/17/2022

Time: 1:29:37 PM

Site Location: CHIPMAN

053

Carrier ATLAS SAND & ROCK
 Vehicle ATL18400 ATLAS SAND & ROCK - 18400
 Customer COD ABLE CLEANUP TECHNOLOGISTS
 Order 68134 NW STATE ST
 Product DF-TC DUMP FEE OVERSIZE CONCRE

P.O.

Deliver

Product #	Qty	Rate	Amount
DF-TC	12.50	\$10.00	\$125.00
Order Total		Tax	\$4.50
\$129.50		Ticket Total	\$129.50

	Pounds	Net Tons	
Gross	51,820	25.91	
Tare	<u>26,820</u>	<u>13.41</u>	
Net	25,000	12.50	
	Today	Tons Ordered	Remaining
Loads	1		
Qty	12.5	5.00	-7.50

ATLAS SAND & ROCK, INC.

Phase 1

4341 SNAKE RIVER AVE
LEWISTON, ID 83501

OFFICE (208) 743-5596

Ticket: 053 - 83178

Date: 05/17/2022

Time: 3:33:01 PM

Site Location: CHIPMAN

053

Carrier ATLAS SAND & ROCK
Vehicle ATL18400 ATLAS SAND & ROCK - 18400

Customer COD ABLE CLEANUP TECHNOLOGISTS
Order 68134 NW STATE ST

Product DF-TC DUMP FEE OVERSIZE CONCRE
98WA HAULING - WASHINGTON

P.O.

Deliver

Product #	Qty	Rate	Amount
DF-TC	19.72	\$10.00	\$197.20
98WA	3	\$120.00	\$360.00
Order Total		Tax	\$35.54
\$1,077.89		Ticket Total	\$592.74

Pounds		Net Tons	
Gross	66,260		33.13
Tare	26,820		13.41
Net	39,440		19.72
Today		Tons Ordered	Remaining
Loads	4		
Qty	66.55	5.00	-61.55

ATLAS SAND & ROCK, INC.

4341 SNAKE RIVER AVE
LEWISTON, ID 83501

OFFICE (208) 743-5596

Ticket: 053 - 83174

Date: 05/17/2022

Time: 2:49:44 PM

Site Location: CHIPMAN

053

Carrier ATLAS SAND & ROCK
Vehicle ATL18400 ATLAS SAND & ROCK - 18400

Customer COD ABLE CLEANUP TECHNOLOGISTS
Order 68134 NW STATE ST

Product DF-TC DUMP FEE OVERSIZE CONCRE

P.O.

Deliver

Product #	Qty	Rate	Amount
DF-TC	19.40	\$10.00	\$194.00
Order Total		Tax	\$6.98
\$485.15		Ticket Total	\$200.98

Pounds		Net Tons	
Gross	65,620		32.81
Tare	26,820		13.41
Net	38,800		19.40
Today		Tons Ordered	Remaining
Loads	3		
Qty	46.83	5.00	-41.83

ATLAS SAND & ROCK, INC.

4341 SNAKE RIVER AVE
LEWISTON, ID 83501

OFFICE (208) 743-5596

Ticket: 053 - 83169

Date: 05/17/2022

Time: 2:09:10 PM

Site Location: CHIPMAN

053

Carrier ATLAS SAND & ROCK
Vehicle ATL18400 ATLAS SAND & ROCK - 18400

Customer COD ABLE CLEANUP TECHNOLOGISTS
Order 68134 NW STATE ST

Product DF-TC DUMP FEE OVERSIZE CONCRE

P.O.

Deliver

Product #	Qty	Rate	Amount
DF-TC	14.93	\$10.00	\$149.30
Order Total		Tax	\$5.37
\$284.17		Ticket Total	\$154.67

Pounds		Net Tons	
Gross	56,680		28.34
Tare	26,820		13.41
Net	29,860		14.93
Today		Tons Ordered	Remaining
Loads	2		
Qty	27.43	5.00	-22.43

===== TRANSACTION RECORD =====

ATLAS SAND ROCK INC
4341 SNAKE RIVER AVE
LEWISTON, ID 83501
United States

TYPE: Purchase

ACCT: Visa \$ 286.33 USD

CARDHOLDER NAME : Jason Moline
CARD NUMBER : #####2091
DATE/TIME : 18 May 22 09:41:55
REFERENCE # : 001 0565039 T
AUTHOR. # : 018900
TRANS. REF. :

Approved - Thank You 100

SIGNATURE

Please retain this copy for your records.**ATLAS SAND & ROCK, INC.**

4341 SNAKE RIVER AVE OFFICE (208) 743-5596
LEWISTON, ID 83501

Ticket: 053 - 83184

Date: 05/18/2022

Time: 8:35:51 AM

Site Location: CHIPMAN

053

Carrier ATLAS SAND & ROCK
Vehicle ATL18400 ATLAS SAND & ROCK - 18400

Customer COD ABLE CLEANUP TECHNOLOGISTS
Order 68177 NW STATE ST

Product DF-TC DUMP FEE OVERSIZE CONCRE
98WA HAULING - WASHINGTON

P.O.

Deliver

Product #	Qty	Rate	Amount
DF-TC	15.14	\$10.00	\$151.40
98WA	1	\$120.00	\$120.00
<u>Order Total</u>		<u>Tax</u>	\$14.93
\$286.33		<u>Ticket Total</u>	\$286.33

	Pounds	Net Tons	
Gross	57,100	28.55	
Tare	<u>26,820</u>	<u>13.41</u>	
Net	30,280	15.14	
	<u>Today</u>	<u>Tons Ordered</u>	<u>Remaining</u>
Loads	1		
Qty	15.14	5.00000	-10.14



P.O. Box 68
Genesee, ID 83832
rcc@roachconstruction.biz
Phone # 208-285-1411

Invoice

DATE	INVOICE NO.
9/15/2022	13931

BILL TO
ABLE CLEAN-UP TECHNOLOGIES, INC PO BOX 6185 SPOKANE, WA 99217

Phase
2

P.O. NO.	TERMS
4-STAR PULLMAN	Due on receipt

DATE	DESCRIPTION	QTY	RATE	AMOUNT
	4-STAR, PULLMAN PETROLEUM CONTAMINATED SOILS CLEANUP PROGRESS BILLING 8/15-8/19			
8/15/2022	PCS BY THE LCY	96	100.00	9,600.00
	HAULING TR#45	9	170.00	1,530.00
	HAULING TR#47	8	170.00	1,360.00
8/16/2022	PCS BY THE LCY	240	100.00	24,000.00
	HAULING TR#45	9.5	170.00	1,615.00
	HAULING TR#47	6.75	170.00	1,147.50
	HAULING TR#43	9	140.00	1,260.00
	HAULING TR#48	5.25	170.00	892.50
8/17/2022	PCS BY THE LCY	468	100.00	46,800.00
	HAULING TR#45	9	170.00	1,530.00
	HAULING TR#47	10	170.00	1,700.00
	HAULING TR#43	10	140.00	1,400.00
	HAULING TR#48	6.5	140.00	910.00
8/18/2022	PCS BY THE LCY	264	100.00	26,400.00
	HAULING TR#45	11	170.00	1,870.00
	HAULING TR#47	11	170.00	1,870.00
	HAULING TR#43	11	140.00	1,540.00
			Total	



P.O. Box 68
Genesee, ID 83832
rcc@roachconstruction.biz
Phone # 208-285-1411

Invoice

DATE	INVOICE NO.
9/15/2022	13931

BILL TO
ABLE CLEAN-UP TECHNOLOGIES, INC PO BOX 6185 SPOKANE, WA 99217

P.O. NO.	TERMS
4-STAR PULLMAN	Due on receipt

DATE	DESCRIPTION	QTY	RATE	AMOUNT
8/19/2022	PIT RUN BY THE TON	129.44	5.50	711.92
	PCS BY THE LCY	402	100.00	40,200.00
	HAULING TR#45	11	170.00	1,870.00
	HAULING TR#47	10	170.00	1,700.00
	HAULING TR#43	12	140.00	1,680.00
	HAULING TR#48	8	140.00	1,120.00
	PIT ROCK BY THE TON	91.71	5.50	504.41
			Total	\$173,211.33

Invoices are due and payable upon receipt of the invoice. Unpaid invoices are subject to a minimum \$20 late fee or 1.5% monthly (18% annual) service charge, whichever is greater.



P.O. Box 68
Genesee, ID 83832
rcc@roachconstruction.biz
Phone # 208-285-1411

Invoice

DATE	INVOICE NO.
9/15/2022	13932

BILL TO
ABLE CLEAN-UP TECHNOLOGIES, INC PO BOX 6185 SPOKANE, WA 99217

P.O. NO.	TERMS
4-STAR PULLMAN	Due on receipt

DATE	DESCRIPTION	QTY	RATE	AMOUNT
	4-STAR, PULLMAN PETROLEUM CONTAMINATED SOILS CLEANUP PROGRESS BILLING 8/22-8/26			
8/22/2022	PCS BY THE LCY	354	100.00	35,400.00
	HAULING TR#45	9	170.00	1,530.00
	HAULING TR#47	10	170.00	1,700.00
	HAULING TR#43	9	140.00	1,260.00
	HAULING TR#48	5.5	170.00	935.00
8/23/2022	PCS BY THE LCY	348	100.00	34,800.00
	HAULING TR#45	9	170.00	1,530.00
	HAULING TR#47	9	170.00	1,530.00
	HAULING TR#43	10	140.00	1,400.00
8/24/2022	PCS BY THE LCY	330	100.00	33,000.00
	HAULING TR#45	9	170.00	1,530.00
	HAULING TR#47	9	170.00	1,530.00
	HAULING TR#43	9	140.00	1,260.00
	HAULING TR#48	9	140.00	1,260.00
8/25/2022	PCS BY THE LCY	415	100.00	41,500.00
	HAULING TR#45	9	170.00	1,530.00
	HAULING TR#47	9	170.00	1,530.00
			Total	



P.O. Box 68
Genesee, ID 83832
rcc@roachconstruction.biz
Phone # 208-285-1411

Invoice

DATE	INVOICE NO.
9/15/2022	13932

BILL TO
ABLE CLEAN-UP TECHNOLOGIES, INC PO BOX 6185 SPOKANE, WA 99217

P.O. NO.	TERMS
4-STAR PULLMAN	Due on receipt

DATE	DESCRIPTION	QTY	RATE	AMOUNT
8/26/2022	HAULING TR#43	9	140.00	1,260.00
	HAULING TR#48	9	140.00	1,260.00
	PCS BY THE LCY	83	100.00	8,300.00
	HAULING TR#45	9	140.00	1,260.00
	HAULING TR#47	9	140.00	1,260.00
	HAULING TR#43	9	140.00	1,260.00
	HAULING TR#48	9	140.00	1,260.00
	PIT RUN BY THE TON	299.51	5.50	1,647.31
			Total	\$180,732.31

Invoices are due and payable upon receipt of the invoice. Unpaid invoices are subject to a minimum \$20 late fee or 1.5% monthly (18% annual) service charge, whichever is greater.



P.O. Box 68
Genesee, ID 83832
rcc@roachconstruction.biz
Phone # 208-285-1411

Invoice

DATE	INVOICE NO.
9/15/2022	13958

BILL TO
ABLE CLEAN-UP TECHNOLOGIES, INC PO BOX 6185 SPOKANE, WA 99217

P.O. NO.	TERMS
4-STAR PULLMAN	Due on receipt

DATE	DESCRIPTION	QTY	RATE	AMOUNT
	4-STAR, PULLMAN PETROLEUM CONTAMINATED SOILS CLEANUP PROGRESS BILLING 8/29-9/1			
8/29/2022	HAULING TR#45	9.5	140.00	1,330.00
	HAULING TR#47	9.5	140.00	1,330.00
	PIT RUN BY THE TON	88.75	5.50	488.13
8/30/2022	HAULING TR#45	9.5	140.00	1,330.00
	HAULING TR#47	9.5	140.00	1,330.00
	PIT RUN BY THE TON	141.66	5.50	779.13
8/31/2022	HAULING TR#45	9.5	140.00	1,330.00
	HAULING TR#47	9.5	140.00	1,330.00
	PIT RUN BY THE TON	104.62	5.50	575.41
9/1/2022	HAULING TR#45	2	140.00	280.00
	HAULING TR#47	2	140.00	280.00
	PIT RUN BY THE TON	34.1	5.50	187.55
			Total	\$10,570.22

Invoices are due and payable upon receipt of the invoice. Unpaid invoices are subject to a minimum \$20 late fee or 1.5% monthly (18% annual) service charge, whichever is greater.



INVOICE

CUSTOMER NO.	DATE	INVOICE NO.	PAGE
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ABLCLE

08/29/2022

565815

1

ABLE CLEAN-UP TECHNOLOGIES
5308 N MYRTLE STREET
SPOKANE, WA 99217

Phase 2

Lewiston, ID 83501 Pullman, WA 99163
(208) 743-5596 (509) 332-7004

Ferdinand, ID 83526
(208) 962-5989

DATE	JOB NUMBER - JOB LOCATION - ADDRESS				UNIT PRICE	TAX	TOTAL
	TICKET NO.	QUANTITY	U/M	DESCRIPTION			
	000011	4	STAR SUPPLY	PULLMAN			
08/29	054-61775	17.20	TN PIT RUN /	WHITEHEAD	7.750		133.30
08/29	054-61776	15.56	TN PIT RUN /	WHITEHEAD	7.750		120.59
08/29	054-61777	17.38	TN PIT RUN /	WHITEHEAD	7.750		134.70
08/29	054-61778	19.84	TN PIT RUN /	WHITEHEAD	7.750		153.76
08/29	054-61779	17.35	TN PIT RUN /	WHITEHEAD	7.750		134.46
08/29	054-61780	16.86	TN PIT RUN /	WHITEHEAD	7.750		130.67
08/29	054-61781	12.90	TN PIT RUN /	WHITEHEAD	7.750		99.98
08/29	054-61783	15.01	TN PIT RUN /	WHITEHEAD	7.750		116.33
08/29	054-61784	16.41	TN PIT RUN /	WHITEHEAD	7.750		127.18
08/29	054-61785	13.87	TN PIT RUN /	WHITEHEAD	7.750		107.49
08/29	054-61786	16.12	TN PIT RUN /	WHITEHEAD	7.750		124.93
08/29	054-61787	16.42	TN PIT RUN /	WHITEHEAD	7.750		127.26
08/29	054-61788	16.16	TN PIT RUN /	WHITEHEAD	7.750		125.24
08/29	054-61789	12.84	TN PIT RUN /	WHITEHEAD	7.750		99.51
08/29	054-61790	16.10	TN PIT RUN /	WHITEHEAD	7.750		124.81
08/29	054-61791	15.74	TN PIT RUN /	WHITEHEAD	7.750		121.99
08/29	054-61792	17.74	TN PIT RUN /	WHITEHEAD	7.750		137.49
08/29	054-61793	14.73	TN PIT RUN /	WHITEHEAD	7.750		114.16
08/29	054-61794	16.58	TN PIT RUN /	WHITEHEAD	7.750		128.50
08/29	054-61795	10.07	TN PIT RUN /	WHITEHEAD	7.750		78.04
08/29	054-61796	12.61	TN PIT RUN /	WHITEHEAD	7.750		97.73
08/29	054-61797	14.52	TN PIT RUN /	WHITEHEAD	7.750		112.53
08/29	054-61798	11.81	TN PIT RUN /	WHITEHEAD	7.750		91.53
08/29	054-61799	14.73	TN PIT RUN /	WHITEHEAD	7.750		114.16
08/29	054-61800	15.13	TN PIT RUN /	WHITEHEAD	7.750		117.26
08/29	054-61801	15.28	TN PIT RUN /	WHITEHEAD	7.750		118.42
08/29	054-61802	14.26	TN PIT RUN /	WHITEHEAD	7.750		110.52
08/29	054-61803	12.18	TN PIT RUN /	WHITEHEAD	7.750		94.40
08/29	054-61804	14.62	TN PIT RUN /	WHITEHEAD	7.750		113.31
08/29	054-61805	12.39	TN PIT RUN /	WHITEHEAD	7.750		96.02
08/29	054-61806	13.83	TN PIT RUN /	WHITEHEAD	7.750		107.18
08/29	054-61807	15.79	TN PIT RUN /	WHITEHEAD	7.750		122.37
08/29	054-61808	11.60	TN PIT RUN /	WHITEHEAD	7.750		89.90
08/29	054-61809	16.49	TN PIT RUN /	WHITEHEAD	7.750		127.80
08/29	054-61810	16.73	TN PIT RUN /	WHITEHEAD	7.750		129.66
08/29	054-61811	14.52	TN PIT RUN /	WHITEHEAD	7.750		112.53
08/29	054-61812	16.98	TN PIT RUN /	WHITEHEAD	7.750		131.60
08/29	054-61813	12.71	TN PIT RUN /	WHITEHEAD	7.750		98.50

AMOUNT DUE

Accounts Receivable (208) 413-7330

Payment Terms: Net 10th, Late Fees = 1.5% per month \$5.00 Minimum

Remit To: Atlas Sand & Rock - 4341 Snake River Ave, Lewiston, ID 83501



INVOICE

CUSTOMER NO.	DATE	INVOICE NO.	PAGE
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ABLCLE

08/29/2022

565815

2

ABLE CLEAN-UP TECHNOLOGIES
5308 N MYRTLE STREET
SPOKANE, WA 99217

Phase 2

Lewiston, ID 83501 Pullman, WA 99163
(208) 743-5596 (509) 332-7004

Ferdinand, ID 83526
(208) 962-5989

DATE	JOB NUMBER - JOB LOCATION - ADDRESS				UNIT PRICE	TAX	TOTAL
	TICKET NO.	QUANTITY	U/M	DESCRIPTION			
08/29	054-61814	12.18	TN	PIT RUN / WHITEHEAD	7.750		94.40
08/29	054-61815	14.96	TN	PIT RUN / WHITEHEAD	7.750		115.94
08/29	054-61816	16.96	TN	PIT RUN / WHITEHEAD	7.750		131.44
08/29	054-61817	17.21	TN	PIT RUN / WHITEHEAD	7.750		133.38
08/29	054-61818	16.07	TN	PIT RUN / WHITEHEAD	7.750		124.54
08/29	054-61819	11.68	TN	PIT RUN / WHITEHEAD	7.750		90.52
08/29	054-61820	16.74	TN	PIT RUN / WHITEHEAD	7.750		129.74
08/29	054-61821	16.54	TN	PIT RUN / WHITEHEAD	7.750		128.19
08/29	054-61822	16.93	TN	PIT RUN / WHITEHEAD	7.750		131.21
08/29	054-61823	15.89	TN	PIT RUN / WHITEHEAD	7.750		123.15
08/29	054-61824	17.66	TN	PIT RUN / WHITEHEAD	7.750		136.87
08/29	054-61825	15.58	TN	PIT RUN / WHITEHEAD	7.750		120.75
08/29	054-61826	13.91	TN	PIT RUN / WHITEHEAD	7.750		107.80
08/29	054-61827	14.70	TN	PIT RUN / WHITEHEAD	7.750		113.93
08/29	054-61828	16.76	TN	PIT RUN / WHITEHEAD	7.750		129.89
08/29	054-61829	15.66	TN	PIT RUN / WHITEHEAD	7.750		121.37
08/29	054-61830	18.03	TN	PIT RUN / WHITEHEAD	7.750		139.73
08/29	054-61831	15.89	TN	PIT RUN / WHITEHEAD	7.750		123.15
08/29	054-61832	14.36	TN	PIT RUN / WHITEHEAD	7.750		111.29
08/29	054-61833	14.31	TN	PIT RUN / WHITEHEAD	7.750		110.90
08/29	054-61834	15.61	TN	PIT RUN / WHITEHEAD	7.750		120.98
08/29	054-61835	16.64	TN	PIT RUN / WHITEHEAD	7.750		128.96
08/29	054-61836	18.06	TN	PIT RUN / WHITEHEAD	7.750		139.97
08/29	054-61837	16.94	TN	PIT RUN / WHITEHEAD	7.750		131.29
08/29	054-61839	14.19	TN	PIT RUN / WHITEHEAD	7.750		109.97
08/29	054-61839	20.50	HR	HAULING - WASHINGTON	135.000		2767.50
JOB TOTAL LINE							10242.67

PRODUCT RECAP

964.52 A27F
20.50 98WA

PIT RUN / WHITEHEAD
HAULING - WASHINGTON

AMOUNT DUE

10242.67

Accounts Receivable (208) 413-7330

Payment Terms: Net 10th, Late Fees = 1.5% per month \$5.00 Minimum

Remit To: Atlas Sand & Rock - 4341 Snake River Ave, Lewiston, ID 83501



INVOICE

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ABLCLE

08/30/2022

565816

1

ABLE CLEAN-UP TECHNOLOGIES
5308 N MYRTLE STREET
SPOKANE, WA 99217

Lewiston, ID 83501 Pullman, WA 99163
(208) 743-5596 (509) 332-7004

Ferdinand, ID 83526
(208) 962-5989

Phase 2

DATE	JOB NUMBER - JOB LOCATION - ADDRESS				UNIT PRICE	TAX	TOTAL
	TICKET NO.	QUANTITY	U/M	DESCRIPTION			
	000011	4	STAR SUPPLY	PULLMAN			
08/30	054-61842	14.57	TN PIT RUN /	WHITEHEAD	7.750		112.92
08/30	054-61843	12.60	TN PIT RUN /	WHITEHEAD	7.750		97.65
08/30	054-61844	13.22	TN PIT RUN /	WHITEHEAD	7.750		102.46
08/30	054-61845	16.99	TN PIT RUN /	WHITEHEAD	7.750		131.67
08/30	054-61846	16.26	TN PIT RUN /	WHITEHEAD	7.750		126.02
08/30	054-61847	14.12	TN PIT RUN /	WHITEHEAD	7.750		109.43
08/30	054-61848	13.10	TN PIT RUN /	WHITEHEAD	7.750		101.53
08/30	054-61849	16.63	TN PIT RUN /	WHITEHEAD	7.750		128.88
08/30	054-61850	14.27	TN PIT RUN /	WHITEHEAD	7.750		110.59
08/30	054-61851	14.02	TN PIT RUN /	WHITEHEAD	7.750		108.66
08/30	054-61852	15.93	TN PIT RUN /	WHITEHEAD	7.750		123.46
08/30	054-61853	13.52	TN PIT RUN /	WHITEHEAD	7.750		104.78
08/30	054-61854	15.83	TN PIT RUN /	WHITEHEAD	7.750		122.68
08/30	054-61855	14.51	TN PIT RUN /	WHITEHEAD	7.750		112.45
08/30	054-61856	16.50	TN PIT RUN /	WHITEHEAD	7.750		127.88
08/30	054-61857	14.23	TN PIT RUN /	WHITEHEAD	7.750		110.28
08/30	054-61858	14.75	TN PIT RUN /	WHITEHEAD	7.750		114.31
08/30	054-61859	16.00	TN PIT RUN /	WHITEHEAD	7.750		124.00
08/30	054-61860	13.73	TN PIT RUN /	WHITEHEAD	7.750		106.41
08/30	054-61861	15.59	TN PIT RUN /	WHITEHEAD	7.750		120.82
08/30	054-61862	16.82	TN PIT RUN /	WHITEHEAD	7.750		130.36
08/30	054-61863	14.62	TN PIT RUN /	WHITEHEAD	7.750		113.31
08/30	054-61864	16.30	TN PIT RUN /	WHITEHEAD	7.750		126.33
08/30	054-61865	15.50	TN PIT RUN /	WHITEHEAD	7.750		120.13
08/30	054-61866	13.95	TN PIT RUN /	WHITEHEAD	7.750		108.11
08/30	054-61867	15.42	TN PIT RUN /	WHITEHEAD	7.750		119.51
08/30	054-61868	17.53	TN PIT RUN /	WHITEHEAD	7.750		135.86
08/30	054-61869	15.45	TN PIT RUN /	WHITEHEAD	7.750		119.74
08/30	054-61870	12.65	TN PIT RUN /	WHITEHEAD	7.750		98.04
08/30	054-61871	17.51	TN PIT RUN /	WHITEHEAD	7.750		135.70
08/30	054-61871	12.25	HR HAULING -	WASHINGTON	135.000		1653.75
			JOB TOTAL LINE				5157.72
PRODUCT RECAP							
		452.12	A27F	PIT RUN /	WHITEHEAD		
		12.25	98WA	HAULING -	WASHINGTON		
AMOUNT DUE						5157.72	

Accounts Receivable (208) 413-7330

Payment Terms: Net 10th, Late Fees = 1.5% per month \$5.00 Minimum

Remit To: Atlas Sand & Rock - 4341 Snake River Ave, Lewiston, ID 83501



INVOICE

CUSTOMER NO.	DATE	INVOICE NO.	PAGE
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ABLCLE

08/31/2022

565882

1

ABLE CLEAN-UP TECHNOLOGIES
5308 N MYRTLE STREET
SPOKANE, WA 99217

Lewiston, ID 83501 Pullman, WA 99163
(208) 743-5596 (509) 332-7004

Ferdinand, ID 83526
(208) 962-5989

Phase 2

DATE	JOB NUMBER - JOB LOCATION - ADDRESS				UNIT PRICE	TAX	TOTAL
	TICKET NO.	QUANTITY	U/M	DESCRIPTION			
	000011	4	STAR SUPPLY				
							PULLMAN
08/31	054-61879	18.95	TN 3"-0	/ WHITEHEAD	8.250		156.34
08/31	054-61880	14.71	TN 3"-0	/ WHITEHEAD	8.250		121.36
08/31	054-61881	16.39	TN 3"-0	/ WHITEHEAD	8.250		135.22
08/31	054-61882	18.25	TN 3"-0	/ WHITEHEAD	8.250		150.56
08/31	054-61883	17.41	TN 3"-0	/ WHITEHEAD	8.250		143.63
08/31	054-61885	16.14	TN 3"-0	/ WHITEHEAD	8.250		133.16
08/31	054-61886	17.29	TN 3"-0	/ WHITEHEAD	8.250		142.64
08/31	054-61888	15.83	TN 3"-0	/ WHITEHEAD	8.250		130.60
08/31	054-61889	15.87	TN 3"-0	/ WHITEHEAD	8.250		130.93
08/31	054-61890	16.06	TN 3"-0	/ WHITEHEAD	8.250		132.50
08/31	054-61891	17.92	TN 3"-0	/ WHITEHEAD	8.250		147.84
08/31	054-61892	16.23	TN 3"-0	/ WHITEHEAD	8.250		133.90
08/31	054-61893	16.14	TN 3"-0	/ WHITEHEAD	8.250		133.16
08/31	054-61895	15.72	TN 3"-0	/ WHITEHEAD	8.250		129.69
08/31	054-61896	17.67	TN 3"-0	/ WHITEHEAD	8.250		145.78
08/31	054-61897	14.59	TN 3"-0	/ WHITEHEAD	8.250		120.37
08/31	054-61898	15.75	TN 3"-0	/ WHITEHEAD	8.250		129.94
08/31	054-61899	16.22	TN 3"-0	/ WHITEHEAD	8.250		133.82
08/31	054-61900	17.16	TN 3"-0	/ WHITEHEAD	8.250		141.57
08/31	054-61902	15.14	TN 3"-0	/ WHITEHEAD	8.250		124.91
08/31	054-61904	16.12	TN 3"-0	/ WHITEHEAD	8.250		132.99
08/31	054-61905	16.73	TN 3"-0	/ WHITEHEAD	8.250		138.02
08/31	054-61906	16.77	TN 3"-0	/ WHITEHEAD	8.250		138.35
08/31	054-61907	15.67	TN 3"-0	/ WHITEHEAD	8.250		129.28
08/31	054-61908	17.12	TN 3"-0	/ WHITEHEAD	8.250		141.24
08/31	054-61909	15.40	TN 3"-0	/ WHITEHEAD	8.250		127.05
08/31	054-61910	15.36	TN 3"-0	/ WHITEHEAD	8.250		126.72
08/31	054-61911	17.95	TN 3"-0	/ WHITEHEAD	8.250		148.09
08/31	054-61912	15.34	TN 3"-0	/ WHITEHEAD	8.250		126.56
08/31	054-61913	15.80	TN 3"-0	/ WHITEHEAD	8.250		130.35
08/31	054-61914	16.81	TN 3"-0	/ WHITEHEAD	8.250		138.68
08/31	054-61916	15.74	TN 3"-0	/ WHITEHEAD	8.250		129.86
08/31	054-61917	16.30	TN 3"-0	/ WHITEHEAD	8.250		134.48
08/31	054-61918	16.79	TN 3"-0	/ WHITEHEAD	8.250		138.52
08/31	054-61919	15.75	TN 3"-0	/ WHITEHEAD	8.250		129.94
08/31	054-61920	16.46	TN 3"-0	/ WHITEHEAD	8.250		135.80
08/31	054-61921	18.27	TN 5/8"-0	/ WHITEHEAD	8.750		159.86
08/31	054-61923	16.02	TN 5/8"-0	/ WHITEHEAD	8.750		140.18
AMOUNT DUE							

Accounts Receivable (208) 413-7330

Payment Terms: Net 10th, Late Fees = 1.5% per month \$5.00 Minimum

Remit To: Atlas Sand & Rock - 4341 Snake River Ave, Lewiston, ID 83501



INVOICE

CUSTOMER NO.	DATE	INVOICE NO.	PAGE
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ABLCLE

08/31/2022

565882

2

ABLE CLEAN-UP TECHNOLOGIES
5308 N MYRTLE STREET
SPOKANE, WA 99217

Phase 2

Lewiston, ID 83501 Pullman, WA 99163
(208) 743-5596 (509) 332-7004

Ferdinand, ID 83526
(208) 962-5989

DATE	JOB NUMBER - JOB LOCATION - ADDRESS				UNIT PRICE	TAX	TOTAL
	TICKET NO.	QUANTITY	U/M	DESCRIPTION			
08/31	054-61925	16.13	TN	3"-0 / WHITEHEAD	8.250		133.07
08/31	054-61926	20.53	TN	3"-0 / WHITEHEAD	8.250		169.37
08/31	054-61928	17.28	TN	5/8"-0 / WHITEHEAD	8.750		151.20
08/31	054-61930	15.37	TN	5/8"-0 / WHITEHEAD	8.750		134.49
08/31	054-61931	17.06	TN	5/8"-0 / WHITEHEAD	8.750		149.28
08/31	054-61934	15.40	TN	5/8"-0 / WHITEHEAD	8.750		134.75
08/31	054-61935	16.38	TN	5/8"-0 / WHITEHEAD	8.750		143.33
08/31	054-61936	15.02	TN	5/8"-0 / WHITEHEAD	8.750		131.43
08/31	054-61938	15.08	TN	5/8"-0 / WHITEHEAD	8.750		131.95
08/31	054-61939	16.72	TN	5/8"-0 / WHITEHEAD	8.750		146.30
08/31	054-61941	15.47	TN	5/8"-0 / WHITEHEAD	8.750		135.36
08/31	054-61943	19.98	TN	5/8"-0 / WHITEHEAD	8.750		174.83
08/31	054-61944	18.86	TN	5/8"-0 / WHITEHEAD	8.750		165.03
08/31	054-61945	17.20	TN	5/8"-0 / WHITEHEAD	8.750		150.50
08/31	054-61946	15.39	TN	5/8"-0 / WHITEHEAD	8.750		134.66
08/31	054-61947	16.18	TN	5/8"-0 / WHITEHEAD	8.750		141.58
08/31	054-61948	18.28	TN	5/8"-0 / WHITEHEAD	8.750		159.95
08/31	054-61949	17.70	TN	5/8"-0 / WHITEHEAD	8.750		154.88
08/31	054-61950	16.45	TN	5/8"-0 / WHITEHEAD	8.750		143.94
08/31	054-61950	18.00	HR	HAULING - WASHINGTON	135.000		2430.00
08/31	054-61951	16.67	TN	5/8"-0 / WHITEHEAD	8.750		145.86
JOB TOTAL LINE							10525.65

PRODUCT RECAP

334.78	A20	5/8"-0 / WHITEHEAD
626.21	A25A	3"-0 / WHITEHEAD
18.00	98WA	HAULING - WASHINGTON

AMOUNT DUE

10525.65

Accounts Receivable (208) 413-7330

Payment Terms: Net 10th, Late Fees = 1.5% per month \$5.00 Minimum
Remit To: Atlas Sand & Rock - 4341 Snake River Ave, Lewiston, ID 83501

INVOICE

CUSTOMER NO.	DATE	INVOICE NO.	PAGE
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ABLCLE

09/01/2022

565975

1

ABLE CLEAN-UP TECHNOLOGIES
5308 N MYRTLE STREET
SPOKANE, WA 99217

Lewiston, ID 83501 Pullman, WA 99163
(208) 743-5596 (509) 332-7004

Ferdinand, ID 83526
(208) 962-5989

Phase 2

DATE	JOB NUMBER - JOB LOCATION - ADDRESS				UNIT PRICE	TAX	TOTAL
	TICKET NO.	QUANTITY	U/M	DESCRIPTION			
000011 4 STAR SUPPLY PULLMAN							
09/01	054-61957	17.38	TN 5/8"-0 /	WHITEHEAD	8.750		152.08
09/01	054-61958	13.62	TN 5/8"-0 /	WHITEHEAD	8.750		119.18
JOB TOTAL LINE							271.26
PRODUCT RECAP							
		31.00	A20	5/8"-0 /	WHITEHEAD		

Accounts Receivable (208) 413-7330

Payment Terms: Net 10th, Late Fees = 1.5% per month \$5.00 Minimum

Remit To: Atlas Sand & Rock - 4341 Snake River Ave, Lewiston, ID 83501



APPENDIX J

Laboratory Analytical Results

ANALYTICAL REPORT

Eurofins Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

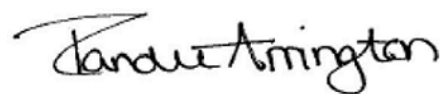
Laboratory Job ID: 590-17521-1

Laboratory Sample Delivery Group: Four Star
Client Project/Site: 223516.00/Four Star

For:

Fulcrum Environmental
207 West Boone Avenue
Spokane, Washington 99201

Attn: Scott Groat



Authorized for release by:
5/18/2022 3:42:45 PM

Randee Arrington, Lab Director
(509)924-9200
Randee.Arrington@et.eurofinsus.com

LINKS

Review your project
results through



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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Job ID: 590-17521-1

Laboratory: Eurofins Spokane

Narrative

Receipt

The samples were received on 5/16/2022 2:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.2° C.

GC/MS VOA

Method 8260D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 590-36146 and analytical batch 590-36144 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: Surrogate recovery for the following sample was outside control limits: FS-051322-05 (590-17521-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method NWTPH-Dx: Surrogate recovery for the following sample was outside control limits: FS-051322-05 (590-17521-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6010D: The post digestion spike % recovery for Lead associated with batch 590-36151 was below the lower control limit. The associated sample is: (590-17521-A-1-A PDS).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-17521-1	FS-051322-01	Solid	05/13/22 15:00	05/16/22 14:55
590-17521-2	FS-051322-02	Solid	05/13/22 15:15	05/16/22 14:55
590-17521-3	FS-051322-03	Solid	05/13/22 15:30	05/16/22 14:55
590-17521-4	FS-051322-04	Solid	05/13/22 15:45	05/16/22 14:55
590-17521-5	FS-051322-05	Solid	05/13/22 16:00	05/16/22 14:55

Definitions/Glossary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-01

Lab Sample ID: 590-17521-1

Date Collected: 05/13/22 15:00

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 80.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.027		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1
Ethylbenzene	ND		0.14		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1
m,p-Xylene	ND		0.54		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1
o-Xylene	ND		0.27		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1
Toluene	ND		0.14		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1
Xylenes, Total	ND		0.81		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129	05/17/22 11:33	05/17/22 12:56	1
4-Bromofluorobenzene (Surr)	104		76 - 122	05/17/22 11:33	05/17/22 12:56	1
Dibromofluoromethane (Surr)	94		80 - 120	05/17/22 11:33	05/17/22 12:56	1
Toluene-d8 (Surr)	111		80 - 120	05/17/22 11:33	05/17/22 12:56	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.8		mg/Kg	☆	05/17/22 11:33	05/17/22 12:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		41.5 - 162	05/17/22 11:33	05/17/22 12:56	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	38		12		mg/Kg	☆	05/17/22 12:50	05/17/22 19:45	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	☆	05/17/22 12:50	05/17/22 19:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	92		50 - 150	05/17/22 12:50	05/17/22 19:45	1
n-Triacontane-d62	97		50 - 150	05/17/22 12:50	05/17/22 19:45	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	24		13		mg/Kg	☆	05/17/22 10:24	05/17/22 14:22	5

Client Sample ID: FS-051322-02

Lab Sample ID: 590-17521-2

Date Collected: 05/13/22 15:15

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 80.7

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	F1 F2	0.030		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1
Ethylbenzene	ND	F1 F2	0.15		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1
m,p-Xylene	ND	F1	0.59		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1
o-Xylene	ND	F1 F2	0.30		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1
Toluene	ND	F1	0.15		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1
Xylenes, Total	ND		0.89		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129	05/17/22 11:33	05/17/22 13:40	1
4-Bromofluorobenzene (Surr)	104		76 - 122	05/17/22 11:33	05/17/22 13:40	1
Dibromofluoromethane (Surr)	88		80 - 120	05/17/22 11:33	05/17/22 13:40	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-02

Lab Sample ID: 590-17521-2

Date Collected: 05/13/22 15:15

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 80.7

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		80 - 120	05/17/22 11:33	05/17/22 13:40	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.4		mg/Kg	☆	05/17/22 11:33	05/17/22 13:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		41.5 - 162	05/17/22 11:33	05/17/22 13:40	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		12		mg/Kg	☆	05/17/22 12:50	05/17/22 20:26	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	☆	05/17/22 12:50	05/17/22 20:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	87		50 - 150	05/17/22 12:50	05/17/22 20:26	1
n-Triacontane-d62	94		50 - 150	05/17/22 12:50	05/17/22 20:26	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	19		13		mg/Kg	☆	05/17/22 10:24	05/17/22 14:41	5

Client Sample ID: FS-051322-03

Lab Sample ID: 590-17521-3

Date Collected: 05/13/22 15:30

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 80.3

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.030		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1
Ethylbenzene	ND		0.15		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1
m,p-Xylene	ND		0.59		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1
o-Xylene	ND		0.30		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1
Toluene	ND		0.15		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1
Xylenes, Total	ND		0.89		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 129	05/17/22 11:33	05/17/22 14:45	1
4-Bromofluorobenzene (Surr)	104		76 - 122	05/17/22 11:33	05/17/22 14:45	1
Dibromofluoromethane (Surr)	101		80 - 120	05/17/22 11:33	05/17/22 14:45	1
Toluene-d8 (Surr)	101		80 - 120	05/17/22 11:33	05/17/22 14:45	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.4		mg/Kg	☆	05/17/22 11:33	05/17/22 14:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		41.5 - 162	05/17/22 11:33	05/17/22 14:45	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-03

Lab Sample ID: 590-17521-3

Date Collected: 05/13/22 15:30

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 80.3

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		12		mg/Kg	☆	05/17/22 12:50	05/17/22 20:47	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	☆	05/17/22 12:50	05/17/22 20:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	95		50 - 150				05/17/22 12:50	05/17/22 20:47	1
<i>n</i> -Triacontane-d62	103		50 - 150				05/17/22 12:50	05/17/22 20:47	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	160		14		mg/Kg	☆	05/17/22 10:24	05/17/22 14:57	5

Client Sample ID: FS-051322-04

Lab Sample ID: 590-17521-4

Date Collected: 05/13/22 15:45

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 82.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.034		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
Ethylbenzene	ND		0.17		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
m,p-Xylene	ND		0.68		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
<i>o</i> -Xylene	ND		0.34		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
Toluene	ND		0.17		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
Xylenes, Total	ND		1.0		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129				05/17/22 11:33	05/17/22 15:29	1
4-Bromofluorobenzene (Surr)	102		76 - 122				05/17/22 11:33	05/17/22 15:29	1
Dibromofluoromethane (Surr)	94		80 - 120				05/17/22 11:33	05/17/22 15:29	1
Toluene-d8 (Surr)	106		80 - 120				05/17/22 11:33	05/17/22 15:29	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		8.5		mg/Kg	☆	05/17/22 11:33	05/17/22 15:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		41.5 - 162				05/17/22 11:33	05/17/22 15:29	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	34		12		mg/Kg	☆	05/17/22 12:50	05/17/22 21:07	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	☆	05/17/22 12:50	05/17/22 21:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	97		50 - 150				05/17/22 12:50	05/17/22 21:07	1
<i>n</i> -Triacontane-d62	99		50 - 150				05/17/22 12:50	05/17/22 21:07	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	16		12		mg/Kg	☆	05/17/22 10:24	05/17/22 15:01	5

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-05

Lab Sample ID: 590-17521-5

Date Collected: 05/13/22 16:00

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 84.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.036		mg/Kg	☆	05/17/22 11:33	05/17/22 15:51	1
Ethylbenzene	0.83		0.18		mg/Kg	☆	05/17/22 11:33	05/17/22 15:51	1
m,p-Xylene	3.8		0.72		mg/Kg	☆	05/17/22 11:33	05/17/22 15:51	1
o-Xylene	4.6		0.36		mg/Kg	☆	05/17/22 11:33	05/17/22 15:51	1
Toluene	0.49		0.18		mg/Kg	☆	05/17/22 11:33	05/17/22 15:51	1
Xylenes, Total	8.4		1.1		mg/Kg	☆	05/17/22 11:33	05/17/22 15:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 129	05/17/22 11:33	05/17/22 15:51	1
4-Bromofluorobenzene (Surr)	165	S1+	76 - 122	05/17/22 11:33	05/17/22 15:51	1
Dibromofluoromethane (Surr)	96		80 - 120	05/17/22 11:33	05/17/22 15:51	1
Toluene-d8 (Surr)	90		80 - 120	05/17/22 11:33	05/17/22 15:51	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	5200		900		mg/Kg	☆	05/17/22 11:33	05/17/22 17:18	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		41.5 - 162	05/17/22 11:33	05/17/22 17:18	100

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	3700		110		mg/Kg	☆	05/17/22 12:50	05/17/22 21:28	10
Residual Range Organics (RRO) (C25-C36)	ND		280		mg/Kg	☆	05/17/22 12:50	05/17/22 21:28	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	207	S1+	50 - 150	05/17/22 12:50	05/17/22 21:28	10
n-Triacontane-d62	100		50 - 150	05/17/22 12:50	05/17/22 21:28	10

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		12		mg/Kg	☆	05/17/22 10:24	05/17/22 15:05	5

QC Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-36146/1-A

Matrix: Solid

Analysis Batch: 36144

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36146

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020		mg/Kg		05/17/22 11:33	05/17/22 11:50	1
Ethylbenzene	ND		0.10		mg/Kg		05/17/22 11:33	05/17/22 11:50	1
m,p-Xylene	ND		0.40		mg/Kg		05/17/22 11:33	05/17/22 11:50	1
o-Xylene	ND		0.20		mg/Kg		05/17/22 11:33	05/17/22 11:50	1
Toluene	ND		0.10		mg/Kg		05/17/22 11:33	05/17/22 11:50	1
Xylenes, Total	ND		0.60		mg/Kg		05/17/22 11:33	05/17/22 11:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 129	05/17/22 11:33	05/17/22 11:50	1
4-Bromofluorobenzene (Surr)	103		76 - 122	05/17/22 11:33	05/17/22 11:50	1
Dibromofluoromethane (Surr)	91		80 - 120	05/17/22 11:33	05/17/22 11:50	1
Toluene-d8 (Surr)	106		80 - 120	05/17/22 11:33	05/17/22 11:50	1

Lab Sample ID: LCS 590-36146/2-A

Matrix: Solid

Analysis Batch: 36144

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36146

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.500	0.482		mg/Kg		96	76 - 139
Ethylbenzene	0.500	0.491		mg/Kg		98	77 - 135
m,p-Xylene	0.500	0.476		mg/Kg		95	78 - 130
o-Xylene	0.500	0.488		mg/Kg		98	77 - 129
Toluene	0.500	0.530		mg/Kg		106	77 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		75 - 129
4-Bromofluorobenzene (Surr)	103		76 - 122
Dibromofluoromethane (Surr)	94		80 - 120
Toluene-d8 (Surr)	105		80 - 120

Lab Sample ID: 590-17521-2 MS

Matrix: Solid

Analysis Batch: 36144

Client Sample ID: FS-051322-02

Prep Type: Total/NA

Prep Batch: 36146

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	ND	F1 F2	0.739	0.465	F1	mg/Kg	⊛	63	76 - 139
Ethylbenzene	ND	F1 F2	0.739	0.459	F1	mg/Kg	⊛	62	77 - 135
m,p-Xylene	ND	F1	0.739	ND	F1	mg/Kg	⊛	61	78 - 130
o-Xylene	ND	F1 F2	0.739	0.485	F1	mg/Kg	⊛	61	77 - 129
Toluene	ND	F1	0.739	0.552	F1	mg/Kg	⊛	69	77 - 131

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		75 - 129
4-Bromofluorobenzene (Surr)	108		76 - 122
Dibromofluoromethane (Surr)	91		80 - 120
Toluene-d8 (Surr)	106		80 - 120

Eurofins Spokane

QC Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 590-17521-2 MSD

Matrix: Solid

Analysis Batch: 36144

Client Sample ID: FS-051322-02

Prep Type: Total/NA

Prep Batch: 36146

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND	F1 F2	0.739	0.539	F1 F2	mg/Kg	⊛	73	76 - 139	15	14
Ethylbenzene	ND	F1 F2	0.739	0.554	F1 F2	mg/Kg	⊛	75	77 - 135	19	13
m,p-Xylene	ND	F1	0.739	0.619	F1	mg/Kg	⊛	73	78 - 130	14	23
o-Xylene	ND	F1 F2	0.739	0.572	F1 F2	mg/Kg	⊛	72	77 - 129	16	15
Toluene	ND	F1	0.739	0.619		mg/Kg	⊛	78	77 - 131	11	14

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		75 - 129
4-Bromofluorobenzene (Surr)	99		76 - 122
Dibromofluoromethane (Surr)	97		80 - 120
Toluene-d8 (Surr)	103		80 - 120

Lab Sample ID: 590-17521-1 DU

Matrix: Solid

Analysis Batch: 36144

Client Sample ID: FS-051322-01

Prep Type: Total/NA

Prep Batch: 36146

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	ND		ND		mg/Kg	⊛	NC	25
Ethylbenzene	ND		ND		mg/Kg	⊛	NC	25
m,p-Xylene	ND		ND		mg/Kg	⊛	NC	23
o-Xylene	ND		ND		mg/Kg	⊛	NC	25
Toluene	ND		ND		mg/Kg	⊛	NC	25
Xylenes, Total	ND		ND		mg/Kg	⊛	NC	25

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		75 - 129
4-Bromofluorobenzene (Surr)	105		76 - 122
Dibromofluoromethane (Surr)	90		80 - 120
Toluene-d8 (Surr)	108		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-36146/1-A

Matrix: Solid

Analysis Batch: 36143

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36146

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		05/17/22 11:33	05/17/22 11:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		41.5 - 162	05/17/22 11:33	05/17/22 11:50	1

Lab Sample ID: LCS 590-36146/3-A

Matrix: Solid

Analysis Batch: 36143

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36146

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline	50.2	49.3		mg/Kg		98	74.4 - 124

Eurofins Spokane

QC Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		41.5 - 162

Lab Sample ID: 590-17521-1 DU
Matrix: Solid
Analysis Batch: 36143

Client Sample ID: FS-051322-01
Prep Type: Total/NA
Prep Batch: 36146

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Gasoline	ND		ND		mg/Kg	⚠	NC	32.3

	DU	DU	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		41.5 - 162

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 590-36149/1-A
Matrix: Solid
Analysis Batch: 36136

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		10		mg/Kg		05/17/22 12:50	05/17/22 19:05	1
Residual Range Organics (RRO) (C25-C36)	ND		25		mg/Kg		05/17/22 12:50	05/17/22 19:05	1

	MB	MB					Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	83		50 - 150				05/17/22 12:50	05/17/22 19:05	1
n-Triacontane-d62	90		50 - 150				05/17/22 12:50	05/17/22 19:05	1

Lab Sample ID: LCS 590-36149/2-A
Matrix: Solid
Analysis Batch: 36136

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics (DRO) (C10-C25)	66.7	62.6		mg/Kg		94	50 - 150
Residual Range Organics (RRO) (C25-C36)	66.7	73.7		mg/Kg		110	50 - 150

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	101		50 - 150
n-Triacontane-d62	101		50 - 150

Lab Sample ID: 590-17521-1 DU
Matrix: Solid
Analysis Batch: 36136

Client Sample ID: FS-051322-01
Prep Type: Total/NA
Prep Batch: 36149

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Diesel Range Organics (DRO) (C10-C25)	38		33.7		mg/Kg	⚠	11	40
Residual Range Organics (RRO) (C25-C36)	ND		ND	F5	mg/Kg	⚠	44	40

Eurofins Spokane

QC Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 590-17521-1 DU
Matrix: Solid
Analysis Batch: 36136

Client Sample ID: FS-051322-01
Prep Type: Total/NA
Prep Batch: 36149

	DU	DU	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	94		50 - 150
<i>n</i> -Triacotane-d62	95		50 - 150

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 590-36141/2-A
Matrix: Solid
Analysis Batch: 36151

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36141

Analyte	MB	MB								
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
Lead	ND		3.0		mg/Kg		05/17/22 10:24	05/17/22 14:10		1

Lab Sample ID: LCS 590-36141/1-A
Matrix: Solid
Analysis Batch: 36151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36141

Analyte			Spike	LCS	LCS				%Rec	
			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Lead			50.0	50.6		mg/Kg		101	80 - 120	

Lab Sample ID: 590-17521-1 MS
Matrix: Solid
Analysis Batch: 36151

Client Sample ID: FS-051322-01
Prep Type: Total/NA
Prep Batch: 36141

Analyte	Sample	Sample	Spike	MS	MS				%Rec	
	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Lead	24		58.6	74.3		mg/Kg	✱	86	75 - 125	

Lab Sample ID: 590-17521-1 MSD
Matrix: Solid
Analysis Batch: 36151

Client Sample ID: FS-051322-01
Prep Type: Total/NA
Prep Batch: 36141

Analyte	Sample	Sample	Spike	MSD	MSD				%Rec	RPD
	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	Limit
Lead	24		60.9	74.3		mg/Kg	✱	83	75 - 125	0 20

Lab Sample ID: 590-17521-1 DU
Matrix: Solid
Analysis Batch: 36151

Client Sample ID: FS-051322-01
Prep Type: Total/NA
Prep Batch: 36141

Analyte	Sample	Sample		DU	DU					RPD
	Result	Qualifier		Result	Qualifier	Unit	D		RPD	Limit
Lead	24			24.2		mg/Kg	✱		2	20

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-01

Date Collected: 05/13/22 15:00

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36142	05/17/22 10:37	NMI	TAL SPK

Client Sample ID: FS-051322-01

Date Collected: 05/13/22 15:00

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-1

Matrix: Solid

Percent Solids: 80.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			11.201 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36144	05/17/22 12:56	JSP	TAL SPK
Total/NA	Prep	5035			11.201 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36143	05/17/22 12:56	JSP	TAL SPK
Total/NA	Prep	3550C			15.33 g	5 mL	36149	05/17/22 12:50	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			36136	05/17/22 19:45	NMI	TAL SPK
Total/NA	Prep	3050B			1.41 g	50 mL	36141	05/17/22 10:24	AMB	TAL SPK
Total/NA	Analysis	6010D		5	10 mL	10 mL	36151	05/17/22 14:22	AMB	TAL SPK

Client Sample ID: FS-051322-02

Date Collected: 05/13/22 15:15

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36142	05/17/22 10:37	NMI	TAL SPK

Client Sample ID: FS-051322-02

Date Collected: 05/13/22 15:15

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-2

Matrix: Solid

Percent Solids: 80.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			10.019 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36144	05/17/22 13:40	JSP	TAL SPK
Total/NA	Prep	5035			10.019 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36143	05/17/22 13:40	JSP	TAL SPK
Total/NA	Prep	3550C			15.40 g	5 mL	36149	05/17/22 12:50	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			36136	05/17/22 20:26	NMI	TAL SPK
Total/NA	Prep	3050B			1.45 g	50 mL	36141	05/17/22 10:24	AMB	TAL SPK
Total/NA	Analysis	6010D		5			36151	05/17/22 14:41	AMB	TAL SPK

Client Sample ID: FS-051322-03

Date Collected: 05/13/22 15:30

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36142	05/17/22 10:37	NMI	TAL SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-03

Date Collected: 05/13/22 15:30

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-3

Matrix: Solid

Percent Solids: 80.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			10.091 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36144	05/17/22 14:45	JSP	TAL SPK
Total/NA	Prep	5035			10.091 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36143	05/17/22 14:45	JSP	TAL SPK
Total/NA	Prep	3550C			15.59 g	5 mL	36149	05/17/22 12:50	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			36136	05/17/22 20:47	NMI	TAL SPK
Total/NA	Prep	3050B			1.37 g	50 mL	36141	05/17/22 10:24	AMB	TAL SPK
Total/NA	Analysis	6010D		5			36151	05/17/22 14:57	AMB	TAL SPK

Client Sample ID: FS-051322-04

Date Collected: 05/13/22 15:45

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36142	05/17/22 10:37	NMI	TAL SPK

Client Sample ID: FS-051322-04

Date Collected: 05/13/22 15:45

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-4

Matrix: Solid

Percent Solids: 82.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			8.198 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36144	05/17/22 15:29	JSP	TAL SPK
Total/NA	Prep	5035			8.198 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36143	05/17/22 15:29	JSP	TAL SPK
Total/NA	Prep	3550C			15.36 g	5 mL	36149	05/17/22 12:50	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			36136	05/17/22 21:07	NMI	TAL SPK
Total/NA	Prep	3050B			1.58 g	50 mL	36141	05/17/22 10:24	AMB	TAL SPK
Total/NA	Analysis	6010D		5			36151	05/17/22 15:01	AMB	TAL SPK

Client Sample ID: FS-051322-05

Date Collected: 05/13/22 16:00

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36142	05/17/22 10:37	NMI	TAL SPK

Client Sample ID: FS-051322-05

Date Collected: 05/13/22 16:00

Date Received: 05/16/22 14:55

Lab Sample ID: 590-17521-5

Matrix: Solid

Percent Solids: 84.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7.358 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36144	05/17/22 15:51	JSP	TAL SPK
Total/NA	Prep	5035			7.358 g	10 mL	36146	05/17/22 11:33	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		100	0.86 mL	43 mL	36143	05/17/22 17:18	JSP	TAL SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Client Sample ID: FS-051322-05

Lab Sample ID: 590-17521-5

Date Collected: 05/13/22 16:00

Matrix: Solid

Date Received: 05/16/22 14:55

Percent Solids: 84.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			15.89 g	5 mL	36149	05/17/22 12:50	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		10			36136	05/17/22 21:28	NMI	TAL SPK
Total/NA	Prep	3050B			1.47 g	50 mL	36141	05/17/22 10:24	AMB	TAL SPK
Total/NA	Analysis	6010D		5			36151	05/17/22 15:05	AMB	TAL SPK

Laboratory References:

TAL SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Laboratory: Eurofins Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-06-23
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-1
SDG: Four Star

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
6010D	Metals (ICP)	SW846	TAL SPK
Moisture	Percent Moisture	EPA	TAL SPK
3050B	Preparation, Metals	SW846	TAL SPK
3550C	Ultrasonic Extraction	SW846	TAL SPK
5035	Closed System Purge and Trap	SW846	TAL SPK

Protocol References:

EPA = US Environmental Protection Agency

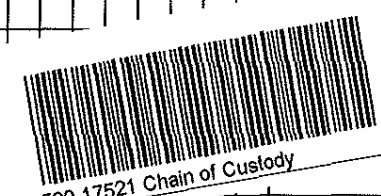
NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Chain of Custody Record

Regulatory Program <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other:		TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica																																											
Client Contact Fulcrum Environmental Consulting 207 West Boone Avenue Spokane, Washington 99201 509-459-9220 FAX Project Name: 223516.00 Site: Four Star P O #		Project Manager: Scott Wadsworth Email: Scott.Wadsworth@fulcrum.net Tel/Fax:																																											
Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below: 3 days		Site Contact: Lab Contact: Date: 8/16/22 Carrier:																																											
Sample Identification		COC No: _____ of _____ COCs TALS Project #: _____ Sampler: _____ For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No. _____ Sample Specific Notes: _____																																											
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Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)																																							
5/13	300	G	S	4																																									
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 590-17521 Chain of Custody																																													
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other																																													
Possible Hazard Identification Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months																																									
Special Instructions/QC Requirements & Comments: Email results to Scott.Wadsworth@fulcrum.net and red.groves@fulcrum.net																																													
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.		Cooler Temp. (°C): Obs'd: 5.1 Corr'd: 5.2		Therm ID No.: 1X506																																							
Relinquished by: Red LWR	Company: Fulcrum	Date/Time: 8/16/22	Received by: [Signature]	Company: BET SP	Date/Time: 8/16/22 1455																																								
Relinquished by:	Company:	Date/Time: 2:30	Received by:	Company:	Date/Time:																																								
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:																																								

Login Sample Receipt Checklist

Client: Fulcrum Environmental

Job Number: 590-17521-1

SDG Number: Four Star

Login Number: 17521

List Number: 1

Creator: Vaughan, Madison 1

List Source: Eurofins Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

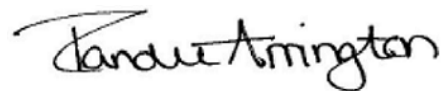
Laboratory Job ID: 590-17521-2

Laboratory Sample Delivery Group: Four Star
Client Project/Site: 223516.00/Four Star

For:

Fulcrum Environmental
207 West Boone Avenue
Spokane, Washington 99201

Attn: Scott Groat



Authorized for release by:
5/23/2022 6:13:53 PM

Randee Arrington, Lab Director
(509)924-9200
Randee.Arrington@et.eurofinsus.com

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results through



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Job ID: 590-17521-2

Laboratory: Eurofins Spokane

Narrative

Receipt

The samples were received on 5/16/2022 2:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.2° C.

Receipt Exceptions

The following sample was activated for 6010D TCLP Lead analysis by the client on 05/19/22: FS-051322-03 (590-17521-3). This analysis was not originally requested on the chain-of-custody (COC).

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-17521-3	FS-051322-03	Solid	05/13/22 15:30	05/16/22 14:55

1

2

3

4

5

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9

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11

12

Definitions/Glossary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Client Sample ID: FS-051322-03

Lab Sample ID: 590-17521-3

Date Collected: 05/13/22 15:30

Matrix: Solid

Date Received: 05/16/22 14:55

Method: 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060		mg/L		05/23/22 12:08	05/23/22 17:11	1

QC Sample Results

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Method: 6010D - Metals (ICP)

Lab Sample ID: LCS 590-36207/1-A
Matrix: Solid
Analysis Batch: 36214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36207

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	1.00	1.03		mg/L		103	80 - 120

Lab Sample ID: LB 590-36174/1-B
Matrix: Solid
Analysis Batch: 36214

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 36207

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060		mg/L		05/23/22 12:08	05/23/22 16:05	1

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Client Sample ID: FS-051322-03

Lab Sample ID: 590-17521-3

Date Collected: 05/13/22 15:30

Matrix: Solid

Date Received: 05/16/22 14:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			100.43 g	2000.22 mL	36174	05/19/22 18:00	AMB	TAL SPK
TCLP	Prep	3010A			50 mL	50 mL	36207	05/23/22 12:08	JSP	TAL SPK
TCLP	Analysis	6010D		1			36214	05/23/22 17:11	JSP	TAL SPK

Laboratory References:

TAL SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Laboratory: Eurofins Spokane

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-06-23

1
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Method Summary

Client: Fulcrum Environmental
Project/Site: 223516.00/Four Star

Job ID: 590-17521-2
SDG: Four Star

Method	Method Description	Protocol	Laboratory
6010D	Metals (ICP)	SW846	TAL SPK
1311	TCLP Extraction	SW846	TAL SPK
3010A	Preparation, Total Metals	SW846	TAL SPK

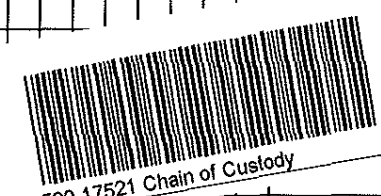
Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Chain of Custody Record

Regulatory Program <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other:		TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica																																											
Client Contact Fulcrum Environmental Consulting 207 West Boone Avenue Spokane, Washington 99201 509-459-9220 FAX Project Name: <u>223516.00</u> Site: <u>Four Star</u> P O #		Project Manager: <u>Scott Wadsworth</u> Email: <u>scott.wadsworth@fulcrum.net</u> Tel/Fax:																																											
Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <u>3 days</u> <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Contact: Lab Contact: Date: <u>8/16/22</u> Carrier:																																											
Sample Identification		COC No: _____ of _____ COCs TALS Project #: _____ Sampler: _____ For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No. _____ Sample Specific Notes:																																											
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Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)																																							
5/13	300	G	S	4																																									
	315																																												
	330																																												
	345																																												
	400																																												
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months																																											
Possible Hazard Identification Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Special Instructions/QC Requirements & Comments: <u>Email results to Scott@fulcrum.net and red.groves@fulcrum.net</u>																																											
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No. _____ Cooler Temp. (°C) Obs'd: <u>5.2</u> Corr'd: <u>5.2</u> Therm ID No.: <u>13506</u>																																											
Relinquished by: <u>Red LWR</u>		Relinquished by: <u>Fulcrum</u>																																											
Relinquished by:		Relinquished by:																																											
Relinquished by:		Relinquished by:																																											

Login Sample Receipt Checklist

Client: Fulcrum Environmental

Job Number: 590-17521-2

SDG Number: Four Star

Login Number: 17521

List Number: 1

Creator: Vaughan, Madison 1

List Source: Eurofins Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

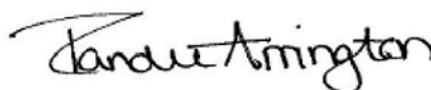
Laboratory Job ID: 590-17564-1

Client Project/Site: Four Star/223516.00

For:

Fulcrum Environmental
207 West Boone Avenue
Spokane, Washington 99201

Attn: Scott Groat



Authorized for release by:

5/23/2022 5:25:09 PM

Randee Arrington, Lab Director
(509)924-9200

Randee.Arrington@et.eurofinsus.com

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Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Job ID: 590-17564-1

Laboratory: Eurofins Spokane

Narrative

Receipt

The samples were received on 5/19/2022 4:51 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 8.2° C.

Receipt Exceptions

The following samples were received at the laboratory outside the required temperature criteria: FS-051922-01-2.0 (590-17564-1), FS-051922-02-3.0 (590-17564-2), FS-051922-03-2.0 (590-17564-3), FS-051922-04-2.0 (590-17564-4), FS-051922-05-2.0 (590-17564-5), FS-051922-06-2.0 (590-17564-6), FS-051922-07-6.0 (590-17564-7) and FS-051922-08-8.0 (590-17564-8). The samples are considered acceptable since they were collected and submitted to the laboratory on the same day and there is evidence that the chilling process has begun.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

Method NWTPH-Dx: The continuing calibration verification (CCV) associated with batch 590-36206 recovered above the upper control limit for Diesel Range Organics (DRO) (C10-C25). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method NWTPH-Dx: Detected hydrocarbons in the oil range appear to be due to diesel overlap in the following samples:

FS-051922-02-3.0 (590-17564-2), FS-051922-03-2.0 (590-17564-3), FS-051922-06-2.0 (590-17564-6) and (590-17564-A-1-C DU).

Method NWTPH-Dx: Surrogate recovery for the following samples were outside control limits: FS-051922-01-2.0 (590-17564-1), FS-051922-04-2.0 (590-17564-4), FS-051922-08-8.0 (590-17564-8) and (590-17564-A-1-C DU). Evidence of matrix interference due to high target analytes is present; therefore, re-extraction and/or re-analysis was not performed.

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel and/or a light weight oil in the following sample: FS-051922-05-2.0 (590-17564-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-17564-1	FS-051922-01-2.0	Solid	05/19/22 10:00	05/19/22 16:51
590-17564-2	FS-051922-02-3.0	Solid	05/19/22 10:15	05/19/22 16:51
590-17564-3	FS-051922-03-2.0	Solid	05/19/22 10:30	05/19/22 16:51
590-17564-4	FS-051922-04-2.0	Solid	05/19/22 10:45	05/19/22 16:51
590-17564-5	FS-051922-05-2.0	Solid	05/19/22 11:00	05/19/22 16:51
590-17564-6	FS-051922-06-2.0	Solid	05/19/22 11:15	05/19/22 16:51
590-17564-7	FS-051922-07-6.0	Solid	05/19/22 14:00	05/19/22 16:51
590-17564-8	FS-051922-08-8.0	Solid	05/19/22 14:15	05/19/22 16:51

Definitions/Glossary

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-01-2.0

Lab Sample ID: 590-17564-1

Date Collected: 05/19/22 10:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 76.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.047		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1
Ethylbenzene	ND		0.24		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1
m,p-Xylene	ND		0.95		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1
o-Xylene	ND		0.47		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1
Toluene	ND		0.24		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1
Xylenes, Total	ND		1.4		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 129	05/20/22 10:00	05/20/22 12:18	1
4-Bromofluorobenzene (Surr)	97		76 - 122	05/20/22 10:00	05/20/22 12:18	1
Dibromofluoromethane (Surr)	101		80 - 120	05/20/22 10:00	05/20/22 12:18	1
Toluene-d8 (Surr)	102		80 - 120	05/20/22 10:00	05/20/22 12:18	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	250		12		mg/Kg	☆	05/20/22 10:00	05/20/22 12:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		41.5 - 162	05/20/22 10:00	05/20/22 12:18	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	9600		130		mg/Kg	☆	05/23/22 10:33	05/23/22 12:34	10
Residual Range Organics (RRO) (C25-C36)	ND		320		mg/Kg	☆	05/23/22 10:33	05/23/22 12:34	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	379	S1+	50 - 150	05/23/22 10:33	05/23/22 12:34	10
n-Triacontane-d62	89		50 - 150	05/23/22 10:33	05/23/22 12:34	10

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	170		12		mg/Kg	☆	05/20/22 08:05	05/23/22 14:48	5

Client Sample ID: FS-051922-02-3.0

Lab Sample ID: 590-17564-2

Date Collected: 05/19/22 10:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 75.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	F1	0.57		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10
Ethylbenzene	ND	F2 F1	2.8		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10
m,p-Xylene	ND	F1	11		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10
o-Xylene	ND	F1	5.7		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10
Toluene	ND	F2 F1	2.8		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10
Xylenes, Total	ND		17		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 129	05/20/22 10:00	05/20/22 13:01	10
4-Bromofluorobenzene (Surr)	117		76 - 122	05/20/22 10:00	05/20/22 13:01	10
Dibromofluoromethane (Surr)	106		80 - 120	05/20/22 10:00	05/20/22 13:01	10

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-02-3.0

Lab Sample ID: 590-17564-2

Date Collected: 05/19/22 10:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 75.1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120	05/20/22 10:00	05/20/22 13:01	10

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	6600		140		mg/Kg	☆	05/20/22 10:00	05/20/22 13:01	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		41.5 - 162	05/20/22 10:00	05/20/22 13:01	10

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO)	28000		130		mg/Kg	☆	05/23/22 10:33	05/23/22 13:15	10

Residual Range Organics (RRO)	770		330		mg/Kg	☆	05/23/22 10:33	05/23/22 13:15	10
(C25-C36)									

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	63		50 - 150	05/23/22 10:33	05/23/22 13:15	10
n-Triacontane-d62	107		50 - 150	05/23/22 10:33	05/23/22 13:15	10

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	79		13		mg/Kg	☆	05/20/22 08:05	05/23/22 14:52	5

Client Sample ID: FS-051922-03-2.0

Lab Sample ID: 590-17564-3

Date Collected: 05/19/22 10:30

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 82.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.040		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1
Ethylbenzene	ND		0.20		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1
m,p-Xylene	ND		0.80		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1
o-Xylene	0.59		0.40		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1
Toluene	ND		0.20		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1
Xylenes, Total	ND		1.2		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 129	05/20/22 10:00	05/20/22 14:06	1
4-Bromofluorobenzene (Surr)	121		76 - 122	05/20/22 10:00	05/20/22 14:06	1
Dibromofluoromethane (Surr)	100		80 - 120	05/20/22 10:00	05/20/22 14:06	1
Toluene-d8 (Surr)	100		80 - 120	05/20/22 10:00	05/20/22 14:06	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	800		10		mg/Kg	☆	05/20/22 10:00	05/20/22 14:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		41.5 - 162	05/20/22 10:00	05/20/22 14:06	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-03-2.0

Lab Sample ID: 590-17564-3

Date Collected: 05/19/22 10:30

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 82.9

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	2900		57		mg/Kg	☆	05/23/22 10:33	05/23/22 13:34	5
Residual Range Organics (RRO) (C25-C36)	ND		140		mg/Kg	☆	05/23/22 10:33	05/23/22 13:34	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	119		50 - 150				05/23/22 10:33	05/23/22 13:34	5
<i>n</i> -Triacontane-d62	91		50 - 150				05/23/22 10:33	05/23/22 13:34	5

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		12		mg/Kg	☆	05/20/22 08:05	05/23/22 15:08	5

Client Sample ID: FS-051922-04-2.0

Lab Sample ID: 590-17564-4

Date Collected: 05/19/22 10:45

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 82.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.44		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
Ethylbenzene	ND		2.2		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
m,p-Xylene	ND		8.8		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
o-Xylene	ND		4.4		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
Toluene	ND		2.2		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
Xylenes, Total	ND		13		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 129				05/20/22 10:00	05/20/22 14:49	10
4-Bromofluorobenzene (Surr)	99		76 - 122				05/20/22 10:00	05/20/22 14:49	10
Dibromofluoromethane (Surr)	96		80 - 120				05/20/22 10:00	05/20/22 14:49	10
Toluene-d8 (Surr)	104		80 - 120				05/20/22 10:00	05/20/22 14:49	10

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2000		110		mg/Kg	☆	05/20/22 10:00	05/20/22 14:49	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		41.5 - 162				05/20/22 10:00	05/20/22 14:49	10

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	3600		59		mg/Kg	☆	05/23/22 10:33	05/23/22 13:54	5
Residual Range Organics (RRO) (C25-C36)	ND		150		mg/Kg	☆	05/23/22 10:33	05/23/22 13:54	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	274	S1+	50 - 150				05/23/22 10:33	05/23/22 13:54	5
<i>n</i> -Triacontane-d62	93		50 - 150				05/23/22 10:33	05/23/22 13:54	5

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	54		12		mg/Kg	☆	05/20/22 08:05	05/23/22 15:12	5

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Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-05-2.0

Lab Sample ID: 590-17564-5

Date Collected: 05/19/22 11:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 87.3

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.046		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1
Ethylbenzene	ND		0.23		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1
m,p-Xylene	ND		0.93		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1
o-Xylene	ND		0.46		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1
Toluene	ND		0.23		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1
Xylenes, Total	ND		1.4		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129	05/20/22 10:00	05/20/22 15:11	1
4-Bromofluorobenzene (Surr)	101		76 - 122	05/20/22 10:00	05/20/22 15:11	1
Dibromofluoromethane (Surr)	90		80 - 120	05/20/22 10:00	05/20/22 15:11	1
Toluene-d8 (Surr)	111		80 - 120	05/20/22 10:00	05/20/22 15:11	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		12		mg/Kg	☆	05/20/22 10:00	05/20/22 15:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		41.5 - 162	05/20/22 10:00	05/20/22 15:11	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	260		54		mg/Kg	☆	05/23/22 10:33	05/23/22 14:12	5
Residual Range Organics (RRO) (C25-C36)	ND		140		mg/Kg	☆	05/23/22 10:33	05/23/22 14:12	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150	05/23/22 10:33	05/23/22 14:12	5
n-Triacontane-d62	93		50 - 150	05/23/22 10:33	05/23/22 14:12	5

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	170		11		mg/Kg	☆	05/20/22 08:05	05/23/22 15:16	5

Client Sample ID: FS-051922-06-2.0

Lab Sample ID: 590-17564-6

Date Collected: 05/19/22 11:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 78.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.046		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1
Ethylbenzene	ND		0.23		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1
m,p-Xylene	ND		0.91		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1
o-Xylene	ND		0.46		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1
Toluene	ND		0.23		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1
Xylenes, Total	ND		1.4		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129	05/20/22 10:00	05/20/22 15:33	1
4-Bromofluorobenzene (Surr)	102		76 - 122	05/20/22 10:00	05/20/22 15:33	1
Dibromofluoromethane (Surr)	92		80 - 120	05/20/22 10:00	05/20/22 15:33	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-06-2.0

Lab Sample ID: 590-17564-6

Date Collected: 05/19/22 11:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 78.5

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	111		80 - 120	05/20/22 10:00	05/20/22 15:33	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	73		11		mg/Kg	☆	05/20/22 10:00	05/20/22 15:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		41.5 - 162	05/20/22 10:00	05/20/22 15:33	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO)	2400		61		mg/Kg	☆	05/23/22 10:33	05/23/22 14:32	5

Residual Range Organics (RRO)	180		150		mg/Kg	☆	05/23/22 10:33	05/23/22 14:32	5
(C25-C36)									

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	107		50 - 150	05/23/22 10:33	05/23/22 14:32	5
n-Triacontane-d62	93		50 - 150	05/23/22 10:33	05/23/22 14:32	5

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	46		11		mg/Kg	☆	05/20/22 08:05	05/23/22 15:20	5

Client Sample ID: FS-051922-07-6.0

Lab Sample ID: 590-17564-7

Date Collected: 05/19/22 14:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 78.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.049		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1
Ethylbenzene	ND		0.25		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1
m,p-Xylene	ND		0.98		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1
o-Xylene	0.65		0.49		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1
Toluene	ND		0.25		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1
Xylenes, Total	1.5		1.5		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 129	05/20/22 10:00	05/20/22 15:54	1
4-Bromofluorobenzene (Surr)	119		76 - 122	05/20/22 10:00	05/20/22 15:54	1
Dibromofluoromethane (Surr)	104		80 - 120	05/20/22 10:00	05/20/22 15:54	1
Toluene-d8 (Surr)	93		80 - 120	05/20/22 10:00	05/20/22 15:54	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	710		12		mg/Kg	☆	05/20/22 10:00	05/20/22 15:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		41.5 - 162	05/20/22 10:00	05/20/22 15:54	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-07-6.0

Lab Sample ID: 590-17564-7

Date Collected: 05/19/22 14:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 78.8

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	93		12		mg/Kg	☆	05/23/22 10:33	05/23/22 14:50	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	☆	05/23/22 10:33	05/23/22 14:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	104		50 - 150				05/23/22 10:33	05/23/22 14:50	1
<i>n</i> -Triacontane-d62	104		50 - 150				05/23/22 10:33	05/23/22 14:50	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		10		mg/Kg	☆	05/20/22 08:05	05/23/22 15:24	5

Client Sample ID: FS-051922-08-8.0

Lab Sample ID: 590-17564-8

Date Collected: 05/19/22 14:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 70.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.061		mg/Kg	☆	05/20/22 10:00	05/20/22 16:15	1
Ethylbenzene	0.50		0.30		mg/Kg	☆	05/20/22 10:00	05/20/22 16:15	1
m,p-Xylene	2.3		1.2		mg/Kg	☆	05/20/22 10:00	05/20/22 16:15	1
o-Xylene	2.3		0.61		mg/Kg	☆	05/20/22 10:00	05/20/22 16:15	1
Toluene	ND		0.30		mg/Kg	☆	05/20/22 10:00	05/20/22 16:15	1
Xylenes, Total	4.6		1.8		mg/Kg	☆	05/20/22 10:00	05/20/22 16:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 129				05/20/22 10:00	05/20/22 16:15	1
4-Bromofluorobenzene (Surr)	123	S1+	76 - 122				05/20/22 10:00	05/20/22 16:15	1
Dibromofluoromethane (Surr)	110		80 - 120				05/20/22 10:00	05/20/22 16:15	1
Toluene-d8 (Surr)	95		80 - 120				05/20/22 10:00	05/20/22 16:15	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	3900		150		mg/Kg	☆	05/20/22 10:00	05/20/22 19:05	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		41.5 - 162				05/20/22 10:00	05/20/22 19:05	10

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	4900		140		mg/Kg	☆	05/23/22 10:33	05/23/22 15:11	10
Residual Range Organics (RRO) (C25-C36)	ND		340		mg/Kg	☆	05/23/22 10:33	05/23/22 15:11	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	180	S1+	50 - 150				05/23/22 10:33	05/23/22 15:11	10
<i>n</i> -Triacontane-d62	86		50 - 150				05/23/22 10:33	05/23/22 15:11	10

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	14		10		mg/Kg	☆	05/20/22 08:05	05/23/22 15:28	5

Eurofins Spokane

QC Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-36200/1-A

Matrix: Solid

Analysis Batch: 36199

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36200

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020		mg/Kg		05/20/22 10:00	05/20/22 11:13	1
Ethylbenzene	ND		0.10		mg/Kg		05/20/22 10:00	05/20/22 11:13	1
m,p-Xylene	ND		0.40		mg/Kg		05/20/22 10:00	05/20/22 11:13	1
o-Xylene	ND		0.20		mg/Kg		05/20/22 10:00	05/20/22 11:13	1
Toluene	ND		0.10		mg/Kg		05/20/22 10:00	05/20/22 11:13	1
Xylenes, Total	ND		0.60		mg/Kg		05/20/22 10:00	05/20/22 11:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 129	05/20/22 10:00	05/20/22 11:13	1
4-Bromofluorobenzene (Surr)	88		76 - 122	05/20/22 10:00	05/20/22 11:13	1
Dibromofluoromethane (Surr)	107		80 - 120	05/20/22 10:00	05/20/22 11:13	1
Toluene-d8 (Surr)	104		80 - 120	05/20/22 10:00	05/20/22 11:13	1

Lab Sample ID: LCS 590-36200/2-A

Matrix: Solid

Analysis Batch: 36199

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36200

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.500	0.512		mg/Kg		102	76 - 139
Ethylbenzene	0.500	0.491		mg/Kg		98	77 - 135
m,p-Xylene	0.500	0.493		mg/Kg		99	78 - 130
o-Xylene	0.500	0.491		mg/Kg		98	77 - 129
Toluene	0.500	0.525		mg/Kg		105	77 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		75 - 129
4-Bromofluorobenzene (Surr)	91		76 - 122
Dibromofluoromethane (Surr)	105		80 - 120
Toluene-d8 (Surr)	102		80 - 120

Lab Sample ID: 590-17564-2 MS

Matrix: Solid

Analysis Batch: 36199

Client Sample ID: FS-051922-02-3.0

Prep Type: Total/NA

Prep Batch: 36200

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	ND	F1	14.2	9.86	F1	mg/Kg	⊛	69	76 - 139
Ethylbenzene	ND	F2 F1	14.2	9.46	F1	mg/Kg	⊛	67	77 - 135
m,p-Xylene	ND	F1	14.2	ND	F1	mg/Kg	⊛	65	78 - 130
o-Xylene	ND	F1	14.2	10.1	F1	mg/Kg	⊛	71	77 - 129
Toluene	ND	F2 F1	14.2	9.21	F1	mg/Kg	⊛	65	77 - 131

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		75 - 129
4-Bromofluorobenzene (Surr)	112		76 - 122
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	96		80 - 120

Eurofins Spokane

QC Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 590-17564-2 MSD

Matrix: Solid

Analysis Batch: 36199

Client Sample ID: FS-051922-02-3.0

Prep Type: Total/NA

Prep Batch: 36200

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND	F1	14.2	11.2		mg/Kg	⊛	79	76 - 139	13	14
Ethylbenzene	ND	F2 F1	14.2	11.2	F2	mg/Kg	⊛	79	77 - 135	17	13
m,p-Xylene	ND	F1	14.2	ND	F1	mg/Kg	⊛	77	78 - 130	16	23
o-Xylene	ND	F1	14.2	11.7		mg/Kg	⊛	83	77 - 129	15	15
Toluene	ND	F2 F1	14.2	11.0	F2	mg/Kg	⊛	77	77 - 131	17	14

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		75 - 129
4-Bromofluorobenzene (Surr)	108		76 - 122
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Lab Sample ID: 590-17564-1 DU

Matrix: Solid

Analysis Batch: 36199

Client Sample ID: FS-051922-01-2.0

Prep Type: Total/NA

Prep Batch: 36200

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	ND		ND		mg/Kg	⊛	NC	25
Ethylbenzene	ND		ND		mg/Kg	⊛	NC	25
m,p-Xylene	ND		ND		mg/Kg	⊛	NC	23
o-Xylene	ND		ND		mg/Kg	⊛	NC	25
Toluene	ND		ND		mg/Kg	⊛	NC	25
Xylenes, Total	ND		ND		mg/Kg	⊛	NC	25

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		75 - 129
4-Bromofluorobenzene (Surr)	99		76 - 122
Dibromofluoromethane (Surr)	103		80 - 120
Toluene-d8 (Surr)	102		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-36200/1-A

Matrix: Solid

Analysis Batch: 36198

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36200

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		05/20/22 10:00	05/20/22 11:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		41.5 - 162	05/20/22 10:00	05/20/22 11:13	1

Lab Sample ID: LCS 590-36200/3-A

Matrix: Solid

Analysis Batch: 36198

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36200

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline	50.2	48.6		mg/Kg		97	74.4 - 124

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QC Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

		LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	98		41.5 - 162								
Lab Sample ID: 590-17564-1 DU				Client Sample ID: FS-051922-01-2.0							
Matrix: Solid				Prep Type: Total/NA							
Analysis Batch: 36198				Prep Batch: 36200							
Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	Limit
Gasoline	250			276		mg/Kg	☆			10	32.3
		DU	DU								
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	99		41.5 - 162								

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 590-36205/1-A						Client Sample ID: Method Blank					
Matrix: Solid						Prep Type: Total/NA					
Analysis Batch: 36206						Prep Batch: 36205					
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
Diesel Range Organics (DRO) (C10-C25)	ND		10		mg/Kg		05/23/22 10:33	05/23/22 11:35	1		
Residual Range Organics (RRO) (C25-C36)	ND		25		mg/Kg		05/23/22 10:33	05/23/22 11:35	1		
		MB	MB								
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	92		50 - 150								
n-Triacontane-d62	96		50 - 150								

Lab Sample ID: LCS 590-36205/2-A						Client Sample ID: Lab Control Sample					
Matrix: Solid						Prep Type: Total/NA					
Analysis Batch: 36206						Prep Batch: 36205					
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits				
Diesel Range Organics (DRO) (C10-C25)	66.7	63.8		mg/Kg		96	50 - 150				
Residual Range Organics (RRO) (C25-C36)	66.7	77.1		mg/Kg		116	50 - 150				
		LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits								
o-Terphenyl	95		50 - 150								
n-Triacontane-d62	89		50 - 150								

Lab Sample ID: 590-17564-1 DU						Client Sample ID: FS-051922-01-2.0					
Matrix: Solid						Prep Type: Total/NA					
Analysis Batch: 36206						Prep Batch: 36205					
Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit			
Diesel Range Organics (DRO) (C10-C25)	9600		9420		mg/Kg	⊛	2	40			
Residual Range Organics (RRO) (C25-C36)	ND		329		mg/Kg	⊛	5	40			

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QC Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 590-17564-1 DU

Matrix: Solid

Analysis Batch: 36206

Client Sample ID: FS-051922-01-2.0

Prep Type: Total/NA

Prep Batch: 36205

	<i>DU</i>	<i>DU</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>o-Terphenyl</i>	288	S1+	50 - 150
<i>n-Triacontane-d62</i>	90		50 - 150

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 590-36193/2-A

Matrix: Solid

Analysis Batch: 36214

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36193

<i>Analyte</i>	<i>MB</i>	<i>MB</i>								
	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil</i>	<i>Fac</i>
Lead	ND		3.0		mg/Kg		05/20/22 08:05	05/23/22 14:20		1

Lab Sample ID: LCS 590-36193/1-A

Matrix: Solid

Analysis Batch: 36214

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 36193

<i>Analyte</i>		<i>Spike</i>	<i>LCS</i>	<i>LCS</i>				<i>%Rec</i>		
		<i>Added</i>	<i>Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>		
Lead		50.0	51.4		mg/Kg		103	80 - 120		

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-01-2.0

Date Collected: 05/19/22 10:00

Date Received: 05/19/22 16:51

Lab Sample ID: 590-17564-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Client Sample ID: FS-051922-01-2.0

Date Collected: 05/19/22 10:00

Date Received: 05/19/22 16:51

Lab Sample ID: 590-17564-1

Matrix: Solid

Percent Solids: 76.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.403 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36199	05/20/22 12:18	JSP	TAL SPK
Total/NA	Prep	5035			6.403 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36198	05/20/22 12:18	JSP	TAL SPK
Total/NA	Prep	3550C			15.36 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		10			36206	05/23/22 12:34	NMI	TAL SPK
Total/NA	Prep	3050B			1.66 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 14:48	JSP	TAL SPK

Client Sample ID: FS-051922-02-3.0

Date Collected: 05/19/22 10:15

Date Received: 05/19/22 16:51

Lab Sample ID: 590-17564-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Client Sample ID: FS-051922-02-3.0

Date Collected: 05/19/22 10:15

Date Received: 05/19/22 16:51

Lab Sample ID: 590-17564-2

Matrix: Solid

Percent Solids: 75.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.318 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		10	0.86 mL	43 mL	36199	05/20/22 13:01	JSP	TAL SPK
Total/NA	Prep	5035			5.318 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	36198	05/20/22 13:01	JSP	TAL SPK
Total/NA	Prep	3550C			15.04 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		10			36206	05/23/22 13:15	NMI	TAL SPK
Total/NA	Prep	3050B			1.50 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 14:52	JSP	TAL SPK

Client Sample ID: FS-051922-03-2.0

Date Collected: 05/19/22 10:30

Date Received: 05/19/22 16:51

Lab Sample ID: 590-17564-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-03-2.0

Lab Sample ID: 590-17564-3

Date Collected: 05/19/22 10:30

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 82.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.742 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36199	05/20/22 14:06	JSP	TAL SPK
Total/NA	Prep	5035			6.742 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36198	05/20/22 14:06	JSP	TAL SPK
Total/NA	Prep	3550C			15.86 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		5			36206	05/23/22 13:34	NMI	TAL SPK
Total/NA	Prep	3050B			1.47 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 15:08	JSP	TAL SPK

Client Sample ID: FS-051922-04-2.0

Lab Sample ID: 590-17564-4

Date Collected: 05/19/22 10:45

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Client Sample ID: FS-051922-04-2.0

Lab Sample ID: 590-17564-4

Date Collected: 05/19/22 10:45

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.124 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		10	0.86 mL	43 mL	36199	05/20/22 14:49	JSP	TAL SPK
Total/NA	Prep	5035			6.124 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	36198	05/20/22 14:49	JSP	TAL SPK
Total/NA	Prep	3550C			15.54 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		5			36206	05/23/22 13:54	NMI	TAL SPK
Total/NA	Prep	3050B			1.54 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 15:12	JSP	TAL SPK

Client Sample ID: FS-051922-05-2.0

Lab Sample ID: 590-17564-5

Date Collected: 05/19/22 11:00

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Client Sample ID: FS-051922-05-2.0

Lab Sample ID: 590-17564-5

Date Collected: 05/19/22 11:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 87.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.253 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36199	05/20/22 15:11	JSP	TAL SPK
Total/NA	Prep	5035			5.253 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36198	05/20/22 15:11	JSP	TAL SPK

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Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-05-2.0

Lab Sample ID: 590-17564-5

Date Collected: 05/19/22 11:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 87.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			15.86 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		5			36206	05/23/22 14:12	NMI	TAL SPK
Total/NA	Prep	3050B			1.54 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 15:16	JSP	TAL SPK

Client Sample ID: FS-051922-06-2.0

Lab Sample ID: 590-17564-6

Date Collected: 05/19/22 11:15

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Client Sample ID: FS-051922-06-2.0

Lab Sample ID: 590-17564-6

Date Collected: 05/19/22 11:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 78.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.354 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36199	05/20/22 15:33	JSP	TAL SPK
Total/NA	Prep	5035			6.354 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36198	05/20/22 15:33	JSP	TAL SPK
Total/NA	Prep	3550C			15.66 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		5			36206	05/23/22 14:32	NMI	TAL SPK
Total/NA	Prep	3050B			1.75 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 15:20	JSP	TAL SPK

Client Sample ID: FS-051922-07-6.0

Lab Sample ID: 590-17564-7

Date Collected: 05/19/22 14:00

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:22	M1V	TAL SPK

Client Sample ID: FS-051922-07-6.0

Lab Sample ID: 590-17564-7

Date Collected: 05/19/22 14:00

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 78.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.808 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36199	05/20/22 15:54	JSP	TAL SPK
Total/NA	Prep	5035			5.808 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	36198	05/20/22 15:54	JSP	TAL SPK
Total/NA	Prep	3550C			16.00 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			36206	05/23/22 14:50	NMI	TAL SPK
Total/NA	Prep	3050B			1.90 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 15:24	JSP	TAL SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Client Sample ID: FS-051922-08-8.0

Lab Sample ID: 590-17564-8

Date Collected: 05/19/22 14:15

Matrix: Solid

Date Received: 05/19/22 16:51

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			36197	05/20/22 09:24	M1V	TAL SPK

Client Sample ID: FS-051922-08-8.0

Lab Sample ID: 590-17564-8

Date Collected: 05/19/22 14:15

Matrix: Solid

Date Received: 05/19/22 16:51

Percent Solids: 70.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.378 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	36199	05/20/22 16:15	JSP	TAL SPK
Total/NA	Prep	5035			5.378 g	10 mL	36200	05/20/22 10:00	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	36198	05/20/22 19:05	JSP	TAL SPK
Total/NA	Prep	3550C			15.45 g	5 mL	36205	05/23/22 10:33	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		10			36206	05/23/22 15:11	NMI	TAL SPK
Total/NA	Prep	3050B			2.03 g	50 mL	36193	05/20/22 08:05	JSP	TAL SPK
Total/NA	Analysis	6010D		5			36214	05/23/22 15:28	JSP	TAL SPK

Laboratory References:

TAL SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Laboratory: Eurofins Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-06-23
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: Fulcrum Environmental
Project/Site: Four Star/223516.00

Job ID: 590-17564-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
6010D	Metals (ICP)	SW846	TAL SPK
Moisture	Percent Moisture	EPA	TAL SPK
3050B	Preparation, Metals	SW846	TAL SPK
3550C	Ultrasonic Extraction	SW846	TAL SPK
5035	Closed System Purge and Trap	SW846	TAL SPK

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Address. _____

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

[illegible]

Login Sample Receipt Checklist

Client: Fulcrum Environmental

Job Number: 590-17564-1

SDG Number:

Login Number: 17564

List Number: 1

Creator: Vaughan, Madison 1

List Source: Eurofins Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

May 31, 2022

Scott Groat
Fulcrum Environmental Consulting
207 W. Boone Avenue
Spokane, WA 99201

Dear Mr. Groat,

Please find enclosed the analytical data report for the Four Star Fuel Release Project located in Pullman, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

A handwritten signature in black ink, appearing to read "Sherry L. Chilcutt".

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE

Ph: 360-352-2110

Olympia, WA 98506

Fax: 360-352-4154

Date: 5/25/22

Page: 1 of 1

Client: Fulcrum Environmental Consulting

Project Manager: Scott Groat

Address: 207 W. Boone Ave.

Project Name: Four Star Fuel Release

City: Spokane

State: WA Zip: 99201

Location: 355 NW State

City, State: Pullman, WA

Phone:

Fax:


Collector:

Date of Collection: 5/25/22

Client Project #

Email: Sgroat@efulcrum.net



	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260 PCE & Daughter Prod NWTPH-Gx BTEX (8260) / (8021) NWTPH-HCID NWTPH-Dx / Dx PCB 8082 MTCA 5 Metals RCRA 8 Metals c PAH 8270 PAH 8270 Semi Vol 8270														Field Notes
1	FS-052522-PB-09-11		958	Soil	Jar, 2xVOA			X	X		X									
2	FS-052522-PB-10-19		1400					X	X		X									
3	FS-052522-SW-11-6.5		1456																	
4		-12-9.0	1500																	
5		-13-2.0	1521																	
6		-14-11	1620																	
7		-15-9.0	1625																	
8		-16-3.0	1630																	
9		-17-11.0	1634																	
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by: Scott Groat	Date / Time: 5/25/22 1757	Received by: Mubana Hgt	Date / Time: 5/25/22 1757	Sample Receipt Good Condition? Y N Cooler Temp. °C Sample Temp. °C Total Number of Containers		Remarks: <div>ML</div> TAT: 24HR 48HR 5-DAY
Relinquished by:	Date / Time:	Received by:	Date / Time:			
Relinquished by:	Date / Time:	Received by:	Date / Time:			

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E003

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method	FS-052522- Blank	FS-052522- PB-09-11	FS-052522- PB-09-11	FS-052522- PB-10-19	FS-052522- SW-11-6.5	FS-052522- SW-12-9.0
			Dup					
Date Sampled		N/A	5/25/2022	5/25/2022	5/25/2022	5/25/2022	5/25/2022	5/25/2022
Date Analyzed	PQL	5/25/2022	5/25/2022	5/25/2022	5/25/2022	5/25/2022	5/25/2022	5/25/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	1.3	1.1	0.050	0.028	0.066	
Toluene	0.10	nd	< 1.0	< 2.0	nd	nd	nd	
Ethylbenzene	0.05	nd	23	22	nd	0.069	nd	
Total Xylenes	0.15	nd	14	13	nd	nd	nd	
Gasoline	10	nd	2800 E	2200	nd	39	nd	
Surrogate Recovery								
Dibromofluoromethane		99	75	79	89	91	90	
1,2-Dichloroethane-d4		99	78	74	78	84	84	
Toluene-d8		89	90	93	94	102	93	
4-Bromofluorobenzene		91	109	105	97	107	96	

"nd" Indicates not detected at listed detection limit.

"<" Indicates elevated PQL due to dilution.

"E" Reported value is above the calibration range and is an estimate.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E003

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-052522- SW-13-2.0	FS-052522- SW-14-11	FS-052522- SW-15-9.0	FS-052522- SW-16-3.0	FS-052522- SW-17- 11.0
Date Sampled		5/25/2022	5/25/2022	5/25/2022	5/25/2022	5/25/2022
Date Analyzed	PQL	5/25/2022	5/25/2022	5/25/2022	5/25/2022	5/25/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	0.048	0.66	nd	nd	3.8
Toluene	0.10	2.0	< 2.0	nd	nd	< 2.0
Ethylbenzene	0.05	4.7	4.8	nd	nd	2.8
Total Xylenes	0.15	23 E	< 3.0	nd	nd	< 3.0
Gasoline	10	87	480	nd	nd	2100
Surrogate Recovery						
Dibromofluoromethane		87	86	86	86	81
1,2-Dichloroethane-d4		84	82	79	81	80
Toluene-d8		114	97	92	96	92
4-Bromofluorobenzene		272 int	104	107	108	104

"nd" Indicates not detected at listed detection limit.

"<" Indicates elevated PQL due to dilution.

"E" Reported value is above the calibration range and is an estimate.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E003

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
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Email: libbyenv@gmail.com

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: FS-052522-PB-10-19								
Date Analyzed: 5/25/2022								
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.26	0.26	102	104	1.6	65-135	
Toluene	0.25	0.23	0.23	92	93	0.4	65-135	
Ethylbenzene	0.25	0.28	0.27	111	108	3.6	65-135	
Total Xylenes	0.75	0.72	0.73	96	97	0.4	65-135	
Surrogate Recovery (%)								
				MS	MSD			
Dibromofluoromethane				88	88		65-135	
1,2-Dichloroethane-d4				84	85		65-135	
Toluene-d8				97	98		65-135	
4-Bromofluorobenzene				111	108		65-135	

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Melissa Harrington

Laboratory Control Sample

Date Analyzed: 5/25/2022					
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.27	107	80-120	
Toluene	0.25	0.23	94	80-120	
Ethylbenzene	0.25	0.25	99	80-120	
Total Xylenes	0.75	0.75	101	80-120	
Surrogate Recovery					
Dibromofluoromethane			94	65-135	
1,2-Dichloroethane-d4			92	65-135	
Toluene-d8			95	65-135	
4-Bromofluorobenzene			108	65-135	

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E003

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	5/25/2022	95	nd	nd
FS-052522-PB-09-11	5/25/2022	int	9500	nd
FS-052522-PB-09-11 Dup	5/25/2022	int	6800	nd
FS-052522-PB-10-19	5/25/2022	100	nd	nd
FS-052522-SW-11.6.5	5/25/2022	124	62	nd
FS-052522-SW-12-9.0	5/25/2022	94	nd	nd
FS-052522-SW-13-2.0	5/25/2022	int	14000	nd
FS-052522-SW-14-11	5/25/2022	int	11000	nd
FS-052522-SW-15-9.0	5/25/2022	127	74	nd
FS-052522-SW-16-3.0	5/25/2022	81	nd	nd
FS-052522-SW-17-11.0	5/25/2022	int	10000	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

May 31, 2022

Scott Groat
Fulcrum Environmental Consulting
207 W. Boone Avenue
Spokane, WA 99201

Dear Mr. Groat,

Please find enclosed the analytical data report for the Four Star Fuel Release Project located in Pullman, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

A handwritten signature in black ink, appearing to read "Sherry L. Chilcutt".

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE

Ph: 360-352-2110

Olympia, WA 98506

Fax: 360-352-4154

Client: Fulcrum Environmental

Address: 707 W. Boone Avenue

City: Spokane

State: WA

Zip: 99201

Phone: 509-459-9220

Fax:

Client Project #

Date: 5/26/22

Page: 1

of 2

Project Manager: Scott Groat

Project Name: Four Star Fuel Release

Location: 355 NW State Street


City, State: Pullman, WA

Collector: S. Groat

Date of Collection: 5/25/22

Email: Sgroat@fulcrum.net



	Sample Number	Depth	Time	Sample Type	Container Type															Field Notes																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
						VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	1 FS-052522-SW-18-	9.0	1630	Soil	Jar, 2x6A			X	X		X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

Relinquished by: Scott Groat

Date / Time

5/26/22 1630

Received by:

Melissa Hgt

Date / Time

5/26/22 1630

Sample Receipt

Good Condition? Y N

Cooler Temp. °C

Sample Temp. °C

Total Number of Containers

Remarks:

ML

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

3322 South Bay Road NE

Olympia, WA 98506

Ph: 360-352-2110

Fax: 360-352-4154

Chain of Custody Record

www.LibbyEnvironmental.com

Client: Fulcrum Environmental

Address:

City: State: Zip:

Phone: Fax:

Client Project #

Date: 5/26/22

Page: 2 of 2


Project Manager: Scott Groat

Project Name: Four Star Fuel Release

Location: City, State: Pullman, WA

Collector: S. Groat Date of Collection: 5/26/22

Email:

	Sample Number	Depth	Time	Sample Type	Container Type															Field Notes
						VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270			
	15-052622-PB-28-20	20	1033	Soil	100+V6A#2			X	X	X										
	-SW-29-9.0	9.0	1050																	
	-SW-30-6.5	6.5	1058																	
	-SW-31-2.0	2.0	1103																	
	-PB-32-20	20	1351																	

Relinquished by: <u>Scott Groat</u>	Date / Time: <u>5/26/22 1630</u>	Received by: <u>Melissa</u>	Date / Time: <u>5/26/22 1630</u>	Sample Receipt Good Condition? Y N Cooler Temp. °C Sample Temp. °C Total Number of Containers TAT: 24HR 48HR 5-DAY	Remarks: <div>ML</div>
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E004

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method	FS-052522- Blank	FS-052522- SW-18-9.0	FS-052522- SW-19-3.0	FS-052522- SW-20-11.0	FS-052522- SW-21-9.0
			Dup				
Date Sampled		N/A	5/25/2022	5/25/2022	5/25/2022	5/25/2022	5/25/2022
Date Analyzed	PQL	5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	2.4	nd	nd	0.10	nd
Toluene	0.10	nd	< 1.0	nd	nd	nd	nd
Ethylbenzene	0.05	nd	1.8	nd	nd	0.12	nd
Total Xylenes	0.15	nd	< 1.5	nd	nd	nd	nd
Gasoline	10	nd	450	nd	nd	48	21
Surrogate Recovery							
Dibromofluoromethane		87	84	85	89	87	89
1,2-Dichloroethane-d4		73	82	71	82	77	86
Toluene-d8		93	92	94	94	97	97
4-Bromofluorobenzene		94	103	104	99	108	113

"nd" Indicates not detected at listed detection limit.

"<" Indicates elevated PQL due to dilution.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E004

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-052522- SW-22-3.0	FS-052522- SW-23-11.0	FS-052522- SW-24-9.0	FS-052522- SW-25-3.0	FS-052522- SW-26-21.0	FS-052522- CS-27
Date Sampled		5/25/2022	5/25/2022	5/25/2022	5/25/2022	5/25/2022	5/25/2022
Date Analyzed	PQL	5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	nd	nd	0.13	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
Total Xylenes	0.15	nd	0.54	nd	nd	nd	nd
Gasoline	10	nd	14	nd	12	31	nd
Surrogate Recovery							
Dibromofluoromethane		93	88	97	92	91	91
1,2-Dichloroethane-d4		89	79	89	84	84	81
Toluene-d8		94	97	104	101	95	93
4-Bromofluorobenzene		106	110	114	103	108	107

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E004

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Olympia, WA 98506
Phone: (360) 352-2110
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Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-052622- PB-28-20	FS-052622- SW-29-9.0	FS-052622- SW-30-6.5	FS-052622- SW-30-6.5	FS-052622- SW-31-2.0	FS-052622- PB-32-20
		Dup					
Date Sampled		5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022
Date Analyzed	PQL	5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	0.038	0.061	0.066	< 0.1	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	1.6	nd
Total Xylenes	0.15	nd	nd	nd	nd	8.8	nd
Gasoline	10	nd	nd	19	nd	260	nd
Surrogate Recovery							
Dibromofluoromethane		94	97	94	97	101	104
1,2-Dichloroethane-d4		87	90	87	91	98	94
Toluene-d8		95	93	96	95	104	92
4-Bromofluorobenzene		111	108	108	116	111	108

"nd" Indicates not detected at listed detection limit.

"<" Indicates elevated PQL due to dilution.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E004

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Email: libbyenv@gmail.com

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: FS-052522-SW-19-3.0								
Date Analyzed: 5/26/2022								
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.26	0.28	104	111	6.5	65-135	
Toluene	0.25	0.22	0.24	90	96	6.8	65-135	
Ethylbenzene	0.25	0.24	0.26	97	105	7.4	65-135	
Total Xylenes	0.75	0.78	0.76	104	101	2.5	65-135	
Surrogate Recovery (%)								
				MS	MSD			
Dibromofluoromethane				87	91		65-135	
1,2-Dichloroethane-d4				80	89		65-135	
Toluene-d8				93	96		65-135	
4-Bromofluorobenzene				108	114		65-135	

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Melissa Harrington

Laboratory Control Sample

Date Analyzed: 5/26/2022					
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.27	108	80-120	
Toluene	0.25	0.23	92	80-120	
Ethylbenzene	0.25	0.26	106	80-120	
Total Xylenes	0.75	0.78	104	80-120	
Surrogate Recovery					
Dibromofluoromethane			86	65-135	
1,2-Dichloroethane-d4			75	65-135	
Toluene-d8			94	65-135	
4-Bromofluorobenzene			108	65-135	

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22E004

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Olympia, WA 98506

Phone: (360) 352-2110

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Email: libbyenv@gmail.com

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	5/26/2022	99	nd	nd
FS-052522-SW-18-9.0	5/26/2022	int	6700	nd
FS-052522-SW-19-3.0	5/26/2022	117	nd	nd
FS-052522-SW-20-11.0	5/26/2022	int	290	nd
FS-052522-SW-21-9.0	5/26/2022	int	930	nd
FS-052522-SW-22-3.0	5/26/2022	98	nd	nd
FS-052522-SW-23-11.0	5/26/2022	113	nd	nd
FS-052522-SW-24-9.0	5/26/2022	106	nd	nd
FS-052522-SW-24-9.0 Dup	5/26/2022	105	nd	nd
FS-052522-SW-25-3.0	5/26/2022	105	nd	nd
FS-052522-SW-26-21.0	5/26/2022	120	nd	nd
FS-052522-CS-27	5/26/2022	108	nd	nd
FS-052522-CS-27 Dup	5/26/2022	113	nd	nd
FS-052622-PB-28-20	5/26/2022	105	nd	nd
FS-052622-SW-29-9.0	5/26/2022	126	nd	nd
FS-052622-SW-30-6.5	5/26/2022	int	83	nd
FS-052622-SW-31-2.0	5/26/2022	int	4900	nd
FS-052622-PB-32-20	5/26/2022	126	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

June 9, 2022

Scott Groat
Fulcrum Environmental Consulting
207 W. Boone Avenue
Spokane, WA 99201

Dear Mr. Groat,

Please find enclosed the analytical data report for the Four Star Fuel Release Project located in Pullman, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

A handwritten signature in black ink, appearing to read "Sherry L. Chilcutt".

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE

Ph: 360-352-2110

Olympia, WA 98506

Fax: 360-352-4154

Client: Fulcrum Environmental

Address: 707 W. Boone Avenue

City: Spokane State: WA Zip: 99201

Phone: 509-459-9220

Fax:

Client Project #

Date: 5/26/22

Page: 1 of 2

Project Manager: Scott Groat


Project Name: Four Star Fuel Release

Location: 355 NW State Street City, State: Pullman, WA

Collector: S. Groat

Date of Collection: 5/25/22

Email: Sgroat@efulcrum.net

																				
Sample Number	Depth	Time	Sample Type	Container Type		VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270			Field Notes
1FS-052522-SW-18-	9.0	1638	Soil	bag, 2x VOA			X	X		X										
2	-19-	3.0																		
3	-20-	11.0																		
4	-21-	9.0																		
5	-22-	3.0																		
6	-23-	11.0																		
7	-24-	9.0																		
8	-25-	3.0																		
9	-26-	21.0																		
10	-27	1802																		
11FS-052422-MB-01		1153					X	X		X										Holds until further notice
12	-02	1201					X	X		X										collected 5/24
13	-03	1239					X	X		X										
14	-04	1339					X	X		X										
15	-05	1427					X	X		X										
16																				
17																				

Relinquished by: <u>Scott Groat</u>	Date / Time: <u>5/26/22 1630</u>	Received by: <u>Melissa Hgt</u>	Date / Time: <u>5/26/22 1630</u>	Sample Receipt Good Condition? Y N Cooler Temp. °C Sample Temp. °C Total Number of Containers TAT: 24HR 48HR 5-DAY	Remarks: X Added per Scott in the field 6-2-22 -MH 6-3-22 ML
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE

Ph: 360-352-2110

Olympia, WA 98506

Fax: 360-352-4154

Date: 5/26/22

Page: 2 of 2

Client: Fulcrum Environmental

Project Manager: Scott Groat

Address:

Project Name: Four Star Fuel Release

City:

State:

Zip:

Location:

City, State: Pullman, WA

Phone:

Fax:

Collector: S. Groat

Date of Collection: 5/26/22

Client Project #

Email:



Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270	Field Notes
115-052622-PB-28-20	20	1033	Soil	Pan + 6A x 2			X	X	X								
2	-SW-29-9.0	1050															
3	-SW-30-6.5	1058															
4	-SW-31-2.0	1103															
5	-PB-32-20	1351															
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	

Relinquished by: <i>Scott Groat</i>	Date / Time: 5/26/22 1630	Received by: <i>Melissa</i>	Date / Time: 5/26/22 1630	Sample Receipt Good Condition? Y N Cooler Temp. °C Sample Temp. °C Total Number of Containers TAT: 24HR 48HR 5-DAY	Remarks: <div>ML</div>
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E004B

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method	FS-052422- Blank	FS-052422- MB-01	FS-052422- MB-02	FS-052422- MB-03	FS-052422- MB-04	FS-052422- MB-05
Date Sampled		N/A	5/24/2022	5/24/2022	5/24/2022	5/24/2022	5/24/2022	5/24/2022
Date Analyzed	PQL	6/5/2022	6/5/2022	6/5/2022	6/5/2022	6/5/2022	6/5/2022	6/5/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	0.092	0.12	0.84	0.89	0.19	
Toluene	0.10	nd	0.11	0.16	nd	0.14	0.096	
Ethylbenzene	0.05	nd	0.18	0.50	7.50	0.37	0.60	
Total Xylenes	0.15	nd	0.37	0.50	0.99	0.74	0.46	
Gasoline	10	nd	23	190	1500 E	1200 E	270 E	
Surrogate Recovery								
Dibromofluoromethane		119	118	115	73	82	99	
1,2-Dichloroethane-d4		130	126	124	92	97	82	
Toluene-d8		48 S	69	97	75	89	105	
4-Bromofluorobenzene		66	93	105	160 S	138 S	101	

"nd" Indicates not detected at listed detection limit.

"E" Reported value is above the calibration range and is an estimate.

"S" Spike compound recovery is outside acceptance limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E004B

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: L22F013								
Date Analyzed: 6/5/2022								
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.21	0.30	85	120	33.6	65-135	
Toluene	0.25	0.17	0.21	67	83	21.9	65-135	
Ethylbenzene	0.25	0.18	0.24	73	95	26.3	65-135	
Total Xylenes	0.75	0.55	0.71	73	94	25.6	65-135	
Surrogate Recovery (%)				MS	MSD			
Dibromofluoromethane				120	156 S		65-135	
1,2-Dichloroethane-d4				124	166 S		65-135	
Toluene-d8				56 S	68		65-135	
4-Bromofluorobenzene				122	95		65-135	

ACCEPTABLE RPD IS 35%

"S" Spike compound recovery is outside acceptance limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

Date Analyzed:	6/5/2022				
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.23	94	80-120	
Toluene	0.25	0.25	98	80-120	
Ethylbenzene	0.25	0.21	84	80-120	
Total Xylenes	0.75	0.63	84	80-120	
Surrogate Recovery					
Dibromofluoromethane			119	65-135	
1,2-Dichloroethane-d4			128	65-135	
Toluene-d8			50 S	65-135	
4-Bromofluorobenzene			94	65-135	

"S" Spike compound recovery is outside acceptance limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E004B

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
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Email: libbyenv@gmail.com

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	6/3/2022	96	nd	nd
FS-052422-MB-01	6/3/2022	int	680	nd
FS-052422-MB-01 Dup	6/3/2022	int	540	nd
FS-052422-MB-02	6/3/2022	int	1000	nd
FS-052422-MB-03	6/3/2022	int	1500	nd
FS-052422-MB-04	6/3/2022	int	1200	nd
FS-052422-MB-05	6/3/2022	int	1400	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Randolph Kraus



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

May 31, 2022

Scott Groat
Fulcrum Environmental Consulting
207 W. Boone Avenue
Spokane, WA 99201

Dear Mr. Groat,

Please find enclosed the analytical data report for the Four Star Fuel Release Project located in Pullman, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

A handwritten signature in black ink, appearing to read "Sherry L. Chilcutt".

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE

Ph: 360-352-2110

Olympia, WA 98506

Fax: 360-352-4154

Client: Fulcrum Environmental

Address: 207 W. Boone Ave.

City: Spokane

State: WA

Zip: 99201

Phone: 509-459-9220

Fax:

Client Project #

Date: 5/26/22

Page: 1 of 1

Project Manager: Scott Groat


Project Name: Four Star Fuel Release

Location: 355 NW State St. City, State: Pullman, WA

Collector: S. Groat

Date of Collection: 5/26/22

Email: sgroat@efulcrum.net

	Sample Number	Depth	Time	Sample Type	Container Type													Field Notes	
						VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270		
1	FS-052622-SW-33	9.0	1401	Soil	Inc + 2x Vol			X	X	X									
2	-34	6.5	1409					X	X	X									
3	-35	2.0	1418					X	X	X									
4	PB-36	20.0	1452																
5	FS-052622-SW-37	9.0	1511																
6		38-6.5	1514																
7		39-2.0	1521																
8		40-9.0	1544																
9		41-6.5	1550																
10		42-2.0	1620																
11	-DP-01	2.0	1611																
12	-02		1413																
13	-03		1511																
14	-04		1632																
15																			
16																			
17																			

Relinquished by: <u>Scott Groat</u>	Date / Time: <u>5/26/22 1642</u>	Received by: <u>Theresa Hgt</u>	Date / Time: <u>5/26/22 1642</u>	Sample Receipt Good Condition? <u>Y</u> <u>N</u> Cooler Temp. <u>°C</u> Sample Temp. <u>°C</u> Total Number of Containers <u> </u>		Remarks: <u>Hold DP samples</u> <u>ML</u> TAT: 24HR 48HR 5-DAY
Relinquished by:	Date / Time:	Received by:	Date / Time:			
Relinquished by:	Date / Time:	Received by:	Date / Time:			

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

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Ph: 360-352-2110

Olympia, WA 98506

Fax: 360-352-4154

Date: 5/27/22

Page: 1 of 1

Client: Fulcrum Environmental

Project Manager: Scott Groat

Address: 207 W Boone Ave

Project Name: Four Star Fuel Release

City: Spokane State: WA Zip: 99201

Location: 355 NW State St City, State: Pullman, WA


Phone: Fax:

Collector: E. Dicken Date of Collection: 5/27/22

Client Project #

Email: ethan.dicken@efulcrum.net



	Sample Number	Depth	Time	Sample Type	Container Type															Field Notes
						VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	cPAH 8270	PAH 8270	Semi Vol 8270			
	1 FS-052722-9B-43-20	1230	1230	Soil	4oz Jar VOC x 2			X	X		X									
	2 FS-052722-DP-05	1235						X	X		X									Hold
	3 FS-052722-SW-44-9.0	1300																		
	4 ↓ 45-6.0	1305																		
	5 ↓ 46-2.0	1310																		
	6 ↓ PB-47-22.0	1410																		
	7																			
	8																			
	9																			
	10																			
	11																			
	12																			
	13																			
	14																			
	15																			
	16																			
	17																			

Relinquished by:	Date / Time: 052722	Received by:	Date / Time: 5/27/22 1500	Sample Receipt Good Condition? Y N Cooler Temp. °C Sample Temp. °C Total Number of Containers		Remarks: Hold DP samples ML TAT: 24HR 48HR 5-DAY
Relinquished by:	Date / Time:	Received by:	Date / Time:			
Relinquished by:	Date / Time:	Received by:	Date / Time:			

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E005

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description	Method	FS-052622-Blank	FS-052622-SW-33-9.0	FS-052622-SW-34-6.5	FS-052622-SW-35-2.0	FS-052622-PB-36-20.0	FS-052622-SW-37-9.0
Date Sampled	N/A	5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022
Date Analyzed	PQL	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	nd	< 0.05	nd	nd
Toluene	0.10	nd	nd	nd	0.45	nd	nd
Ethylbenzene	0.05	nd	nd	nd	1.3	nd	nd
Total Xylenes	0.15	nd	nd	nd	8.5	nd	nd
Gasoline	10	nd	nd	nd	180	nd	nd
Surrogate Recovery							
Dibromofluoromethane	99	100	91	85	93	94	
1,2-Dichloroethane-d4	86	98	83	75	84	88	
Toluene-d8	89	94	99	100	93	92	
4-Bromofluorobenzene	88	97	102	103	95	93	

"nd" Indicates not detected at listed detection limit.

"<" Indicates elevated PQL due to dilution.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

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Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-052622- SW-37-9.0	FS-052622- SW-38-6.5	FS-052622- SW-39-2.0	FS-052622- SW-40-9.0	FS-052622- SW-41-6.5	FS-052622- SW-42-2.0
		Dup					
Date Sampled		5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022
Date Analyzed	PQL	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	0.18	nd	nd	nd	nd
Toluene	0.10	nd	<1.0	nd	nd	nd	nd
Ethylbenzene	0.05	nd	3.4	0.088	nd	nd	nd
Total Xylenes	0.15	nd	<1.5	0.69	nd	nd	nd
Gasoline	10	nd	360	20	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		92	76	87	90	91	92
1,2-Dichloroethane-d4		89	70	81	82	87	83
Toluene-d8		93	94	104	94	98	94
4-Bromofluorobenzene		99	105	116	96	104	86

"nd" Indicates not detected at listed detection limit.

"<" Indicates elevated PQL due to dilution.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

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Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-052722- PB-43-20	FS-052722- SW-44-9.0	FS-052722- SW-45-6.0	FS-052722- SW-46-2.0	FS-052722- PB-47-22.0	FS-052722- PB-47-22.0 Dup
Date Sampled		5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022
Date Analyzed	PQL	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	0.033	nd	< 0.4	nd	nd	nd
Toluene	0.10	nd	nd	< 2.0	nd	nd	nd
Ethylbenzene	0.05	nd	nd	1.3	nd	nd	nd
Total Xylenes	0.15	nd	nd	7.3	nd	nd	nd
Gasoline	10	nd	nd	420	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		84	85	87	91	81	84
1,2-Dichloroethane-d4		78	75	79	85	73	77
Toluene-d8		98	95	99	95	95	97
4-Bromofluorobenzene		99	99	100	102	97	100

"nd" Indicates not detected at listed detection limit.

"<" Indicates elevated PQL due to dilution.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

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QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: FS-052622-SW-37-9.0								
Date Analyzed: 5/27/2022								
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.26	0.27	104	107	2.0	65-135	
Toluene	0.25	0.24	0.23	95	90	5.2	65-135	
Ethylbenzene	0.25	0.26	0.25	103	100	3.7	65-135	
Total Xylenes	0.75	0.75	0.74	99	98	1.3	65-135	
Surrogate Recovery (%)								
				MS	MSD			
Dibromofluoromethane				89	82	65-135		
1,2-Dichloroethane-d4				85	78	65-135		
Toluene-d8				95	99	65-135		
4-Bromofluorobenzene				105	104	65-135		

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Melissa Harrington

Laboratory Control Sample

Date Analyzed: 5/27/2022					
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.26	102	80-120	
Toluene	0.25	0.23	93	80-120	
Ethylbenzene	0.25	0.24	97	80-120	
Total Xylenes	0.75	0.73	98	80-120	
Surrogate Recovery					
Dibromofluoromethane			94	65-135	
1,2-Dichloroethane-d4			91	65-135	
Toluene-d8			95	65-135	
4-Bromofluorobenzene			110	65-135	

ANALYSES PERFORMED BY: Melissa Harrington

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Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	5/27/2020	115	nd	nd
FS-052622-SW-33-9.0	5/27/2020	123	nd	nd
FS-052622-SW-33-9.0 Dup	5/27/2020	121	nd	nd
FS-052622-SW-34-6.5	5/27/2020	int	69	nd
FS-052622-SW-35-2.0	5/27/2020	int	1500	nd
FS-052622-PB-36-20.0	5/27/2020	103	nd	nd
FS-052622-SW-37-9.0	5/27/2020	97	nd	nd
FS-052622-SW-38-6.5	5/27/2020	int	13000	nd
FS-052622-SW-39-2.0	5/27/2020	int	540	nd
FS-052622-SW-40-9.0	5/27/2020	92	nd	nd
FS-052622-SW-41-6.5	5/27/2020	96	nd	nd
FS-052622-SW-42-2.0	5/27/2020	130	98	nd
FS-052622-SW-42-2.0 Dup	5/27/2020	120	110	nd
FS-052722-PB-43-20	5/27/2020	107	nd	nd
FS-052722-SW-44-9.0	5/27/2020	int	82	nd
FS-052722-SW-45-6.0	5/27/2020	int	6600	nd
FS-052722-SW-46-2.0	5/27/2020	int	13000	nd
FS-052722-PB-47-22.0	5/27/2020	129	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

May 31, 2022

Scott Groat
Fulcrum Environmental Consulting
207 W. Boone Avenue
Spokane, WA 99201

Dear Mr. Groat,

Please find enclosed the analytical data report for the Four Star Fuel Release Project located in Pullman, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

A handwritten signature in black ink, appearing to read "Sherry L. Chilcutt".

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE

Ph: 360-352-2110

Olympia, WA 98506

Fax: 360-352-4154

Client: Fulcrum Environmental

Address: 207 W. Boore Ave.

City: Spokane

State: WA

Zip: 99201

Phone: 509-459-9220

Fax:

Client Project #

Date: 5/26/22

Page: 1 of 1

Project Manager: Scott Groat

Project Name: Four Star Fuel Release


Location: 355 NW State St. City, State: Pullman, WA

Collector: S. Groat

Date of Collection: 5/26/22

Email: sgroat@efulcrum.net



	Sample Number	Depth	Time	Sample Type	Container Type																Field Notes
						VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270				
1	FS-052622-SW-33	9.0	1401	Soi L	Inc + 2x VOA			X	X	X											
2	-34	6.5	1409					X	X	X											
3	-35	2.0	1418					X	X	X											
4	PB-36	20.0	1452																		
5	FS-052622-SW-37	9.0	1511																		
6		38-6.5	1514																		
7		39-2.0	1521																		
8		40-9.0	1544																		
9		41-6.5	1550																		
10		42-2.0	1620																		
11	-DP-01	2.0	1611																		
12	-02		1413																		
13	-03		1511																		
14	-04		1632																		
15																					
16																					
17																					

Relinquished by: <u>Scott Groat</u>	Date / Time: <u>5/26/22 1642</u>	Received by: <u>Theresa Hgt</u>	Date / Time: <u>5/26/22 1642</u>	Sample Receipt Good Condition? <u>Y</u> <u>N</u> Cooler Temp. <u>°C</u> Sample Temp. <u>°C</u> Total Number of Containers <u> </u>		Remarks: <u>Hold DP samples</u> <u>ML</u> TAT: 24HR 48HR 5-DAY
Relinquished by:	Date / Time:	Received by:	Date / Time:			
Relinquished by:	Date / Time:	Received by:	Date / Time:			

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - Originator

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Ph: 360-352-2110

Olympia, WA 98506

Fax: 360-352-4154

Date: 5/27/22

Page: 1 of 1

Client: Fulcrum Environmental

Project Manager: Scott Groat

Address: 207 W Boone Ave

Project Name: Four Star Fuel Release

City: Spokane State: WA Zip: 99201

Location: 355 NW State St City, State: Pullman, WA


Phone: Fax:

Collector: E. Dicken Date of Collection: 5/27/22

Client Project #

Email: ethan.dicken@efulcrum.net



	Sample Number	Depth	Time	Sample Type	Container Type															Field Notes
						VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	cPAH 8270	PAH 8270	Semi Vol 8270			
	1 FS-052722-9B-43-20	1230	1230	Soil	4oz Jar VOC x 2			X	X		X									
	2 FS-052722-DP-05	1235						X	X		X								Hold	
	3 FS-052722-SW-44-9.0	1300																		
	4 ↓ 45-6.0	1305																		
	5 ↓ 46-2.0	1310																		
	6 ↓ PB-47-22.0	1410																		
	7																			
	8																			
	9																			
	10																			
	11																			
	12																			
	13																			
	14																			
	15																			
	16																			
	17																			

Relinquished by:	Date / Time: 052722	Received by:	Date / Time: 5/27/22 1500	Sample Receipt Good Condition? Y N Cooler Temp. °C Sample Temp. °C Total Number of Containers		Remarks: Hold DP samples ML TAT: 24HR 48HR 5-DAY
Relinquished by:	Date / Time:	Received by:	Date / Time:			
Relinquished by:	Date / Time:	Received by:	Date / Time:			

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

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Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method	FS-052622- Blank	FS-052622- SW-33-9.0	FS-052622- SW-34-6.5	FS-052622- SW-35-2.0	FS-052622- PB-36-20.0	FS-052622- SW-37-9.0
Date Sampled		N/A		5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022
Date Analyzed	PQL	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	nd	< 0.05	nd	nd	nd
Toluene	0.10	nd	nd	nd	0.45	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	1.3	nd	nd	nd
Total Xylenes	0.15	nd	nd	nd	8.5	nd	nd	nd
Gasoline	10	nd	nd	nd	180	nd	nd	nd
Surrogate Recovery								
Dibromofluoromethane		99	100	91	85	93	94	94
1,2-Dichloroethane-d4		86	98	83	75	84	88	88
Toluene-d8		89	94	99	100	93	92	92
4-Bromofluorobenzene		88	97	102	103	95	93	93

"nd" Indicates not detected at listed detection limit.

"<" Indicates elevated PQL due to dilution.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

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Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-052622- SW-37-9.0	FS-052622- SW-38-6.5	FS-052622- SW-39-2.0	FS-052622- SW-40-9.0	FS-052622- SW-41-6.5	FS-052622- SW-42-2.0
		Dup					
Date Sampled		5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022
Date Analyzed	PQL	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	0.18	nd	nd	nd	nd
Toluene	0.10	nd	<1.0	nd	nd	nd	nd
Ethylbenzene	0.05	nd	3.4	0.088	nd	nd	nd
Total Xylenes	0.15	nd	<1.5	0.69	nd	nd	nd
Gasoline	10	nd	360	20	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		92	76	87	90	91	92
1,2-Dichloroethane-d4		89	70	81	82	87	83
Toluene-d8		93	94	104	94	98	94
4-Bromofluorobenzene		99	105	116	96	104	86

"nd" Indicates not detected at listed detection limit.

"<" Indicates elevated PQL due to dilution.

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ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

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Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-052722- PB-43-20	FS-052722- SW-44-9.0	FS-052722- SW-45-6.0	FS-052722- SW-46-2.0	FS-052722- PB-47-22.0	FS-052722- PB-47-22.0 Dup
Date Sampled		5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022
Date Analyzed	PQL	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022	5/27/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	0.033	nd	< 0.4	nd	nd	nd
Toluene	0.10	nd	nd	< 2.0	nd	nd	nd
Ethylbenzene	0.05	nd	nd	1.3	nd	nd	nd
Total Xylenes	0.15	nd	nd	7.3	nd	nd	nd
Gasoline	10	nd	nd	420	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		84	85	87	91	81	84
1,2-Dichloroethane-d4		78	75	79	85	73	77
Toluene-d8		98	95	99	95	95	97
4-Bromofluorobenzene		99	99	100	102	97	100

"nd" Indicates not detected at listed detection limit.

"<" Indicates elevated PQL due to dilution.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

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QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: FS-052622-SW-37-9.0								
Date Analyzed: 5/27/2022								
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.26	0.27	104	107	2.0	65-135	
Toluene	0.25	0.24	0.23	95	90	5.2	65-135	
Ethylbenzene	0.25	0.26	0.25	103	100	3.7	65-135	
Total Xylenes	0.75	0.75	0.74	99	98	1.3	65-135	
Surrogate Recovery (%)								
				MS	MSD			
Dibromofluoromethane				89	82		65-135	
1,2-Dichloroethane-d4				85	78		65-135	
Toluene-d8				95	99		65-135	
4-Bromofluorobenzene				105	104		65-135	

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Melissa Harrington

Laboratory Control Sample

Date Analyzed: 5/27/2022					
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.26	102	80-120	
Toluene	0.25	0.23	93	80-120	
Ethylbenzene	0.25	0.24	97	80-120	
Total Xylenes	0.75	0.73	98	80-120	
Surrogate Recovery					
Dibromofluoromethane			94	65-135	
1,2-Dichloroethane-d4			91	65-135	
Toluene-d8			95	65-135	
4-Bromofluorobenzene			110	65-135	

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22E005

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	5/27/2022	115	nd	nd
FS-052622-SW-33-9.0	5/27/2022	123	nd	nd
FS-052622-SW-33-9.0 Dup	5/27/2022	121	nd	nd
FS-052622-SW-34-6.5	5/27/2022	int	69	nd
FS-052622-SW-35-2.0	5/27/2022	int	1500	nd
FS-052622-PB-36-20.0	5/27/2022	103	nd	nd
FS-052622-SW-37-9.0	5/27/2022	97	nd	nd
FS-052622-SW-38-6.5	5/27/2022	int	13000	nd
FS-052622-SW-39-2.0	5/27/2022	int	540	nd
FS-052622-SW-40-9.0	5/27/2022	92	nd	nd
FS-052622-SW-41-6.5	5/27/2022	96	nd	nd
FS-052622-SW-42-2.0	5/27/2022	130	98	nd
FS-052622-SW-42-2.0 Dup	5/27/2022	120	110	nd
FS-052722-PB-43-20	5/27/2022	107	nd	nd
FS-052722-SW-44-9.0	5/27/2022	int	82	nd
FS-052722-SW-45-6.0	5/27/2022	int	6600	nd
FS-052722-SW-46-2.0	5/27/2022	int	13000	nd
FS-052722-PB-47-22.0	5/27/2022	129	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

June 9, 2022

Scott Groat
Fulcrum Environmental Consulting
207 W. Boone Avenue
Spokane, WA 99201

Dear Mr. Groat,

Please find enclosed the analytical data report for the Four Star Fuel Release Project located in Pullman, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

A handwritten signature in black ink, appearing to read "Sherry L. Chilcutt".

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

www.LibbyEnvironmental.com

TAT:	24HR	48HR	5-DAY
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Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE

Ph: 360-352-2110

Olympia, WA 98506

Fax: 360-352-4154

Date: 5/27/22

Page: 1 of 1

Client: Fulcrum Environmental

Project Manager: Scott Groat

Address: 207 W Boone Ave

Project Name: Four Star Fuel Release

City: Spokane State: WA Zip: 99201

Location: 355 NW State St City, State: Pullman, WA


Phone: Fax:

Collector: E. Dicken Date of Collection: 5/27/22

Client Project #

Email: ethan.dicken@fulcrum.net



	Sample Number	Depth	Time	Sample Type	Container Type															Field Notes
						VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270			
	1FS-052722-43-43	20	1230	Soil	4oz Jars VOC x 2			X	X	X										
	2FS-052722-DP-05		1235					X	X	X										Hold added per Scott in field, Std TAT-MH 6-3-22
	3FS-052722-SW-44	9.0	1300																	
	4	45	1305																	
	5	46	1310																	
	6	PB-47	1410																	
	7																			
	8																			
	9																			
	10																			
	11																			
	12																			
	13																			
	14																			
	15																			
	16																			
	17																			

Relinquished by:	Date / Time: 052722	Received by:	Date / Time: 5/27/22 1500	Sample Receipt Good Condition? Y N Cooler Temp. °C Sample Temp. °C Total Number of Containers TAT: 24HR 48HR 5-DAY	Remarks: Hold DP samples ML
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E005B

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method Blank	FS-052622- DP-01	FS-052622- DP-02	FS-052622- DP-03	FS-052622- DP-03 Dup	FS-052622- DP-04
Date Sampled		N/A	5/26/2022	5/26/2022	5/26/2022	5/26/2022	5/26/2022
Date Analyzed	PQL	6/6/2022	6/6/2022	6/6/2022	6/6/2022	6/6/2022	6/6/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	0.11	nd	nd	nd	nd
Toluene	0.10	nd	0.29	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	0.068	nd	nd	nd
Total Xylenes	0.15	nd	nd	0.56	nd	nd	nd
Gasoline	10	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		117	130	130	132	136 S	114
1,2-Dichloroethane-d4		121	132	134	137 S	141 S	113
Toluene-d8		95	96	104	95	98	95
4-Bromofluorobenzene		94	99	114	96	95	112

"nd" Indicates not detected at listed detection limit.

"S" Spike compound recovery is outside acceptance limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Alex Randolph

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E005B

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-052722- DP-05
Date Sampled		5/27/2022
Date Analyzed	PQL	6/6/2022
	(mg/kg)	(mg/kg)
Benzene	0.02	nd
Toluene	0.10	nd
Ethylbenzene	0.05	nd
Total Xylenes	0.15	nd
Gasoline	10	nd
Surrogate Recovery		
Dibromofluoromethane		136 S
1,2-Dichloroethane-d4		141 S
Toluene-d8		97
4-Bromofluorobenzene		94

"nd" Indicates not detected at listed detection limit.

"S" Spike compound recovery is outside acceptance limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Alex Randolph

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # F22E005B

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: FS-052622-DP-03								
Date Analyzed: 6/6/2022								
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.30	0.32	120	128	6.5	65-135	
Toluene	0.25	0.32	0.33	126	131	4.0	65-135	
Ethylbenzene	0.25	0.23	0.24	91	97	6.4	65-135	
Total Xylenes	0.75	0.64	0.68	85	91	6.8	65-135	
Surrogate Recovery (%)								
				MS	MSD			
Dibromofluoromethane				127	127		65-135	
1,2-Dichloroethane-d4				134	134		65-135	
Toluene-d8				101	99		65-135	
4-Bromofluorobenzene				101	104		65-135	

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Alex Randolph

Laboratory Control Sample

Date Analyzed: 6/6/2022					
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.29	115	80-120	
Toluene	0.25	0.29	115	80-120	
Ethylbenzene	0.25	0.27	108	80-120	
Total Xylenes	0.75	0.68	90	80-120	
Surrogate Recovery					
Dibromofluoromethane			111	65-135	
1,2-Dichloroethane-d4			112	65-135	
Toluene-d8			99	65-135	
4-Bromofluorobenzene			106	65-135	

ANALYSES PERFORMED BY: Alex Randolph

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22E005B

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	5/27/2022	108	nd	nd
Method Blank	6/3/2022	97	nd	nd
FS-052622-DP-01	5/27/2022	111	nd	nd
FS-052622-DP-02	5/27/2022	int	2400	nd
FS-052622-DP-03	5/27/2022	125	nd	nd
FS-052622-DP-04	5/27/2022	int	1900	nd
FS-052722-DP-05	6/3/2022	102	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Randolph Kraus



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

June 8, 2022

Scott Groat
Fulcrum Environmental Consulting
207 W. Boone Avenue
Spokane, WA 99201

Dear Mr. Groat,

Please find enclosed the analytical data report for the Four Star Fuel Spill Project located in Pullman, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

A handwritten signature in black ink, appearing to read "Sherry L. Chilcutt".

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

www.LibbyEnvironmental.com

Fax: 360-352-4154

Page: 2 of 2

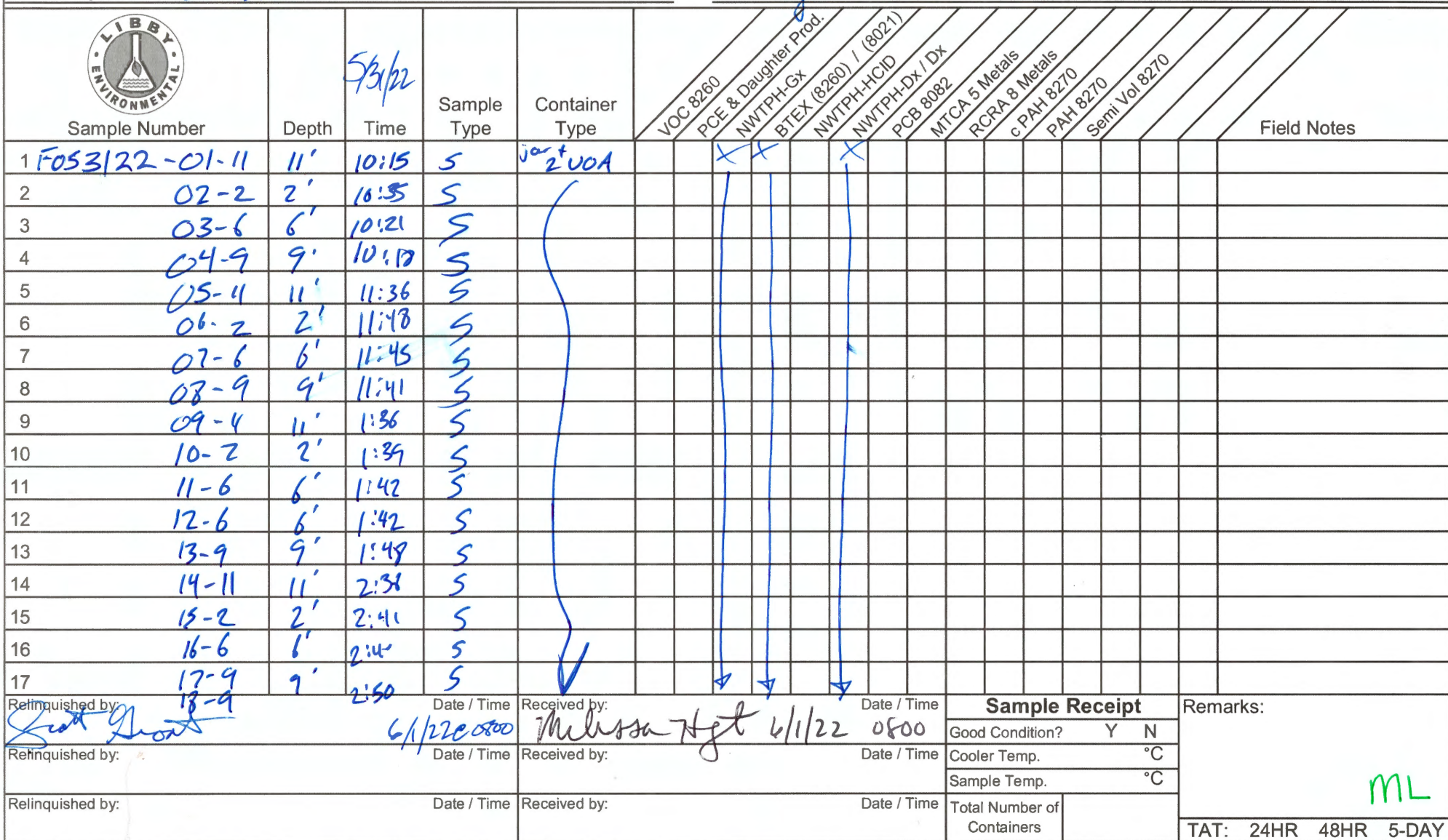
Project Manager: Scott Groat

Project Name: Four Star Fuel Spill

Location: Pullman City, State: WA

Collector: Trent Date of Collection: 5/31/12

Email: Sqroot@efuburn.net



Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Client: Fulcrum Environmental

Address: 207 W. Boone Ave.

City: Spokane State: WA Zip: 99201

Phone: 509-459-9220 Fax:

Client Project # 223516.00

Date: 6/1/2022 Page: 1 of 1

Project Manager: Scott Groat

Project Name: Four Star Fuel Release

Location: 355 NW State St. City, State: Plum, WA

Collector: S. Groat & R. Groves Date of Collection: 6/1/22

Email: Sgroat@fulcrum.net

Sample Number	Depth	Time	Sample Type	Container Type													Field Notes
					VOA 8021B	VOA 8021B BTEX Only	VOA 8260	SEMI VOL 8270	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	PAH 8270	PCB's 8082	MTCA 5 Metals			
1	FS-060122-PB-19-11	919	Soil	Jar + x2 VOA's	X				X	X							
2	-SW-20-2.0	925															
3	-SW-21-6.0	928															
4	-SW-22-9.0	933															
5	-PB-23-11	1357															
6	-SW-24-2.0	1412															
7	-SW-25-6.0	1409															
8	-SW-26-9.0	1402															
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	

Relinquished by:	Date / Time	Received by:	Date / Time	Sample Receipt:	Remarks: Hold SW samples for 6/2/22 ML TAT: 24HR 48HR 5-DAY
<u>Red Curran</u>	<u>6/1/22 2:48</u>	<u>Melissa</u>	<u>6/1/22 1448</u>	Good Condition?	
Relinquished by:	Date / Time	Received by:	Date / Time	Cold?	
Relinquished by:	Date / Time	Received by:	Date / Time	Seals Intact?	
				Total Number of Containers	

Libby Environmental, Inc.

FOUR STAR FUEL SPILL PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22E006

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method Blank	F053122- 01-11	F053122- 02-2	F053122- 03-6	F053122- 04-9	F053122- 05-11
Date Sampled		N/A	5/31/2022	5/31/2022	5/31/2022	5/31/2022	5/31/2022
Date Analyzed	PQL	6/1/2022	6/1/2022	6/1/2022	6/1/2022	6/1/2022	6/1/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	< 0.1	0.078	nd	nd
Toluene	0.10	nd	nd	< 0.5	nd	nd	nd
Ethylbenzene	0.05	nd	nd	< 0.25	nd	nd	nd
Total Xylenes	0.15	nd	nd	< 0.75	nd	nd	nd
Gasoline	10	nd	nd	95	21	nd	nd
Surrogate Recovery							
Dibromofluoromethane		97	98	97	98	103	102
1,2-Dichloroethane-d4		87	93	95	96	102	95
Toluene-d8		92	91	100	92	94	92
4-Bromofluorobenzene		92	95	105	114	105	99

"nd" Indicates not detected at listed detection limit.

"<" Indicates elevated PQL due to dilution.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL SPILL PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22E006

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		F053122-06-2	F053122-07-6	F053122-08-9	F053122-09-11	F053122-09-11 Dup	F053122-10-2
Date Sampled		5/31/2022	5/31/2022	5/31/2022	5/31/2022	5/31/2022	5/31/2022
Date Analyzed	PQL	6/1/2022	6/1/2022	6/1/2022	6/1/2022	6/1/2022	6/1/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	0.10	nd	nd	nd	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
Total Xylenes	0.15	nd	nd	nd	nd	nd	nd
Gasoline	10	20	nd	nd	nd	nd	25
Surrogate Recovery							
Dibromofluoromethane		100	101	100	96	104	103
1,2-Dichloroethane-d4		98	99	94	88	103	105
Toluene-d8		100	93	92	95	93	100
4-Bromofluorobenzene		109	109	103	99	108	108

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL SPILL PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22E006

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		F053122- 11-6	F053122- 12-6	F053122- 13-9	F053122- 14-11	F053122- 14-11 Dup	F053122- 15-2
Date Sampled		5/31/2022	5/31/2022	5/31/2022	5/31/2022	5/31/2022	5/31/2022
Date Analyzed	PQL	6/1/2022	6/1/2022	6/2/2022	6/1/2022	6/1/2022	6/2/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	0.038	nd	nd	nd	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	0.19	nd	nd	nd	nd
Total Xylenes	0.15	nd	nd	nd	nd	nd	nd
Gasoline	10	28	32	22	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		104	95	100	105	105	97
1,2-Dichloroethane-d4		102	97	92	102	102	83
Toluene-d8		100	106	101	93	98	93
4-Bromofluorobenzene		112	109	109	98	97	103

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL SPILL PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22E006

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		F053122- 16-6	F053122- 17-9	F053122- 18-9	FS-060122- PB-19-11	FS-060122- SW-20-2.0	FS-060122- SW-21-6.0
Date Sampled		5/31/2022	5/31/2022	5/31/2022	6/1/2022	6/1/2022	6/1/2022
Date Analyzed	PQL	6/2/2022	6/2/2022	6/2/2022	6/1/2022	6/2/2022	6/2/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	0.20	0.054	nd	nd	0.13	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	2.1	0.85	nd	nd	nd	nd
Total Xylenes	0.15	0.26	nd	nd	nd	nd	nd
Gasoline	10	160	64	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		90	105	105	100	113	115
1,2-Dichloroethane-d4		92	107	101	96	111	109
Toluene-d8		100	106	97	95	87	91
4-Bromofluorobenzene		110	113	109	93	112	103

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL SPILL PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22E006

Client Project # 223516.00

3322 South Bay Road NE

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Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-060122- SW-22-9.0	FS-060122- PB-23-11	FS-060122- SW-24-2.0	FS-060122- SW-25-6.0	FS-060122- SW-26-9.0	Method Blank
Date Sampled		6/1/2022	6/1/2022	5/31/2022	5/31/2022	6/1/2022	N/A
Date Analyzed	PQL	6/2/2022	6/2/2022	6/2/2022	6/2/2022	6/5/2022	6/5/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	0.077	nd	0.15	nd	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	1.1	nd	nd	nd
Total Xylenes	0.15	nd	nd	0.49	nd	nd	nd
Gasoline	10	12	nd	120 E	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		112	103	85	113	121	119
1,2-Dichloroethane-d4		109	97	90	103	126	130
Toluene-d8		93	95	96	97	50 S	48 S
4-Bromofluorobenzene		120	113	115	121	68	66

"nd" Indicates not detected at listed detection limit.

"E" Reported value is above the calibration range and is an estimate.

"S" Spike compound recovery is outside acceptance limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL SPILL PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22E006

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: F053122-14-11

Date Analyzed: 6/1/2022

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.27	0.27	109	107	1.7	65-135	
Toluene	0.25	0.25	0.24	99	96	3.1	65-135	
Ethylbenzene	0.25	0.25	0.25	102	98	3.9	65-135	
Total Xylenes	0.75	0.76	0.73	101	98	3.5	65-135	

Surrogate Recovery (%)

Dibromofluoromethane

1,2-Dichloroethane-d4

Toluene-d8

4-Bromofluorobenzene

MS

MSD

94

98

65-135

90

97

65-135

96

96

65-135

116

112

65-135

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Melissa Harrington

Laboratory Control Sample

Date Analyzed: 6/1/2022

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.28	113	80-120	
Toluene	0.25	0.25	99	80-120	
Ethylbenzene	0.25	0.26	103	80-120	
Total Xylenes	0.75	0.79	106	80-120	

Surrogate Recovery

Dibromofluoromethane

1,2-Dichloroethane-d4

Toluene-d8

4-Bromofluorobenzene

90

65-135

89

65-135

95

65-135

110

65-135

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL SPILL PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22E006

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: F22F001								
Date Analyzed: 6/2/2022								
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.28	0.28	112	112	0.7	65-135	
Toluene	0.25	0.25	0.26	101	103	1.9	65-135	
Ethylbenzene	0.25	0.24	0.24	96	97	1.4	65-135	
Total Xylenes	0.75	0.75	0.71	99	95	4.9	65-135	
Surrogate Recovery (%)								
Dibromofluoromethane				105	109		65-135	
1,2-Dichloroethane-d4				100	105		65-135	
Toluene-d8				93	96		65-135	
4-Bromofluorobenzene				118	119		65-135	

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Melissa Harrington

Laboratory Control Sample

Date Analyzed: 6/2/2022					
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.29	114	80-120	
Toluene	0.25	0.25	98	80-120	
Ethylbenzene	0.25	0.26	104	80-120	
Total Xylenes	0.75	0.77	103	80-120	
Surrogate Recovery					
Dibromofluoromethane			97	65-135	
1,2-Dichloroethane-d4			89	65-135	
Toluene-d8			94	65-135	
4-Bromofluorobenzene			113	65-135	

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL SPILL PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22E006

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	6/1/2022	128	nd	nd
F053122-01-11	6/1/2022	132	nd	nd
F053122-02-2	6/1/2022	int	5200	nd
F053122-03-6	6/1/2022	132	nd	nd
F053122-04-9	6/1/2022	102	nd	nd
F053122-05-11	6/1/2022	130	nd	nd
F053122-05-11 Dup	6/1/2022	89	nd	nd
F053122-06-2	6/1/2022	int	1700	nd
F053122-07-6	6/1/2022	121	nd	nd
F053122-08-9	6/1/2022	116	nd	nd
F053122-09-11	6/1/2022	108	nd	nd
F053122-10-2	6/1/2022	int	11000	nd
F053122-11-6	6/1/2022	int	250	nd
F053122-12-6	6/1/2022	int	370	nd
F053122-13-9	6/1/2022	120	nd	nd
F053122-14-11	6/1/2022	135	nd	nd
F053122-14-11 Dup	6/1/2022	123	nd	nd
F053122-15-2	6/1/2022	109	nd	nd
F053122-16-6	6/1/2022	int	170	nd
F053122-17-9	6/1/2022	int	350	nd
F053122-18-9	6/1/2022	122	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL SPILL PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22E006

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	6/2/2022	115	nd	nd
FS-060122-PB-19-11	6/1/2022	129	nd	nd
FS-060122-SW-20-2.0	6/2/2022	90	nd	nd
FS-060122-SW-21-6.0	6/2/2022	97	nd	nd
FS-060122-SW-22-9.0	6/2/2022	88	nd	nd
FS-060122-PB-23-11	6/1/2022	94	nd	nd
FS-060122-SW-24-2.0	6/2/2022	int	150	nd
FS-060122-SW-25-6.0	6/2/2022	98	nd	nd
FS-060122-SW-25-6.0 Dup	6/2/2022	88	nd	nd
FS-060122-SW-26-9.0	6/2/2022	103	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

June 8, 2022

Scott Groat
Fulcrum Environmental Consulting
207 W. Boone Avenue
Spokane, WA 99201

Dear Mr. Groat,

Please find enclosed the analytical data report for the Four Star Fuel Release Project located in Pullman, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE

Ph: 360-352-2110

Olympia, WA 98506

Fax: 360-352-4154

Client: Fulcrum Environmental Consulting

Address: 207 W. Boone Ave

City: Spokane State: WA Zip: 99201

Phone: 509-459-9220

Fax:

Client Project # 223516.00

Date: 6/2/2022

Page: 1 of 1

Project Manager: Scott Groat

Project Name: Four Star Fuel Release

Location: 355 NW State Street City, State: Pullman, WA

Collector: S. Groat Date of Collection: 6/2/2022

Email: Sgroat@fulcrum.net



Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270	Field Notes
1 <u>FS-060222-PB-27</u>	<u>11.0</u>	<u>836</u>	<u>Soil</u>	<u>Jar+2VOA</u>			<u>X</u>	<u>X</u>	<u>X</u>								
2 <u>-SW-28</u>	<u>2.0</u>	<u>852</u>					<u> </u>	<u> </u>	<u> </u>								
3 <u>-29</u>	<u>6.0</u>	<u>845</u>					<u> </u>	<u> </u>	<u> </u>								
4 <u>-30</u>	<u>9.0</u>	<u>842</u>					<u> </u>	<u> </u>	<u> </u>								
5 <u>-PB-31</u>	<u>11</u>	<u>1132</u>					<u> </u>	<u> </u>	<u> </u>								
6 <u>-SW-32</u>	<u>2.0</u>	<u>1148</u>					<u> </u>	<u> </u>	<u> </u>								
7 <u>-33</u>	<u>6.0</u>	<u>1145</u>					<u> </u>	<u> </u>	<u> </u>								
8 <u>-34</u>	<u>9.0</u>	<u>1140</u>					<u> </u>	<u> </u>	<u> </u>								
9 <u>-35</u>	<u>11</u>	<u>1154</u>					<u> </u>	<u> </u>	<u> </u>								
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	

Relinquished by: <u>[Signature]</u>	Date / Time: <u>6/2/22 1408</u>	Received by: <u>Melissa Ngt</u>	Date / Time: <u>6/2/22 1408</u>	Sample Receipt Good Condition? Y N Cooler Temp. °C Sample Temp. °C Total Number of Containers TAT: 24HR 48HR 5-DAY	Remarks: <u>run PB in field, SW as possible</u> <u>run SW at lab, Std TAT</u> <u>ML</u>
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22F001

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method	FS-060222-Blank	FS-060222-PB-27-11.0	FS-060222-SW-28-2.0	FS-060222-SW-29-6.0	FS-060222-SW-30-9.0
			Dup				
Date Sampled		N/A	6/2/2022	6/2/2022	6/2/2022	6/2/2022	6/2/2022
Date Analyzed	PQL	6/2/2022	6/2/2022	6/2/2022	6/6/2022	6/6/2022	6/6/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	nd	0.021	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
Total Xylenes	0.15	nd	nd	nd	0.65	nd	nd
Gasoline	10	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		108	102	105	110	114	128
1,2-Dichloroethane-d4		98	90	98	109	95	130
Toluene-d8		90	91	93	93	92	93
4-Bromofluorobenzene		95	100	107	118	90	92

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22F001

Client Project # 223516.00

3322 South Bay Road NE

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Phone: (360) 352-2110

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Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-060222- PB-31-11	FS-060222- SW-32-2.0	FS-060222- SW-33-6.0	FS-060222- SW-34-9.0	FS-060222- SW-34-9.0 Dup	FS-060222- SW-35-11
Date Sampled		6/2/2022	6/2/2022	6/2/2022	6/2/2022	6/2/2022	6/2/2022
Date Analyzed	PQL	6/6/2022	6/6/2022	6/6/2022	6/6/2022	6/6/2022	6/6/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	0.077	0.60	0.039	nd	0.47
Toluene	0.10	nd	0.68	nd	nd	nd	nd
Ethylbenzene	0.05	nd	1.1	0.72	nd	nd	0.57
Total Xylenes	0.15	nd	6.8	nd	nd	nd	nd
Gasoline	10	nd	110	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		106	118	132	138 S	139 S	134
1,2-Dichloroethane-d4		99	127	146 S	147 S	145 S	152 S
Toluene-d8		93	121	101	93	100	99
4-Bromofluorobenzene		115	150 S	95	92	89	96

"nd" Indicates not detected at listed detection limit.

"S" Spike recovery outside accepted recovery limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington & Alex Randolph

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22F001

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

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Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method
		Blank
Date Sampled		N/A
Date Analyzed	PQL	6/2/2022
	(mg/kg)	(mg/kg)
Benzene	0.02	nd
Toluene	0.10	nd
Ethylbenzene	0.05	nd
Total Xylenes	0.15	nd
Gasoline	10	nd
Surrogate Recovery		
Dibromofluoromethane		117
1,2-Dichloroethane-d4		121
Toluene-d8		95
4-Bromofluorobenzene		94

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington & Alex Randolph

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22F001

Client Project # 223516.00

3322 South Bay Road NE

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Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: FS-060222-PB-27-11.0

Date Analyzed: 6/2/2022

	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Benzene	0.25	0.28	0.28	112	112	0.7	65-135	
Toluene	0.25	0.25	0.26	101	103	1.9	65-135	
Ethylbenzene	0.25	0.24	0.24	96	97	1.4	65-135	
Total Xylenes	0.75	0.75	0.71	99	95	4.9	65-135	

Surrogate Recovery (%)

Dibromofluoromethane

1,2-Dichloroethane-d4

Toluene-d8

4-Bromofluorobenzene

MS

MSD

105

109

65-135

100

105

65-135

93

96

65-135

118

119

65-135

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Melissa Harrington

Laboratory Control Sample

Date Analyzed: 6/2/2022

	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.29	114	80-120	
Toluene	0.25	0.25	98	80-120	
Ethylbenzene	0.25	0.26	104	80-120	
Total Xylenes	0.75	0.77	103	80-120	

Surrogate Recovery

Dibromofluoromethane

1,2-Dichloroethane-d4

Toluene-d8

4-Bromofluorobenzene

97

65-135

89

65-135

94

65-135

113

65-135

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22F001

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

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Email: libbyenv@gmail.com

QA/QC for Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Matrix Spike Sample Identification: F22E005B						
Date Analyzed: 6/6/2022						
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MS Recovery (%)		Limits Recovery (%)	Data Flag
Benzene	0.25	0.30	120		65-135	
Toluene	0.25	0.32	126		65-135	
Ethylbenzene	0.25	0.23	91		65-135	
Total Xylenes	0.75	0.64	85		65-135	
Surrogate Recovery (%)						
			MS			
Dibromofluoromethane			127		65-135	
1,2-Dichloroethane-d4			134		65-135	
Toluene-d8			101		65-135	
4-Bromofluorobenzene			101		65-135	

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Alex Randolph

Laboratory Control Sample

Date Analyzed: 6/6/2022					
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Benzene	0.25	0.29	115	80-120	
Toluene	0.25	0.29	115	80-120	
Ethylbenzene	0.25	0.27	108	80-120	
Total Xylenes	0.75	0.68	90	80-120	
Surrogate Recovery					
Dibromofluoromethane			111	65-135	
1,2-Dichloroethane-d4			112	65-135	
Toluene-d8			99	65-135	
4-Bromofluorobenzene			106	65-135	

ANALYSES PERFORMED BY: Alex Randolph

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # F22F001

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

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Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	6/2/2022	115	nd	nd
Method Blank	6/3/2022	97	nd	nd
FS-060222-PB-27-11.0	6/2/2022	114	nd	nd
FS-060222-SW-28-2.0	6/2/2022	118	nd	nd
FS-060222-SW-29-6.0	6/2/2022	99	nd	nd
FS-060222-SW-30-9.0	6/2/2022	100	nd	nd
FS-060222-PB-31-11	6/2/2022	128	nd	nd
FS-060222-PB-31-11 Dup	6/2/2022	107	nd	nd
FS-060222-SW-32-2.0	6/3/2022	int	1300	nd
FS-060222-SW-33-6.0	6/3/2022	98	nd	nd
FS-060222-SW-34-9.0	6/3/2022	93	nd	nd
FS-060222-SW-35-11	6/3/2022	145 S	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.

"E" Reported value is above the calibration range and is an estimate.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Melissa Harrington



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

August 25, 2022

Scott Groat
Fulcrum Environmental Consulting
207 W. Boone Avenue
Spokane, WA 99201

Dear Mr. Groat,

Please find enclosed the analytical data report for the Four Star Project located in Pullman, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

A handwritten signature in black ink, appearing to read "Sherry L. Chilcutt".

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE

Ph: 360-352-2110

Olympia, WA 98506

Fax: 360-352-4154

Date: 8/17/22

Page: 1 of 1

Client: Fulcrum Environmental

Project Manager: Scott Groat

Address: 207 W Boone Ave

Project Name: Four Star

City: Spokane State: WA Zip: 99201

Location: Pullman, WA

City, State:

Phone: 509 459 9220 Fax:

Collector: Scott Groat

Date of Collection: 08/15/22

Client Project # 223516.00

Email: ~~scott.groat@fulcrum.net~~ sgroat@fulcrum.net



Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Products	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	PAH 8270	Semi Vol 8270	Field Notes
1 FS-081522-43	11.0	1200	Grab	4oz jar			X	X	X							5 day TAT
2 -44	3.0	1213		2 neck jar												
3 -45	3.0	1222														
4 -46	11.00	1313														24 hour TAT
5 -47	1.0	1327														24 hour TAT
6 -48	3.0	1356														5 day TAT
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																

Relinquished by: <u>Elmer Deaton</u>	Date / Time: <u>08/17/22 1130</u>	Received by: <u>[Signature]</u>	Date / Time: <u>8-18-22 1413</u>	Sample Receipt Good Condition? <u>Y</u> <u>N</u> Cooler Temp. <u> </u> °C Sample Temp. <u> </u> °C Total Number of Containers <u> </u>	Remarks: TAT: 24HR 48HR 5-DAY
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

FOUR STAR PROJECT
Fulcrum Environmental
Pullman, Washington
Libby Project # L22H058
Client Project # 223516.00

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method Blank	FS-081522- 43	FS-081522- 44	FS-081522- 45	FS-081522- 46	FS-081522- 46 Dup
Date Sampled		N/A	8/15/2022	8/15/2022	8/15/2022	8/15/2022	8/15/2022
Date Analyzed	PQL	8/18/2022	8/18/2022	8/18/2022	8/18/2022	8/18/2022	8/18/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	nd	0.049	nd	nd
Toluene	0.10	nd	nd	0.18	0.22	nd	nd
Ethylbenzene	0.05	nd	nd	0.24	nd	nd	nd
Total Xylenes	0.15	nd	nd	0.29	0.25	nd	nd
Gasoline	10	nd	nd	660	13	nd	nd

Surrogate Recovery	Acceptable Limits (%)						
Dibromofluoromethane	54-161	110	122	55	81	126	115
1,2-Dichloroethane-d4	49-180	134	113	87	94	115	107
Toluene-d8	58-125	87	104	103	116	101	100
4-Bromofluorobenzene	67-147	80	119	121	106	109	103

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ANALYSES PERFORMED BY: Alex Randolph

Libby Environmental, Inc.

FOUR STAR PROJECT
Fulcrum Environmental
Pullman, Washington
Libby Project # L22H058
Client Project # 223516.00

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-081522-47	FS-081522-48
Date Sampled		8/15/2022	8/15/2022
Date Analyzed	PQL	8/18/2022	8/18/2022
	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd
Toluene	0.10	nd	nd
Ethylbenzene	0.05	nd	nd
Total Xylenes	0.15	nd	nd
Gasoline	10	nd	nd
Surrogate Recovery		Acceptable Limits (%)	
Dibromofluoromethane	54-161	102	101
1,2-Dichloroethane-d4	49-180	111	99
Toluene-d8	58-125	109	101
4-Bromofluorobenzene	67-147	114	104
"nd" Indicates not detected at listed detection limit.			
"int" Indicates that interference prevents determination.			

ANALYSES PERFORMED BY: Alex Randolph

Libby Environmental, Inc.

FOUR STAR PROJECT
Fulcrum Environmental
Pullman, Washington
Libby Project # L22H058
Client Project # 223516.00

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

QA/QC for Volatile Organic Compounds by EPA Method 8260D in Soil

Matrix Spike Sample Identification: FS-081522-46								
Date Analyzed: 8/18/2022								
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Recovery Limits (%)	Data Flag
Benzene	0.25	0.17	0.18	68	72	5.7	76-110	S
Toluene	0.25	0.22	0.22	88	88	0.0	79-124	
Ethylbenzene	0.25	0.19	0.19	76	76	0.0	69-126	
Total Xylenes	0.75	0.57	0.55	76	73	3.6	60-131	
Surrogate Recovery (%)				MS	MSD			
Dibromofluoromethane				100	101	54-161		
1,2-Dichloroethane-d4				115	115	49-180		
Toluene-d8				110	108	58-125		
4-Bromofluorobenzene				119	110	67-147		

ACCEPTABLE RPD IS 35%

"S" Spike compound recovery is outside acceptance limits.

ANALYSES PERFORMED BY: Alex Randolph

Laboratory Control Sample

Date Analyzed: 8/18/2022					
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	Recovery Limits (%)	Data Flag
Benzene	0.25	0.32	128	74-109	S
Toluene	0.25	0.21	84	78-115	
Ethylbenzene	0.25	0.21	84	65-128	
Total Xylenes	0.75	0.57	76	55-123	
Surrogate Recovery					
Dibromofluoromethane			114	54-161	
1,2-Dichloroethane-d4			134	49-180	
Toluene-d8			101	58-125	
4-Bromofluorobenzene			100	67-147	

"S" Spike compound recovery is outside acceptance limits (High Bias).

ANALYSES PERFORMED BY: Alex Randolph

Libby Environmental, Inc.

FOUR STAR PROJECT

Fulcrum Environmental

Pullman, Washington

Libby Project # L22H058

Client Project # 223516.00

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	8/18/2022	104	nd	nd
Method Blank	8/19/2022	116	nd	nd
FS-081522-43	8/18/2022	94	nd	nd
FS-081522-43 Dup	8/18/2022	108	nd	nd
FS-081522-44	8/18/2022	int	3200	nd
FS-081522-45	8/18/2022	100	nd	nd
FS-081522-46	8/19/2022	109	nd	nd
FS-081522-47	8/19/2022	115	nd	nd
FS-081522-48	8/19/2022	111	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Lucy Owens

Libby Environmental, Inc.

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

FOUR STAR PROJECT

Fulcrum Environmental

Libby Project # L22H058

Date Received 8/18/22 14:13

Received By KLI

Sample Receipt Checklist

Chain of Custody

- | | | | |
|--------------------------------------|---|------------------------------------|---|
| 1. Is the Chain of Custody complete? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 2. How was the sample delivered? | <input type="checkbox"/> Hand Delivered | <input type="checkbox"/> Picked Up | <input checked="" type="checkbox"/> Shipped |

Log In

- | | | | |
|---|---|--|------------------------------|
| 3. Cooler or Shipping Container is present. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 4. Cooler or Shipping Container is in good condition. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 5. Cooler or Shipping Container has Custody Seals present. | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A |
| 6. Was an attempt made to cool the samples? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 7. Temperature of cooler (0°C to 8°C recommended) | <u>25.0 °C</u> | | |
| 8. Temperature of sample(s) (0°C to 8°C recommended) | <u>18.0 °C</u> | | |
| 9. Did all containers arrive in good condition (unbroken)? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 10. Is it clear what analyses were requested? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 11. Did container labels match Chain of Custody? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 12. Are matrices correctly identified on Chain of Custody? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 13. Are correct containers used for the analysis indicated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 14. Is there sufficient sample volume for indicated analysis? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 15. Were all containers properly preserved per each analysis? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 16. Were VOA vials collected correctly (no headspace)? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 17. Were all holding times able to be met? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |

Discrepancies/ Notes

- | | | | |
|---|------------------------------|-----------------------------|---|
| 18. Was client notified of all discrepancies? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
|---|------------------------------|-----------------------------|---|

Person Notified: _____

Date: _____

By Whom: _____

Via: _____

Regarding: _____

- | | |
|---------------|--|
| 19. Comments. | <u>VOAs pre-preserved with 10ml methanol</u> |
| | _____ |
| | _____ |
| | _____ |



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

August 24, 2022

Scott Groat
Fulcrum Environmental Consulting
207 W. Boone Avenue
Spokane, WA 99201

Dear Mr. Groat,

Please find enclosed the analytical data report for the Four Star Project located in Pullman, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

A handwritten signature in black ink, appearing to read "Sherry L. Chilcutt".

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506

Ph: 360-352-2110
Fax: 360-352-4154

Client: Fulcrum Environmental

Address: 207 W. Boode Avenue

City: Spokane State: WA Zip: 99201

Phone: 509-459-9220 Fax: 509-459-9219

Client Project #

Date: Page: of


Project Manager: Scott Groat

Project Name: Four Star

Location: City, State: Pullman, WA

Collector: SG Date of Collection: 8-15-22

Email:

	Sample Number	Depth	Time	Sample Type	Container Type												Field Notes
						VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	
1	FS-081522-Pb-49-12.5	12.5	9/15/8/19/22	Soil	10A x 2 + 402		X	X	X								
2	-So - 12.5	12.5	10/3/22														
3	FS-081522-SP-01	NA	8/2/8/8/22														
4	FS-081522-Pb-51-11.5	11.5	9/30/8/19/22	Soil			X	X	X								
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	

Relinquished by: <u>Ethan Dickson</u>	Date / Time: <u>08/22/2022 1700</u>	Received by: <u>[Signature]</u>	Date / Time: <u>8-23-22 2:45</u>	Sample Receipt Good Condition? Y N Cooler Temp. °C Sample Temp. °C Total Number of Containers		Remarks: <u>info confirmed via phone call w/ Ethan - RJE</u> TAT: <u>24HR</u> 48HR 5-DAY
Relinquished by:	Date / Time:	Received by:	Date / Time:			
Relinquished by:	Date / Time:	Received by:	Date / Time:			

Libby Environmental, Inc.

FOUR STAR PROJECT
Fulcrum Environmental
Pullman, Washington
Libby Project # L22H065

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method	FS-081522- Blank	FS-081522- Pb-49-12.5	FS-081522- Pb-50-12.5	FS-081522- SP-01	FS-801522- Pb-51-11.5
Date Sampled		N/A	8/15/2022	8/15/2022	8/15/2022	8/15/2022	8/15/2022
Date Analyzed	PQL	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	nd	nd	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
Total Xylenes	0.15	nd	nd	nd	nd	nd	nd
Gasoline	10	nd	nd	nd	nd	nd	nd
Surrogate Recovery		Acceptable Limits (%)					
Dibromofluoromethane	27-188	94	93	93	93	93	93
1,2-Dichloroethane-d4	17-212	95	104	108	107	110	
Toluene-d8	41-142	97	102	101	99	100	
4-Bromofluorobenzene	47-167	90	94	98	94	95	

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR PROJECT
Fulcrum Environmental
Pullman, Washington
Libby Project # L22H065
Client Project # 223516

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

QA/QC for Volatile Organic Compounds by EPA Method 8260D in Soil

Matrix Spike Sample Identification: L22H060								
Date Analyzed: 8/23/2022								
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Recovery Limits (%)	Data Flag
Benzene	0.25	0.23	0.24	92	97	5.5	65-126	
Toluene	0.25	0.23	0.24	91	96	5.2	65-126	
Ethylbenzene	0.25	0.25	0.26	98	103	5.2	55-140	
Total Xylenes	0.75	0.73	0.77	98	103	4.7	43-149	
Surrogate Recovery (%)								
				MS	MSD			
Dibromofluoromethane				94	96		27-188	
1,2-Dichloroethane-d4				101	100		17-212	
Toluene-d8				101	103		41-142	
4-Bromofluorobenzene				92	93		47-167	

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Melissa Harrington

Laboratory Control Sample

Date Analyzed: 8/23/2022					
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	Recovery Limits (%)	Data Flag
Benzene	0.25	0.21	84	65-118	
Toluene	0.25	0.20	79	68-125	
Ethylbenzene	0.25	0.22	89	49-144	
Total Xylenes	0.75	0.68	91	38-140	
Surrogate Recovery					
Dibromofluoromethane			98	27-188	
1,2-Dichloroethane-d4			96	17-212	
Toluene-d8			97	41-142	
4-Bromofluorobenzene			92	47-167	

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR PROJECT
Fulcrum Environmental
Pullman, Washington
Libby Project # L22H065
Client Project # 223516

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	8/23/2022	121	nd	nd
FS-081522-Pb-49-12.5	8/23/2022	120	nd	nd
FS-081522-Pb-49-12.5 Dup	8/23/2022	132	nd	nd
FS-081522-Pb-50-12.5	8/23/2022	116	nd	nd
FS-081522-SP-01	8/23/2022	123	nd	nd
FS-801522-Pb-51-11.5	8/23/2022	118	nd	nd

Practical Quantitation Limit

50

250

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Lucy Owens

Libby Environmental, Inc.

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

FOUR STAR PROJECT

Fulcrum Environmental

Libby Project # L22H065

Date Received 8/23/22 14:45

Received By RJK

Sample Receipt Checklist

Chain of Custody

- | | | | |
|--------------------------------------|---|--|---|
| 1. Is the Chain of Custody complete? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | |
| 2. How was the sample delivered? | <input type="checkbox"/> Hand Delivered | <input type="checkbox"/> Picked Up | <input checked="" type="checkbox"/> Shipped |

Log In

- | | | | |
|---|---|--|---|
| 3. Cooler or Shipping Container is present. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 4. Cooler or Shipping Container is in good condition. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 5. Cooler or Shipping Container has Custody Seals present. | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A |
| 6. Was an attempt made to cool the samples? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 7. Temperature of cooler (0°C to 8°C recommended) | <u>11.0 °C</u> | | |
| 8. Temperature of sample(s) (0°C to 8°C recommended) | <u>20.0 °C</u> | | |
| 9. Did all containers arrive in good condition (unbroken)? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 10. Is it clear what analyses were requested? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 11. Did container labels match Chain of Custody? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 12. Are matrices correctly identified on Chain of Custody? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 13. Are correct containers used for the analysis indicated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 14. Is there sufficient sample volume for indicated analysis? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 15. Were all containers properly preserved per each analysis? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 16. Were VOA vials collected correctly (no headspace)? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 17. Were all holding times able to be met? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |

Discrepancies/ Notes

- | | | | |
|---|---|-----------------------------|------------------------------|
| 18. Was client notified of all discrepancies? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
|---|---|-----------------------------|------------------------------|

Person Notified: Ethan D.

Date: 8/23/2022

By Whom: RJK

Via: Phone Call

Regarding: Incomplete CoC

19. Comments. Missing information provided via phone call.
- _____
- _____
- _____
- _____

ANALYTICAL REPORT

Eurofins Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

Laboratory Job ID: 590-18333-1

Client Project/Site: Four Star

For:

Fulcrum Environmental
207 West Boone Avenue
Spokane, Washington 99201

Attn: Scott Groat



Authorized for release by:

8/18/2022 9:57:04 AM

Kristine Allen, Client Service Manager
(253)433-0390

Kristine.Allen@et.eurofinsus.com

Designee for

Randee Arrington, Lab Director
(509)924-9200

Randee.Arrington@et.eurofinsus.com

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results through



Have a Question?



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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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QC Sample Results	18
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Case Narrative

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Job ID: 590-18333-1

Laboratory: Eurofins Spokane

Narrative

Job Narrative 590-18333-1

Comments

No additional comments.

Receipt

The samples were received on 8/16/2022 8:25 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.1° C.

GC/MS VOA

Method 8260D: Surrogate recovery for the following samples were outside control limits: T1-081522-01-5.0 (590-18333-2), T1-081522-02-8.0 (590-18333-6), T1-081522-03-10.0 (590-18333-9), T2-081522-01-6.5 (590-18333-12), T2-081522-02-6.5 (590-18333-15), (590-18333-B-2-A MS), (590-18333-B-2-A MSD) and (590-18333-B-9-A DU). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to weathered diesel. T1-081522-01-3.0 (590-18333-1), T1-081522-01-5.0 (590-18333-2), T1-081522-02-3.0 (590-18333-3), T1-081522-02-5.0 (590-18333-4), T1-081522-02-7.0 (590-18333-5), T1-081522-02-8.0 (590-18333-6), T1-081522-03-3.0 (590-18333-7), T1-081522-03-5.0 (590-18333-8), T1-081522-03-10.0 (590-18333-9), T2-081522-01-6.5 (590-18333-12), T2-081522-02-6.5 (590-18333-15), T2-081522-03-10.0 (590-18333-18) and (590-18333-A-3-B DU)

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to oil overlap. T2-081522-03-2.0 (590-18333-16)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-18333-1	T1-081522-01-3.0	Solid	08/15/22 10:00	08/16/22 08:25
590-18333-2	T1-081522-01-5.0	Solid	08/15/22 10:05	08/16/22 08:25
590-18333-3	T1-081522-02-3.0	Solid	08/15/22 10:10	08/16/22 08:25
590-18333-4	T1-081522-02-5.0	Solid	08/15/22 10:30	08/16/22 08:25
590-18333-5	T1-081522-02-7.0	Solid	08/15/22 10:35	08/16/22 08:25
590-18333-6	T1-081522-02-8.0	Solid	08/15/22 10:40	08/16/22 08:25
590-18333-7	T1-081522-03-3.0	Solid	08/15/22 10:45	08/16/22 08:25
590-18333-8	T1-081522-03-5.0	Solid	08/15/22 11:00	08/16/22 08:25
590-18333-9	T1-081522-03-10.0	Solid	08/15/22 11:05	08/16/22 08:25
590-18333-10	T2-081522-01-3.0	Solid	08/15/22 11:10	08/16/22 08:25
590-18333-11	T2-081522-01-5.0	Solid	08/15/22 11:15	08/16/22 08:25
590-18333-12	T2-081522-01-6.5	Solid	08/15/22 11:20	08/16/22 08:25
590-18333-13	T2-081522-02-2.0	Solid	08/15/22 11:25	08/16/22 08:25
590-18333-14	T2-081522-02-4.0	Solid	08/15/22 11:30	08/16/22 08:25
590-18333-15	T2-081522-02-6.5	Solid	08/15/22 11:35	08/16/22 08:25
590-18333-16	T2-081522-03-2.0	Solid	08/15/22 11:40	08/16/22 08:25
590-18333-17	T2-081522-03-4.0	Solid	08/15/22 11:45	08/16/22 08:25
590-18333-18	T2-081522-03-10.0	Solid	08/15/22 11:50	08/16/22 08:25

Definitions/Glossary

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T1-081522-01-3.0

Lab Sample ID: 590-18333-1

Date Collected: 08/15/22 10:00

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 78.4

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.032		mg/Kg	✱	08/16/22 11:40	08/16/22 15:22	1
Ethylbenzene	ND		0.16		mg/Kg	✱	08/16/22 11:40	08/16/22 15:22	1
m,p-Xylene	ND		0.63		mg/Kg	✱	08/16/22 11:40	08/16/22 15:22	1
o-Xylene	ND		0.32		mg/Kg	✱	08/16/22 11:40	08/16/22 15:22	1
Toluene	ND		0.16		mg/Kg	✱	08/16/22 11:40	08/16/22 15:22	1
Xylenes, Total	ND		0.95		mg/Kg	✱	08/16/22 11:40	08/16/22 15:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 129	08/16/22 11:40	08/16/22 15:22	1
4-Bromofluorobenzene (Surr)	95		76 - 122	08/16/22 11:40	08/16/22 15:22	1
Dibromofluoromethane (Surr)	100		80 - 120	08/16/22 11:40	08/16/22 15:22	1
Toluene-d8 (Surr)	112		80 - 120	08/16/22 11:40	08/16/22 15:22	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	35		7.9		mg/Kg	✱	08/16/22 11:40	08/16/22 15:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		41.5 - 162	08/16/22 11:40	08/16/22 15:22	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	100		12		mg/Kg	✱	08/16/22 09:58	08/17/22 18:10	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	✱	08/16/22 09:58	08/17/22 18:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	98		50 - 150	08/16/22 09:58	08/17/22 18:10	1
n-Triacontane-d62	97		50 - 150	08/16/22 09:58	08/17/22 18:10	1

Client Sample ID: T1-081522-01-5.0

Lab Sample ID: 590-18333-2

Date Collected: 08/15/22 10:05

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 79.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.21		0.031		mg/Kg	✱	08/16/22 11:40	08/16/22 16:05	1
Ethylbenzene	0.39		0.15		mg/Kg	✱	08/16/22 11:40	08/16/22 16:05	1
m,p-Xylene	ND		0.61		mg/Kg	✱	08/16/22 11:40	08/16/22 16:05	1
o-Xylene	ND		0.31		mg/Kg	✱	08/16/22 11:40	08/16/22 16:05	1
Toluene	0.18		0.15		mg/Kg	✱	08/16/22 11:40	08/16/22 16:05	1
Xylenes, Total	ND		0.92		mg/Kg	✱	08/16/22 11:40	08/16/22 16:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 129	08/16/22 11:40	08/16/22 16:05	1
4-Bromofluorobenzene (Surr)	136	S1+	76 - 122	08/16/22 11:40	08/16/22 16:05	1
Dibromofluoromethane (Surr)	94		80 - 120	08/16/22 11:40	08/16/22 16:05	1
Toluene-d8 (Surr)	103		80 - 120	08/16/22 11:40	08/16/22 16:05	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T1-081522-01-5.0

Lab Sample ID: 590-18333-2

Date Collected: 08/15/22 10:05

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 79.5

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1100		76		mg/Kg	☆	08/16/22 11:40	08/17/22 12:56	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		41.5 - 162				08/16/22 11:40	08/17/22 12:56	10

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	4700		130		mg/Kg	☆	08/16/22 09:58	08/17/22 18:31	10
Residual Range Organics (RRO) (C25-C36)	ND		310		mg/Kg	☆	08/16/22 09:58	08/17/22 18:31	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				08/16/22 09:58	08/17/22 18:31	10
n-Triacontane-d62	91		50 - 150				08/16/22 09:58	08/17/22 18:31	10

Client Sample ID: T1-081522-02-3.0

Lab Sample ID: 590-18333-3

Date Collected: 08/15/22 10:10

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 83.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.029		mg/Kg	☆	08/16/22 11:40	08/16/22 17:09	1
Ethylbenzene	ND		0.14		mg/Kg	☆	08/16/22 11:40	08/16/22 17:09	1
m,p-Xylene	ND		0.57		mg/Kg	☆	08/16/22 11:40	08/16/22 17:09	1
o-Xylene	ND		0.29		mg/Kg	☆	08/16/22 11:40	08/16/22 17:09	1
Toluene	ND		0.14		mg/Kg	☆	08/16/22 11:40	08/16/22 17:09	1
Xylenes, Total	ND		0.86		mg/Kg	☆	08/16/22 11:40	08/16/22 17:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129				08/16/22 11:40	08/16/22 17:09	1
4-Bromofluorobenzene (Surr)	96		76 - 122				08/16/22 11:40	08/16/22 17:09	1
Dibromofluoromethane (Surr)	94		80 - 120				08/16/22 11:40	08/16/22 17:09	1
Toluene-d8 (Surr)	111		80 - 120				08/16/22 11:40	08/16/22 17:09	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	19		7.2		mg/Kg	☆	08/16/22 11:40	08/16/22 17:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		41.5 - 162				08/16/22 11:40	08/16/22 17:09	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	41		11		mg/Kg	☆	08/16/22 09:58	08/17/22 18:51	1
Residual Range Organics (RRO) (C25-C36)	170		29		mg/Kg	☆	08/16/22 09:58	08/17/22 18:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	92		50 - 150				08/16/22 09:58	08/17/22 18:51	1
n-Triacontane-d62	94		50 - 150				08/16/22 09:58	08/17/22 18:51	1

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Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T1-081522-02-5.0

Lab Sample ID: 590-18333-4

Date Collected: 08/15/22 10:30

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 75.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.060		mg/Kg	☆	08/16/22 11:40	08/16/22 17:52	1
Ethylbenzene	ND		0.30		mg/Kg	☆	08/16/22 11:40	08/16/22 17:52	1
m,p-Xylene	ND		1.2		mg/Kg	☆	08/16/22 11:40	08/16/22 17:52	1
o-Xylene	ND		0.60		mg/Kg	☆	08/16/22 11:40	08/16/22 17:52	1
Toluene	ND		0.30		mg/Kg	☆	08/16/22 11:40	08/16/22 17:52	1
Xylenes, Total	ND		1.8		mg/Kg	☆	08/16/22 11:40	08/16/22 17:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		75 - 129	08/16/22 11:40	08/16/22 17:52	1
4-Bromofluorobenzene (Surr)	91		76 - 122	08/16/22 11:40	08/16/22 17:52	1
Dibromofluoromethane (Surr)	98		80 - 120	08/16/22 11:40	08/16/22 17:52	1
Toluene-d8 (Surr)	111		80 - 120	08/16/22 11:40	08/16/22 17:52	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	29		15		mg/Kg	☆	08/16/22 11:40	08/16/22 17:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		41.5 - 162	08/16/22 11:40	08/16/22 17:52	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	19		13		mg/Kg	☆	08/16/22 09:58	08/17/22 19:32	1
Residual Range Organics (RRO) (C25-C36)	ND		32		mg/Kg	☆	08/16/22 09:58	08/17/22 19:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150	08/16/22 09:58	08/17/22 19:32	1
n-Triacontane-d62	94		50 - 150	08/16/22 09:58	08/17/22 19:32	1

Client Sample ID: T1-081522-02-7.0

Lab Sample ID: 590-18333-5

Date Collected: 08/15/22 10:35

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 74.3

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.036		mg/Kg	☆	08/16/22 11:40	08/16/22 18:13	1
Ethylbenzene	ND		0.18		mg/Kg	☆	08/16/22 11:40	08/16/22 18:13	1
m,p-Xylene	ND		0.72		mg/Kg	☆	08/16/22 11:40	08/16/22 18:13	1
o-Xylene	ND		0.36		mg/Kg	☆	08/16/22 11:40	08/16/22 18:13	1
Toluene	ND		0.18		mg/Kg	☆	08/16/22 11:40	08/16/22 18:13	1
Xylenes, Total	ND		1.1		mg/Kg	☆	08/16/22 11:40	08/16/22 18:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 129	08/16/22 11:40	08/16/22 18:13	1
4-Bromofluorobenzene (Surr)	89		76 - 122	08/16/22 11:40	08/16/22 18:13	1
Dibromofluoromethane (Surr)	97		80 - 120	08/16/22 11:40	08/16/22 18:13	1
Toluene-d8 (Surr)	106		80 - 120	08/16/22 11:40	08/16/22 18:13	1

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Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T1-081522-02-7.0

Lab Sample ID: 590-18333-5

Date Collected: 08/15/22 10:35

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 74.3

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	10		9.0		mg/Kg	☆	08/16/22 11:40	08/16/22 18:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		41.5 - 162				08/16/22 11:40	08/16/22 18:13	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	68		13		mg/Kg	☆	08/16/22 09:58	08/17/22 19:52	1
Residual Range Organics (RRO) (C25-C36)	ND		32		mg/Kg	☆	08/16/22 09:58	08/17/22 19:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150				08/16/22 09:58	08/17/22 19:52	1
n-Triacontane-d62	94		50 - 150				08/16/22 09:58	08/17/22 19:52	1

Client Sample ID: T1-081522-02-8.0

Lab Sample ID: 590-18333-6

Date Collected: 08/15/22 10:40

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 72.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.056		0.039		mg/Kg	☆	08/16/22 11:40	08/16/22 18:35	1
Ethylbenzene	0.44		0.20		mg/Kg	☆	08/16/22 11:40	08/16/22 18:35	1
m,p-Xylene	ND		0.78		mg/Kg	☆	08/16/22 11:40	08/16/22 18:35	1
o-Xylene	ND		0.39		mg/Kg	☆	08/16/22 11:40	08/16/22 18:35	1
Toluene	ND		0.20		mg/Kg	☆	08/16/22 11:40	08/16/22 18:35	1
Xylenes, Total	ND		1.2		mg/Kg	☆	08/16/22 11:40	08/16/22 18:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 129				08/16/22 11:40	08/16/22 18:35	1
4-Bromofluorobenzene (Surr)	201	S1+	76 - 122				08/16/22 11:40	08/16/22 18:35	1
Dibromofluoromethane (Surr)	88		80 - 120				08/16/22 11:40	08/16/22 18:35	1
Toluene-d8 (Surr)	98		80 - 120				08/16/22 11:40	08/16/22 18:35	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1900		98		mg/Kg	☆	08/16/22 11:40	08/17/22 13:18	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		41.5 - 162				08/16/22 11:40	08/17/22 13:18	10

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	7200		130		mg/Kg	☆	08/16/22 09:58	08/17/22 20:12	10
Residual Range Organics (RRO) (C25-C36)	ND		340		mg/Kg	☆	08/16/22 09:58	08/17/22 20:12	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150				08/16/22 09:58	08/17/22 20:12	10
n-Triacontane-d62	109		50 - 150				08/16/22 09:58	08/17/22 20:12	10

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Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T1-081522-03-3.0

Lab Sample ID: 590-18333-7

Date Collected: 08/15/22 10:45

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 84.0

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.055		0.033		mg/Kg	☆	08/16/22 11:40	08/16/22 18:56	1
Ethylbenzene	ND		0.17		mg/Kg	☆	08/16/22 11:40	08/16/22 18:56	1
m,p-Xylene	ND		0.67		mg/Kg	☆	08/16/22 11:40	08/16/22 18:56	1
o-Xylene	ND		0.33		mg/Kg	☆	08/16/22 11:40	08/16/22 18:56	1
Toluene	0.50		0.17		mg/Kg	☆	08/16/22 11:40	08/16/22 18:56	1
Xylenes, Total	ND		1.0		mg/Kg	☆	08/16/22 11:40	08/16/22 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 129	08/16/22 11:40	08/16/22 18:56	1
4-Bromofluorobenzene (Surr)	95		76 - 122	08/16/22 11:40	08/16/22 18:56	1
Dibromofluoromethane (Surr)	95		80 - 120	08/16/22 11:40	08/16/22 18:56	1
Toluene-d8 (Surr)	109		80 - 120	08/16/22 11:40	08/16/22 18:56	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	34		8.3		mg/Kg	☆	08/16/22 11:40	08/16/22 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		41.5 - 162	08/16/22 11:40	08/16/22 18:56	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	350		56		mg/Kg	☆	08/16/22 09:58	08/17/22 20:33	5
Residual Range Organics (RRO) (C25-C36)	670		140		mg/Kg	☆	08/16/22 09:58	08/17/22 20:33	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150	08/16/22 09:58	08/17/22 20:33	5
n-Triacontane-d62	96		50 - 150	08/16/22 09:58	08/17/22 20:33	5

Client Sample ID: T1-081522-03-5.0

Lab Sample ID: 590-18333-8

Date Collected: 08/15/22 11:00

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 86.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.030		mg/Kg	☆	08/16/22 11:40	08/16/22 19:17	1
Ethylbenzene	ND		0.15		mg/Kg	☆	08/16/22 11:40	08/16/22 19:17	1
m,p-Xylene	ND		0.59		mg/Kg	☆	08/16/22 11:40	08/16/22 19:17	1
o-Xylene	ND		0.30		mg/Kg	☆	08/16/22 11:40	08/16/22 19:17	1
Toluene	ND		0.15		mg/Kg	☆	08/16/22 11:40	08/16/22 19:17	1
Xylenes, Total	ND		0.89		mg/Kg	☆	08/16/22 11:40	08/16/22 19:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 129	08/16/22 11:40	08/16/22 19:17	1
4-Bromofluorobenzene (Surr)	92		76 - 122	08/16/22 11:40	08/16/22 19:17	1
Dibromofluoromethane (Surr)	101		80 - 120	08/16/22 11:40	08/16/22 19:17	1
Toluene-d8 (Surr)	110		80 - 120	08/16/22 11:40	08/16/22 19:17	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T1-081522-03-5.0

Lab Sample ID: 590-18333-8

Date Collected: 08/15/22 11:00

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 86.9

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.4		mg/Kg	☼	08/16/22 11:40	08/16/22 19:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		41.5 - 162				08/16/22 11:40	08/16/22 19:17	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	180		56		mg/Kg	☼	08/16/22 09:58	08/17/22 21:13	5
Residual Range Organics (RRO) (C25-C36)	420		140		mg/Kg	☼	08/16/22 09:58	08/17/22 21:13	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150				08/16/22 09:58	08/17/22 21:13	5
n-Triacontane-d62	86		50 - 150				08/16/22 09:58	08/17/22 21:13	5

Client Sample ID: T1-081522-03-10.0

Lab Sample ID: 590-18333-9

Date Collected: 08/15/22 11:05

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 74.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.034		mg/Kg	☼	08/16/22 11:40	08/16/22 19:38	1
Ethylbenzene	ND		0.17		mg/Kg	☼	08/16/22 11:40	08/16/22 19:38	1
m,p-Xylene	ND		0.68		mg/Kg	☼	08/16/22 11:40	08/16/22 19:38	1
o-Xylene	ND		0.34		mg/Kg	☼	08/16/22 11:40	08/16/22 19:38	1
Toluene	ND		0.17		mg/Kg	☼	08/16/22 11:40	08/16/22 19:38	1
Xylenes, Total	ND		1.0		mg/Kg	☼	08/16/22 11:40	08/16/22 19:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129				08/16/22 11:40	08/16/22 19:38	1
4-Bromofluorobenzene (Surr)	180	S1+	76 - 122				08/16/22 11:40	08/16/22 19:38	1
Dibromofluoromethane (Surr)	100		80 - 120				08/16/22 11:40	08/16/22 19:38	1
Toluene-d8 (Surr)	95		80 - 120				08/16/22 11:40	08/16/22 19:38	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	910		85		mg/Kg	☼	08/16/22 11:40	08/17/22 13:39	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		41.5 - 162				08/16/22 11:40	08/17/22 13:39	10

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	530		16		mg/Kg	☼	08/16/22 09:58	08/17/22 21:34	1
Residual Range Organics (RRO) (C25-C36)	ND		41		mg/Kg	☼	08/16/22 09:58	08/17/22 21:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	96		50 - 150				08/16/22 09:58	08/17/22 21:34	1
n-Triacontane-d62	93		50 - 150				08/16/22 09:58	08/17/22 21:34	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T2-081522-01-3.0

Lab Sample ID: 590-18333-10

Date Collected: 08/15/22 11:10

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 79.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.031		mg/Kg	✱	08/16/22 11:40	08/16/22 20:20	1
Ethylbenzene	ND		0.15		mg/Kg	✱	08/16/22 11:40	08/16/22 20:20	1
m,p-Xylene	ND		0.62		mg/Kg	✱	08/16/22 11:40	08/16/22 20:20	1
o-Xylene	ND		0.31		mg/Kg	✱	08/16/22 11:40	08/16/22 20:20	1
Toluene	ND		0.15		mg/Kg	✱	08/16/22 11:40	08/16/22 20:20	1
Xylenes, Total	ND		0.92		mg/Kg	✱	08/16/22 11:40	08/16/22 20:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 129	08/16/22 11:40	08/16/22 20:20	1
4-Bromofluorobenzene (Surr)	89		76 - 122	08/16/22 11:40	08/16/22 20:20	1
Dibromofluoromethane (Surr)	102		80 - 120	08/16/22 11:40	08/16/22 20:20	1
Toluene-d8 (Surr)	102		80 - 120	08/16/22 11:40	08/16/22 20:20	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	21		7.7		mg/Kg	✱	08/16/22 11:40	08/16/22 20:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		41.5 - 162	08/16/22 11:40	08/16/22 20:20	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		12		mg/Kg	✱	08/16/22 09:58	08/17/22 21:54	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	✱	08/16/22 09:58	08/17/22 21:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	83		50 - 150	08/16/22 09:58	08/17/22 21:54	1
n-Triacontane-d62	88		50 - 150	08/16/22 09:58	08/17/22 21:54	1

Client Sample ID: T2-081522-01-5.0

Lab Sample ID: 590-18333-11

Date Collected: 08/15/22 11:15

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 80.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.029		mg/Kg	✱	08/16/22 11:40	08/16/22 20:40	1
Ethylbenzene	ND		0.15		mg/Kg	✱	08/16/22 11:40	08/16/22 20:40	1
m,p-Xylene	ND		0.58		mg/Kg	✱	08/16/22 11:40	08/16/22 20:40	1
o-Xylene	ND		0.29		mg/Kg	✱	08/16/22 11:40	08/16/22 20:40	1
Toluene	ND		0.15		mg/Kg	✱	08/16/22 11:40	08/16/22 20:40	1
Xylenes, Total	ND		0.88		mg/Kg	✱	08/16/22 11:40	08/16/22 20:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 129	08/16/22 11:40	08/16/22 20:40	1
4-Bromofluorobenzene (Surr)	89		76 - 122	08/16/22 11:40	08/16/22 20:40	1
Dibromofluoromethane (Surr)	103		80 - 120	08/16/22 11:40	08/16/22 20:40	1
Toluene-d8 (Surr)	109		80 - 120	08/16/22 11:40	08/16/22 20:40	1

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Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T2-081522-01-5.0

Lab Sample ID: 590-18333-11

Date Collected: 08/15/22 11:15

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 80.2

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.3		mg/Kg	☼	08/16/22 11:40	08/16/22 20:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		41.5 - 162				08/16/22 11:40	08/16/22 20:40	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		12		mg/Kg	☼	08/16/22 09:58	08/17/22 22:15	1
Residual Range Organics (RRO) (C25-C36)	ND		30		mg/Kg	☼	08/16/22 09:58	08/17/22 22:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	83		50 - 150				08/16/22 09:58	08/17/22 22:15	1
n-Triacontane-d62	91		50 - 150				08/16/22 09:58	08/17/22 22:15	1

Client Sample ID: T2-081522-01-6.5

Lab Sample ID: 590-18333-12

Date Collected: 08/15/22 11:20

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 76.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.20		0.032		mg/Kg	☼	08/16/22 11:40	08/16/22 21:01	1
Ethylbenzene	0.16		0.16		mg/Kg	☼	08/16/22 11:40	08/16/22 21:01	1
m,p-Xylene	ND		0.65		mg/Kg	☼	08/16/22 11:40	08/16/22 21:01	1
o-Xylene	ND		0.32		mg/Kg	☼	08/16/22 11:40	08/16/22 21:01	1
Toluene	ND		0.16		mg/Kg	☼	08/16/22 11:40	08/16/22 21:01	1
Xylenes, Total	ND		0.97		mg/Kg	☼	08/16/22 11:40	08/16/22 21:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 129				08/16/22 11:40	08/16/22 21:01	1
4-Bromofluorobenzene (Surr)	146	S1+	76 - 122				08/16/22 11:40	08/16/22 21:01	1
Dibromofluoromethane (Surr)	91		80 - 120				08/16/22 11:40	08/16/22 21:01	1
Toluene-d8 (Surr)	92		80 - 120				08/16/22 11:40	08/16/22 21:01	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1300		81		mg/Kg	☼	08/16/22 11:40	08/17/22 14:01	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		41.5 - 162				08/16/22 11:40	08/17/22 14:01	10

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	4400		130		mg/Kg	☼	08/16/22 09:58	08/17/22 22:35	10
Residual Range Organics (RRO) (C25-C36)	ND		330		mg/Kg	☼	08/16/22 09:58	08/17/22 22:35	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	65		50 - 150				08/16/22 09:58	08/17/22 22:35	10
n-Triacontane-d62	82		50 - 150				08/16/22 09:58	08/17/22 22:35	10

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Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T2-081522-02-2.0

Lab Sample ID: 590-18333-13

Date Collected: 08/15/22 11:25

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 79.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.041		mg/Kg	✱	08/16/22 11:40	08/16/22 21:43	1
Ethylbenzene	ND		0.20		mg/Kg	✱	08/16/22 11:40	08/16/22 21:43	1
m,p-Xylene	ND		0.81		mg/Kg	✱	08/16/22 11:40	08/16/22 21:43	1
o-Xylene	ND		0.41		mg/Kg	✱	08/16/22 11:40	08/16/22 21:43	1
Toluene	ND		0.20		mg/Kg	✱	08/16/22 11:40	08/16/22 21:43	1
Xylenes, Total	ND		1.2		mg/Kg	✱	08/16/22 11:40	08/16/22 21:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 129	08/16/22 11:40	08/16/22 21:43	1
4-Bromofluorobenzene (Surr)	90		76 - 122	08/16/22 11:40	08/16/22 21:43	1
Dibromofluoromethane (Surr)	101		80 - 120	08/16/22 11:40	08/16/22 21:43	1
Toluene-d8 (Surr)	108		80 - 120	08/16/22 11:40	08/16/22 21:43	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	55		10		mg/Kg	✱	08/16/22 11:40	08/16/22 21:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		41.5 - 162	08/16/22 11:40	08/16/22 21:43	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		12		mg/Kg	✱	08/16/22 09:58	08/17/22 22:55	1
Residual Range Organics (RRO) (C25-C36)	38		31		mg/Kg	✱	08/16/22 09:58	08/17/22 22:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	83		50 - 150	08/16/22 09:58	08/17/22 22:55	1
n-Triacontane-d62	89		50 - 150	08/16/22 09:58	08/17/22 22:55	1

Client Sample ID: T2-081522-02-4.0

Lab Sample ID: 590-18333-14

Date Collected: 08/15/22 11:30

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 77.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.034		mg/Kg	✱	08/16/22 11:40	08/16/22 22:03	1
Ethylbenzene	ND		0.17		mg/Kg	✱	08/16/22 11:40	08/16/22 22:03	1
m,p-Xylene	ND		0.69		mg/Kg	✱	08/16/22 11:40	08/16/22 22:03	1
o-Xylene	ND		0.34		mg/Kg	✱	08/16/22 11:40	08/16/22 22:03	1
Toluene	ND		0.17		mg/Kg	✱	08/16/22 11:40	08/16/22 22:03	1
Xylenes, Total	ND		1.0		mg/Kg	✱	08/16/22 11:40	08/16/22 22:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 129	08/16/22 11:40	08/16/22 22:03	1
4-Bromofluorobenzene (Surr)	85		76 - 122	08/16/22 11:40	08/16/22 22:03	1
Dibromofluoromethane (Surr)	97		80 - 120	08/16/22 11:40	08/16/22 22:03	1
Toluene-d8 (Surr)	105		80 - 120	08/16/22 11:40	08/16/22 22:03	1

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Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T2-081522-02-4.0

Lab Sample ID: 590-18333-14

Date Collected: 08/15/22 11:30

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 77.8

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		8.6		mg/Kg	☼	08/16/22 11:40	08/16/22 22:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		41.5 - 162				08/16/22 11:40	08/16/22 22:03	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		13		mg/Kg	☼	08/16/22 09:58	08/17/22 23:15	1
Residual Range Organics (RRO) (C25-C36)	ND		32		mg/Kg	☼	08/16/22 09:58	08/17/22 23:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150				08/16/22 09:58	08/17/22 23:15	1
n-Triacontane-d62	89		50 - 150				08/16/22 09:58	08/17/22 23:15	1

Client Sample ID: T2-081522-02-6.5

Lab Sample ID: 590-18333-15

Date Collected: 08/15/22 11:35

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 78.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.057		0.033		mg/Kg	☼	08/16/22 11:40	08/16/22 22:24	1
Ethylbenzene	3.5		0.16		mg/Kg	☼	08/16/22 11:40	08/16/22 22:24	1
m,p-Xylene	ND		0.66		mg/Kg	☼	08/16/22 11:40	08/16/22 22:24	1
o-Xylene	ND		0.33		mg/Kg	☼	08/16/22 11:40	08/16/22 22:24	1
Toluene	ND		0.16		mg/Kg	☼	08/16/22 11:40	08/16/22 22:24	1
Xylenes, Total	ND		0.98		mg/Kg	☼	08/16/22 11:40	08/16/22 22:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		75 - 129				08/16/22 11:40	08/16/22 22:24	1
4-Bromofluorobenzene (Surr)	174	S1+	76 - 122				08/16/22 11:40	08/16/22 22:24	1
Dibromofluoromethane (Surr)	98		80 - 120				08/16/22 11:40	08/16/22 22:24	1
Toluene-d8 (Surr)	81		80 - 120				08/16/22 11:40	08/16/22 22:24	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1600		82		mg/Kg	☼	08/16/22 11:40	08/17/22 14:23	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		41.5 - 162				08/16/22 11:40	08/17/22 14:23	10

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	4200		120		mg/Kg	☼	08/16/22 09:58	08/17/22 23:36	10
Residual Range Organics (RRO) (C25-C36)	ND		310		mg/Kg	☼	08/16/22 09:58	08/17/22 23:36	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		50 - 150				08/16/22 09:58	08/17/22 23:36	10
n-Triacontane-d62	87		50 - 150				08/16/22 09:58	08/17/22 23:36	10

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T2-081522-03-2.0

Lab Sample ID: 590-18333-16

Date Collected: 08/15/22 11:40

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 81.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.027		mg/Kg	✧	08/16/22 11:40	08/16/22 22:45	1
Ethylbenzene	ND		0.13		mg/Kg	✧	08/16/22 11:40	08/16/22 22:45	1
m,p-Xylene	ND		0.53		mg/Kg	✧	08/16/22 11:40	08/16/22 22:45	1
o-Xylene	ND		0.27		mg/Kg	✧	08/16/22 11:40	08/16/22 22:45	1
Toluene	ND		0.13		mg/Kg	✧	08/16/22 11:40	08/16/22 22:45	1
Xylenes, Total	ND		0.80		mg/Kg	✧	08/16/22 11:40	08/16/22 22:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 129	08/16/22 11:40	08/16/22 22:45	1
4-Bromofluorobenzene (Surr)	95		76 - 122	08/16/22 11:40	08/16/22 22:45	1
Dibromofluoromethane (Surr)	98		80 - 120	08/16/22 11:40	08/16/22 22:45	1
Toluene-d8 (Surr)	110		80 - 120	08/16/22 11:40	08/16/22 22:45	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	7.3		6.6		mg/Kg	✧	08/16/22 11:40	08/16/22 22:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		41.5 - 162	08/16/22 11:40	08/16/22 22:45	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	53		12		mg/Kg	✧	08/16/22 09:58	08/17/22 23:56	1
Residual Range Organics (RRO) (C25-C36)	270		30		mg/Kg	✧	08/16/22 09:58	08/17/22 23:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	91		50 - 150	08/16/22 09:58	08/17/22 23:56	1
n-Triacontane-d62	95		50 - 150	08/16/22 09:58	08/17/22 23:56	1

Client Sample ID: T2-081522-03-4.0

Lab Sample ID: 590-18333-17

Date Collected: 08/15/22 11:45

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 77.0

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.034		mg/Kg	✧	08/16/22 11:40	08/16/22 23:06	1
Ethylbenzene	ND		0.17		mg/Kg	✧	08/16/22 11:40	08/16/22 23:06	1
m,p-Xylene	ND		0.68		mg/Kg	✧	08/16/22 11:40	08/16/22 23:06	1
o-Xylene	ND		0.34		mg/Kg	✧	08/16/22 11:40	08/16/22 23:06	1
Toluene	ND		0.17		mg/Kg	✧	08/16/22 11:40	08/16/22 23:06	1
Xylenes, Total	ND		1.0		mg/Kg	✧	08/16/22 11:40	08/16/22 23:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 129	08/16/22 11:40	08/16/22 23:06	1
4-Bromofluorobenzene (Surr)	91		76 - 122	08/16/22 11:40	08/16/22 23:06	1
Dibromofluoromethane (Surr)	99		80 - 120	08/16/22 11:40	08/16/22 23:06	1
Toluene-d8 (Surr)	111		80 - 120	08/16/22 11:40	08/16/22 23:06	1

Eurofins Spokane

Client Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T2-081522-03-4.0

Lab Sample ID: 590-18333-17

Date Collected: 08/15/22 11:45

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 77.0

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		8.5		mg/Kg	☼	08/16/22 11:40	08/16/22 23:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		41.5 - 162				08/16/22 11:40	08/16/22 23:06	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		13		mg/Kg	☼	08/16/22 09:58	08/18/22 00:17	1
Residual Range Organics (RRO) (C25-C36)	44		31		mg/Kg	☼	08/16/22 09:58	08/18/22 00:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150				08/16/22 09:58	08/18/22 00:17	1
n-Triacontane-d62	90		50 - 150				08/16/22 09:58	08/18/22 00:17	1

Client Sample ID: T2-081522-03-10.0

Lab Sample ID: 590-18333-18

Date Collected: 08/15/22 11:50

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 74.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.036		mg/Kg	☼	08/16/22 11:40	08/16/22 23:28	1
Ethylbenzene	ND		0.18		mg/Kg	☼	08/16/22 11:40	08/16/22 23:28	1
m,p-Xylene	ND		0.72		mg/Kg	☼	08/16/22 11:40	08/16/22 23:28	1
o-Xylene	ND		0.36		mg/Kg	☼	08/16/22 11:40	08/16/22 23:28	1
Toluene	ND		0.18		mg/Kg	☼	08/16/22 11:40	08/16/22 23:28	1
Xylenes, Total	ND		1.1		mg/Kg	☼	08/16/22 11:40	08/16/22 23:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 129				08/16/22 11:40	08/16/22 23:28	1
4-Bromofluorobenzene (Surr)	93		76 - 122				08/16/22 11:40	08/16/22 23:28	1
Dibromofluoromethane (Surr)	94		80 - 120				08/16/22 11:40	08/16/22 23:28	1
Toluene-d8 (Surr)	109		80 - 120				08/16/22 11:40	08/16/22 23:28	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	18		9.0		mg/Kg	☼	08/16/22 11:40	08/16/22 23:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		41.5 - 162				08/16/22 11:40	08/16/22 23:28	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	26		13		mg/Kg	☼	08/16/22 09:58	08/18/22 00:57	1
Residual Range Organics (RRO) (C25-C36)	ND		32		mg/Kg	☼	08/16/22 09:58	08/18/22 00:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				08/16/22 09:58	08/18/22 00:57	1
n-Triacontane-d62	89		50 - 150				08/16/22 09:58	08/18/22 00:57	1

Eurofins Spokane

QC Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-37604/1-A

Matrix: Solid

Analysis Batch: 37602

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 37604

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020		mg/Kg		08/16/22 11:40	08/16/22 14:17	1
Ethylbenzene	ND		0.10		mg/Kg		08/16/22 11:40	08/16/22 14:17	1
m,p-Xylene	ND		0.40		mg/Kg		08/16/22 11:40	08/16/22 14:17	1
o-Xylene	ND		0.20		mg/Kg		08/16/22 11:40	08/16/22 14:17	1
Toluene	ND		0.10		mg/Kg		08/16/22 11:40	08/16/22 14:17	1
Xylenes, Total	ND		0.60		mg/Kg		08/16/22 11:40	08/16/22 14:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		75 - 129	08/16/22 11:40	08/16/22 14:17	1
4-Bromofluorobenzene (Surr)	94		76 - 122	08/16/22 11:40	08/16/22 14:17	1
Dibromofluoromethane (Surr)	93		80 - 120	08/16/22 11:40	08/16/22 14:17	1
Toluene-d8 (Surr)	117		80 - 120	08/16/22 11:40	08/16/22 14:17	1

Lab Sample ID: LCS 590-37604/2-A

Matrix: Solid

Analysis Batch: 37602

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 37604

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.500	0.460		mg/Kg		92	76 - 139
Ethylbenzene	0.500	0.503		mg/Kg		101	77 - 135
m,p-Xylene	0.500	0.502		mg/Kg		100	78 - 130
o-Xylene	0.500	0.460		mg/Kg		92	77 - 129
Toluene	0.500	0.512		mg/Kg		102	77 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		75 - 129
4-Bromofluorobenzene (Surr)	92		76 - 122
Dibromofluoromethane (Surr)	92		80 - 120
Toluene-d8 (Surr)	108		80 - 120

Lab Sample ID: 590-18333-2 MS

Matrix: Solid

Analysis Batch: 37602

Client Sample ID: T1-081522-01-5.0

Prep Type: Total/NA

Prep Batch: 37604

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.21		0.763	0.928		mg/Kg	⊛	94	76 - 139
Ethylbenzene	0.39		0.763	1.14		mg/Kg	⊛	97	77 - 135
m,p-Xylene	ND		0.763	1.29		mg/Kg	⊛	103	78 - 130
o-Xylene	ND		0.763	0.937		mg/Kg	⊛	98	77 - 129
Toluene	0.18		0.763	0.916		mg/Kg	⊛	97	77 - 131

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		75 - 129
4-Bromofluorobenzene (Surr)	127	S1+	76 - 122
Dibromofluoromethane (Surr)	89		80 - 120
Toluene-d8 (Surr)	107		80 - 120

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QC Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 590-18333-2 MSD

Matrix: Solid

Analysis Batch: 37602

Client Sample ID: T1-081522-01-5.0

Prep Type: Total/NA

Prep Batch: 37604

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.21		0.763	0.924		mg/Kg	⊛	93	76 - 139	0	14
Ethylbenzene	0.39		0.763	1.12		mg/Kg	⊛	95	77 - 135	2	13
m,p-Xylene	ND		0.763	1.22		mg/Kg	⊛	94	78 - 130	5	23
o-Xylene	ND		0.763	0.938		mg/Kg	⊛	98	77 - 129	0	15
Toluene	0.18		0.763	0.901		mg/Kg	⊛	95	77 - 131	2	14

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		75 - 129
4-Bromofluorobenzene (Surr)	128	S1+	76 - 122
Dibromofluoromethane (Surr)	90		80 - 120
Toluene-d8 (Surr)	104		80 - 120

Lab Sample ID: 590-18333-1 DU

Matrix: Solid

Analysis Batch: 37602

Client Sample ID: T1-081522-01-3.0

Prep Type: Total/NA

Prep Batch: 37604

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	ND		ND		mg/Kg	⊛	NC	25
Ethylbenzene	ND		ND		mg/Kg	⊛	NC	25
m,p-Xylene	ND		ND		mg/Kg	⊛	NC	23
o-Xylene	ND		ND		mg/Kg	⊛	NC	25
Toluene	ND		ND		mg/Kg	⊛	NC	25
Xylenes, Total	ND		ND		mg/Kg	⊛	NC	25

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		75 - 129
4-Bromofluorobenzene (Surr)	96		76 - 122
Dibromofluoromethane (Surr)	100		80 - 120
Toluene-d8 (Surr)	107		80 - 120

Lab Sample ID: 590-18333-9 DU

Matrix: Solid

Analysis Batch: 37602

Client Sample ID: T1-081522-03-10.0

Prep Type: Total/NA

Prep Batch: 37604

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	ND		ND		mg/Kg	⊛	NC	25
Ethylbenzene	ND		ND		mg/Kg	⊛	NC	25
m,p-Xylene	ND		ND		mg/Kg	⊛	NC	23
o-Xylene	ND		ND		mg/Kg	⊛	NC	25
Toluene	ND		ND		mg/Kg	⊛	NC	25
Xylenes, Total	ND		ND		mg/Kg	⊛	NC	25

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		75 - 129
4-Bromofluorobenzene (Surr)	180	S1+	76 - 122
Dibromofluoromethane (Surr)	106		80 - 120
Toluene-d8 (Surr)	91		80 - 120

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QC Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-37604/1-A
Matrix: Solid
Analysis Batch: 37601

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37604

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		08/16/22 11:40	08/16/22 14:17	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		41.5 - 162				08/16/22 11:40	08/16/22 14:17	1

Lab Sample ID: LCS 590-37604/3-A
Matrix: Solid
Analysis Batch: 37601

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37604

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline	50.2	44.9		mg/Kg		89	74.4 - 124
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	93		41.5 - 162				

Lab Sample ID: 590-18333-1 DU
Matrix: Solid
Analysis Batch: 37601

Client Sample ID: T1-081522-01-3.0
Prep Type: Total/NA
Prep Batch: 37604

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gasoline	35		38.8		mg/Kg	✖	9	32.3
Surrogate	DU %Recovery	DU Qualifier	Limits					
4-Bromofluorobenzene (Surr)	96		41.5 - 162					

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 590-37593/1-A
Matrix: Solid
Analysis Batch: 37618

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37593

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		10		mg/Kg		08/16/22 09:58	08/17/22 17:30	1
Residual Range Organics (RRO) (C25-C36)	ND		25		mg/Kg		08/16/22 09:58	08/17/22 17:30	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		50 - 150				08/16/22 09:58	08/17/22 17:30	1
n-Triacontane-d62	99		50 - 150				08/16/22 09:58	08/17/22 17:30	1

Lab Sample ID: LCS 590-37593/2-A
Matrix: Solid
Analysis Batch: 37618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37593

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics (DRO) (C10-C25)	66.7	75.8		mg/Kg		114	50 - 150

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QC Sample Results

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 590-37593/2-A

Matrix: Solid

Analysis Batch: 37618

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 37593

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Residual Range Organics (RRO) (C25-C36)	66.7	79.7		mg/Kg		120	50 - 150

	LCS %Recovery	LCS Qualifier	Limits
Surrogate			
o-Terphenyl	113		50 - 150
n-Triacontane-d62	112		50 - 150

Lab Sample ID: 590-18333-3 DU

Matrix: Solid

Analysis Batch: 37618

Client Sample ID: T1-081522-02-3.0

Prep Type: Total/NA

Prep Batch: 37593

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	41		44.0		mg/Kg	✱	8	40
Residual Range Organics (RRO) (C25-C36)	170		197		mg/Kg	✱	13	40

	DU %Recovery	DU Qualifier	Limits
Surrogate			
o-Terphenyl	84		50 - 150
n-Triacontane-d62	87		50 - 150

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T1-081522-01-3.0

Lab Sample ID: 590-18333-1

Date Collected: 08/15/22 10:00

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T1-081522-01-3.0

Lab Sample ID: 590-18333-1

Date Collected: 08/15/22 10:00

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 78.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.786 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 15:22	JSP	EET SPK
Total/NA	Prep	5035			9.786 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 15:22	JSP	EET SPK
Total/NA	Prep	3550C			15.70 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		1			37618	08/17/22 18:10	NMI	EET SPK

Client Sample ID: T1-081522-01-5.0

Lab Sample ID: 590-18333-2

Date Collected: 08/15/22 10:05

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T1-081522-01-5.0

Lab Sample ID: 590-18333-2

Date Collected: 08/15/22 10:05

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 79.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.916 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 16:05	JSP	EET SPK
Total/NA	Prep	5035			9.916 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	37621	08/17/22 12:56	JSP	EET SPK
Total/NA	Prep	3550C			15.03 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		10			37618	08/17/22 18:31	NMI	EET SPK

Client Sample ID: T1-081522-02-3.0

Lab Sample ID: 590-18333-3

Date Collected: 08/15/22 10:10

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T1-081522-02-3.0

Lab Sample ID: 590-18333-3

Date Collected: 08/15/22 10:10

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 83.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.664 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 17:09	JSP	EET SPK
Total/NA	Prep	5035			9.664 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 17:09	JSP	EET SPK
Total/NA	Prep	3550C			15.68 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		1			37618	08/17/22 18:51	NMI	EET SPK

Client Sample ID: T1-081522-02-5.0

Lab Sample ID: 590-18333-4

Date Collected: 08/15/22 10:30

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T1-081522-02-5.0

Lab Sample ID: 590-18333-4

Date Collected: 08/15/22 10:30

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 75.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.918 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 17:52	JSP	EET SPK
Total/NA	Prep	5035			4.918 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 17:52	JSP	EET SPK
Total/NA	Prep	3550C			15.38 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		1			37618	08/17/22 19:32	NMI	EET SPK

Client Sample ID: T1-081522-02-7.0

Lab Sample ID: 590-18333-5

Date Collected: 08/15/22 10:35

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T1-081522-02-7.0

Lab Sample ID: 590-18333-5

Date Collected: 08/15/22 10:35

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 74.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.25 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 18:13	JSP	EET SPK
Total/NA	Prep	5035			9.25 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 18:13	JSP	EET SPK
Total/NA	Prep	3550C			15.99 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		1			37618	08/17/22 19:52	NMI	EET SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T1-081522-02-8.0

Lab Sample ID: 590-18333-6

Date Collected: 08/15/22 10:40

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T1-081522-02-8.0

Lab Sample ID: 590-18333-6

Date Collected: 08/15/22 10:40

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 72.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			8.734 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 18:35	JSP	EET SPK
Total/NA	Prep	5035			8.734 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	37621	08/17/22 13:18	JSP	EET SPK
Total/NA	Prep	3550C			15.33 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		10			37618	08/17/22 20:12	NMI	EET SPK

Client Sample ID: T1-081522-03-3.0

Lab Sample ID: 590-18333-7

Date Collected: 08/15/22 10:45

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T1-081522-03-3.0

Lab Sample ID: 590-18333-7

Date Collected: 08/15/22 10:45

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			8.056 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 18:56	JSP	EET SPK
Total/NA	Prep	5035			8.056 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 18:56	JSP	EET SPK
Total/NA	Prep	3550C			15.88 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		5			37618	08/17/22 20:33	NMI	EET SPK

Client Sample ID: T1-081522-03-5.0

Lab Sample ID: 590-18333-8

Date Collected: 08/15/22 11:00

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T1-081522-03-5.0

Lab Sample ID: 590-18333-8

Date Collected: 08/15/22 11:00

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 86.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			8.618 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 19:17	JSP	EET SPK
Total/NA	Prep	5035			8.618 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 19:17	JSP	EET SPK
Total/NA	Prep	3550C			15.36 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		5			37618	08/17/22 21:13	NMI	EET SPK

Client Sample ID: T1-081522-03-10.0

Lab Sample ID: 590-18333-9

Date Collected: 08/15/22 11:05

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T1-081522-03-10.0

Lab Sample ID: 590-18333-9

Date Collected: 08/15/22 11:05

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 74.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.821 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 19:38	JSP	EET SPK
Total/NA	Prep	5035			9.821 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	37621	08/17/22 13:39	JSP	EET SPK
Total/NA	Prep	3550C			12.24 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		1			37618	08/17/22 21:34	NMI	EET SPK

Client Sample ID: T2-081522-01-3.0

Lab Sample ID: 590-18333-10

Date Collected: 08/15/22 11:10

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T2-081522-01-3.0

Lab Sample ID: 590-18333-10

Date Collected: 08/15/22 11:10

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 79.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.89 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 20:20	JSP	EET SPK
Total/NA	Prep	5035			9.89 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 20:20	JSP	EET SPK
Total/NA	Prep	3550C			15.82 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		1			37618	08/17/22 21:54	NMI	EET SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T2-081522-01-5.0

Lab Sample ID: 590-18333-11

Date Collected: 08/15/22 11:15

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T2-081522-01-5.0

Lab Sample ID: 590-18333-11

Date Collected: 08/15/22 11:15

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 80.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			10.283 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 20:40	JSP	EET SPK
Total/NA	Prep	5035			10.283 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 20:40	JSP	EET SPK
Total/NA	Prep	3550C			15.79 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		1			37618	08/17/22 22:15	NMI	EET SPK

Client Sample ID: T2-081522-01-6.5

Lab Sample ID: 590-18333-12

Date Collected: 08/15/22 11:20

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T2-081522-01-6.5

Lab Sample ID: 590-18333-12

Date Collected: 08/15/22 11:20

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 76.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.983 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 21:01	JSP	EET SPK
Total/NA	Prep	5035			9.983 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	37621	08/17/22 14:01	JSP	EET SPK
Total/NA	Prep	3550C			15.04 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		10			37618	08/17/22 22:35	NMI	EET SPK

Client Sample ID: T2-081522-02-2.0

Lab Sample ID: 590-18333-13

Date Collected: 08/15/22 11:25

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T2-081522-02-2.0

Lab Sample ID: 590-18333-13

Date Collected: 08/15/22 11:25

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 79.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7.026 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 21:43	JSP	EET SPK
Total/NA	Prep	5035			7.026 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 21:43	JSP	EET SPK
Total/NA	Prep	3550C			15.23 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		1			37618	08/17/22 22:55	NMI	EET SPK

Client Sample ID: T2-081522-02-4.0

Lab Sample ID: 590-18333-14

Date Collected: 08/15/22 11:30

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T2-081522-02-4.0

Lab Sample ID: 590-18333-14

Date Collected: 08/15/22 11:30

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 77.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			8.977 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 22:03	JSP	EET SPK
Total/NA	Prep	5035			8.977 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 22:03	JSP	EET SPK
Total/NA	Prep	3550C			15.04 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		1			37618	08/17/22 23:15	NMI	EET SPK

Client Sample ID: T2-081522-02-6.5

Lab Sample ID: 590-18333-15

Date Collected: 08/15/22 11:35

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T2-081522-02-6.5

Lab Sample ID: 590-18333-15

Date Collected: 08/15/22 11:35

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 78.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.298 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 22:24	JSP	EET SPK
Total/NA	Prep	5035			9.298 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	37621	08/17/22 14:23	JSP	EET SPK
Total/NA	Prep	3550C			15.40 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		10			37618	08/17/22 23:36	NMI	EET SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T2-081522-03-2.0

Lab Sample ID: 590-18333-16

Date Collected: 08/15/22 11:40

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T2-081522-03-2.0

Lab Sample ID: 590-18333-16

Date Collected: 08/15/22 11:40

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 81.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			11.063 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 22:45	JSP	EET SPK
Total/NA	Prep	5035			11.063 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 22:45	JSP	EET SPK
Total/NA	Prep	3550C			15.13 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		1			37618	08/17/22 23:56	NMI	EET SPK

Client Sample ID: T2-081522-03-4.0

Lab Sample ID: 590-18333-17

Date Collected: 08/15/22 11:45

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Client Sample ID: T2-081522-03-4.0

Lab Sample ID: 590-18333-17

Date Collected: 08/15/22 11:45

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 77.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.279 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 23:06	JSP	EET SPK
Total/NA	Prep	5035			9.279 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 23:06	JSP	EET SPK
Total/NA	Prep	3550C			15.58 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		1			37618	08/18/22 00:17	NMI	EET SPK

Client Sample ID: T2-081522-03-10.0

Lab Sample ID: 590-18333-18

Date Collected: 08/15/22 11:50

Matrix: Solid

Date Received: 08/16/22 08:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			37591	08/16/22 09:39	NMI	EET SPK

Eurofins Spokane

Lab Chronicle

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Client Sample ID: T2-081522-03-10.0

Lab Sample ID: 590-18333-18

Date Collected: 08/15/22 11:50

Matrix: Solid

Date Received: 08/16/22 08:25

Percent Solids: 74.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.161 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	8260D		1	0.86 mL	43 mL	37602	08/16/22 23:28	JSP	EET SPK
Total/NA	Prep	5035			9.161 g	10 mL	37604	08/16/22 11:40	JSP	EET SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	37601	08/16/22 23:28	JSP	EET SPK
Total/NA	Prep	3550C			15.70 g	5 mL	37593	08/16/22 09:58	NMI	EET SPK
Total/NA	Analysis	NWTPH-Dx		1			37618	08/18/22 00:57	NMI	EET SPK

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Laboratory: Eurofins Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-06-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: Fulcrum Environmental
Project/Site: Four Star

Job ID: 590-18333-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	EET SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	EET SPK
Moisture	Percent Moisture	EPA	EET SPK
3550C	Ultrasonic Extraction	SW846	EET SPK
5035	Closed System Purge and Trap	SW846	EET SPK

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Eurofins TestAmerica, Spokane
11922 E 1st Avenue

Chain of Custody Record



Spokane, WA 99206-5302
phone 509.924.9200 fax 509.924.9290

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact		Project Manager: Scott Green +		Site Contact:		Date:		COC No:	
Fulcrum Environmental		Email:		Lab Contact:		Carrier:		_____ of _____ COCs	
207 W Boone Ave		Tel/Fax						TALS Project #:	
Spokane, WA 99201		Analysis Turnaround Time						Sampler	
509-459-9220		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS						For Lab Use Only*	
		TAT if different from Below _____						Walk-in Client:	
Project Name: Four Star		<input type="checkbox"/> 2 weeks						Lab Sampling:	
Site: Pullman		<input type="checkbox"/> 1 week							
PO# 223516.00		<input type="checkbox"/> 2 days						Job / SDG No.	
		<input checked="" type="checkbox"/> 1 day							
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Sample Specific Notes:
T1-081522-01-30		081522	1000	G	S	3		X	
T1-081522-01-50			1005					X	
T1-081522-01-30			1010					X	
T1-081522-02-50			1030					X	
T1-081522-02-70			1035					X	
T1-081522-02-80			1040					X	
T1-081522-03-30			1045					X	
T1-081522-03-50			1100					X	
T1-081522-03-100			1105					X	
T2-081522-01-30			1110					X	
T2-081522-01-50			1115					X	
T2-081522-01-65			1120					X	
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other									
Possible Hazard Identification Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.									
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown									
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months									
Special Instructions/QC Requirements & Comments									
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No. Cooler Temp. (°C): Obs'd: 36°C Cor'd: 41°C Therm ID No.: 101738011									
Relinquished by: [Signature]		Company: Fulcrum		Date/Time: 8/16/22 8:15		Received by: [Signature]		Company: GETH Spokane	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:	

Chain of Custody Record



Environment Testing
America

Spokane, WA 99206-5302

phone 509 924 9200 fax 509.924 9290

Regulatory Program

 DW☐ NPDES☐ RCRA☐ Other:

TestAmerica Laboratories, Inc. d/b/a Euroflns TestAmerica

[illegible]

Login Sample Receipt Checklist

Client: Fulcrum Environmental

Job Number: 590-18333-1

Login Number: 18333

List Source: Eurofins Spokane

List Number: 1

Creator: Vaughan, Madison 1

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

September 7, 2022

Scott Groat
Fulcrum Environmental Consulting
207 W. Boone Avenue
Spokane, WA 99201

Dear Mr. Groat,

Please find enclosed the analytical data report for the Four Star Fuel Release Project located in Pullman, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

A handwritten signature in black ink, appearing to read "Sherry L. Chilcutt".

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE

Ph: 360-352-2110

Olympia, WA 98506

Fax: 360-352-4154

Client: Fulcrum Environmental Consulting

Date:

Page: 1

of 1

Project Manager: Scott Groat

Address: 207 W. Base Avenue

Project Name: FOUR STAR Fuel Release

City: Spokane

State: WA

Zip: 99201

Location: Pullman, WA

City, State:

Phone: 509-459-9220

Fax: 509-459-9219

Collector: S. Groat

Date of Collection:

Client Project #

Email: Sgroat@efulcrum.net



Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270	Field Notes
1	FS-081522-PB-60-	11.5	8/24/2022	Soil	Jar 200A x 2												8/24
2	-61-	11.5	11/23														
3	-62-	10.5	11/22														
4	-63-	8.5	11/13														
5	-64-	6.5	11/08														
6	-65-	6.0	11/00														
7	-66-	12.5	8/24/2022														8/25
8	-67-	10.5	9/09														
9	-68-	8.5	9/13														
10	-69-	4.0	9/19														
11	-70-	8.0	9/26														
12	-71-	11.5	11/00														
13	-72-	8.5	11/08														
14	-73-	6.0	11/13														
15	FS-091522-PB-73-12.5	12.5	11/10														
16	FS-081522-SW-76-12.5	12.5	8/24/2022														8/26
17	-77-	7.5	8/38														
18	-78-	11.5	8/44														
19	-79-	12.5	8/50														
20	-80-	8.5	9/00														
Relinquished by: <u>Scott Groat</u> Date / Time: <u>8/24/2022 1700</u>					Received by: <u>[Signature]</u> Date / Time: <u>8-30-22 1100</u>					Sample Receipt					Remarks: <u>8/29/22</u>		
Relinquished by:					Received by:					Good Condition? Y N					TAT: 24HR 48HR 5-DAY		
Relinquished by:					Received by:					Cooler Temp. °C							
Relinquished by:					Received by:					Sample Temp. °C							
Relinquished by:					Received by:					Total Number of Containers							

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - Originator

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # L22H083

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method	FS-081522- Blank	FS-081522- PB-60-11.5	FS-081522- SW-61- 11.5	FS-081522- SW-62- 10.5	FS-081522- SW-63-8.5	FS-081522- SW-63-8.5 Dup
Date Sampled		N/A	8/24/2022	8/24/2022	8/24/2022	8/24/2022	8/24/2022	8/24/2022
Date Analyzed	PQL	9/2/2022	9/2/2022	9/2/2022	9/2/2022	9/2/2022	9/2/2022	9/2/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	nd	nd	nd	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	0.15	nd	nd	nd	nd	nd	nd	nd
Gasoline	10	nd	nd	nd	nd	nd	nd	nd
Surrogate Recovery	Acceptable Limits (%)							
Dibromofluoromethane	27-188	111	109	100	99	98	98	
1,2-Dichloroethane-d4	17-212	111	109	108	110	104	102	
Toluene-d8	41-142	93	96	98	96	100	98	
4-Bromofluorobenzene	47-167	91	90	88	89	90	91	

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

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Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-081522- SW-64-6.5	FS-081522- SW-65- +6.0	FS-081522- SW-66- 12.5	FS-081522- SW-67- 10.5	FS-081522- SW-68-8.5	FS-081522- SW-69-4.0
Date Sampled		8/24/2022	8/24/2022	8/25/2022	8/25/2022	8/25/2022	8/25/2022
Date Analyzed	PQL (mg/kg)	9/2/2022 (mg/kg)	9/2/2022 (mg/kg)	9/2/2022 (mg/kg)	9/2/2022 (mg/kg)	9/1/2022 (mg/kg)	9/2/2022 (mg/kg)
Benzene	0.02	0.44	nd	nd	nd	nd	nd
Toluene	0.10	0.21	nd	nd	nd	nd	nd
Ethylbenzene	0.05	22	nd	nd	nd	nd	0.49
Total Xylenes	0.15	1.5	nd	nd	nd	nd	nd
Gasoline	10	2100	nd	nd	nd	nd	220

Surrogate Recovery	Acceptable Limits (%)						
Dibromofluoromethane	27-188	79	98	96	97	101	91
1,2-Dichloroethane-d4	17-212	88	100	101	104	104	94
Toluene-d8	41-142	98	100	99	100	101	102
4-Bromofluorobenzene	47-167	112	91	90	88	95	99

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

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Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-081522- SW-70- +8.0	FS-081522- SW-71- 11.5	FS-081522- SW-72-8.5	FS-081522- SW-73-6.0	FS-081522- SW-74- +9.0	FS-081522- PB-75-12.5
Date Sampled		8/25/2022	8/25/2022	8/25/2022	8/25/2022	8/25/2022	8/25/2022
Date Analyzed	PQL	9/1/2022	8/31/2022	8/31/2022	8/31/2022	8/31/2022	8/31/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	0.025	0.61	nd	nd
Toluene	0.10	nd	nd	nd	0.21	nd	nd
Ethylbenzene	0.05	0.098	nd	nd	3.0	nd	nd
Total Xylenes	0.15	nd	nd	nd	3.2	nd	nd
Gasoline	10	nd	nd	nd	230	nd	nd

Surrogate Recovery	Acceptable Limits (%)						
Dibromofluoromethane	27-188	101	97	96	91	97	100
1,2-Dichloroethane-d4	17-212	104	104	105	94	102	104
Toluene-d8	41-142	98	102	100	97	102	102
4-Bromofluorobenzene	47-167	99	87	94	98	91	91

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ANALYSES PERFORMED BY: Melissa Harrington

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Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		Method	FS-081522- Blank	FS-081522- PB-75-12.5 Dup	FS-081522- SW-76- 12.5	FS-081522- SW-77- +7.5	FS-081522- SW-78- 11.5	FS-081522- SW-79- +2.5
Date Sampled		N/A	8/25/2022	8/26/2022	8/26/2022	8/26/2022	8/26/2022	8/26/2022
Date Analyzed	PQL (mg/kg)	8/31/2022 (mg/kg)	8/31/2022 (mg/kg)	8/31/2022 (mg/kg)	8/31/2022 (mg/kg)	8/31/2022 (mg/kg)	8/31/2022 (mg/kg)	8/31/2022 (mg/kg)
Benzene	0.02	nd	nd	nd	nd	nd	nd	< 0.2
Toluene	0.10	nd	nd	nd	nd	nd	nd	1.6
Ethylbenzene	0.05	nd	nd	nd	nd	0.17	64	
Total Xylenes	0.15	nd	nd	nd	0.17	nd	160	
Gasoline	10	nd	nd	nd	nd	27	9900	
Surrogate Recovery	Acceptable Limits (%)							
Dibromofluoromethane	27-188	99	97	97	98	95	75	
1,2-Dichloroethane-d4	17-212	102	102	106	110	107	94	
Toluene-d8	41-142	98	101	101	99	98	90	
4-Bromofluorobenzene	47-167	90	90	91	94	96	108	
"nd" Indicates not detected at listed detection limit.								
"int" Indicates that interference prevents determination.								
"<" PQL elevated due to dilution.								

ANALYSES PERFORMED BY: Melissa Harrington

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Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260D) in Soil

Sample Description		FS-081522- SW-80-8.5	FS-081522- SW-80-8.5 Dup	FS-081522- ASP-01	FS-081522- ASP-01 Dup	Method Blank
Date Sampled		8/26/2022	8/26/2022	8/29/2022	8/29/2022	N/A
Date Analyzed	PQL	8/31/2022	8/31/2022	9/1/2022	9/1/2022	9/1/2022
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzene	0.02	nd	nd	nd	nd	nd
Toluene	0.10	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd
Total Xylenes	0.15	nd	nd	nd	nd	nd
Gasoline	10	nd	nd	nd	nd	nd

Surrogate Recovery	Acceptable Limits (%)					
Dibromofluoromethane	27-188	96	99	97	97	103
1,2-Dichloroethane-d4	17-212	106	106	95	91	101
Toluene-d8	41-142	100	102	100	102	97
4-Bromofluorobenzene	47-167	91	93	90	92	91

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ANALYSES PERFORMED BY: Melissa Harrington

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QA/QC for Volatile Organic Compounds by EPA Method 8260D in Soil

Matrix Spike Sample Identification: FS-081522-SW-63-8.5								
Date Analyzed: 9/2/2022								
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Recovery Limits (%)	Data Flag
Benzene	0.25	0.21	0.20	83	80	3.4	65-126	
Toluene	0.25	0.20	0.20	82	81	1.0	67-136	
Ethylbenzene	0.25	0.23	0.22	94	88	5.7	55-140	
Total Xylenes	0.75	0.67	0.66	90	89	1.5	43-149	
Surrogate Recovery (%)								
				MS	MSD			
Dibromofluoromethane				99	100		27-188	
1,2-Dichloroethane-d4				99	99		17-212	
Toluene-d8				100	102		41-142	
4-Bromofluorobenzene				94	93		47-167	

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Melissa Harrington

Laboratory Control Sample

Date Analyzed: 9/2/2022					
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	Recovery Limits (%)	Data Flag
Benzene	0.25	0.24	98	65-118	
Toluene	0.25	0.24	96	68-125	
Ethylbenzene	0.25	0.25	100	49-144	
Total Xylenes	0.75	0.75	100	38-140	
Surrogate Recovery					
Dibromofluoromethane			108	27-188	
1,2-Dichloroethane-d4			93	17-212	
Toluene-d8			97	41-142	
4-Bromofluorobenzene			95	47-167	

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
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Libby Project # L22H083

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QA/QC for Volatile Organic Compounds by EPA Method 8260D in Soil

Matrix Spike Sample Identification: FS-081522-PB-75-12.5								
Date Analyzed: 8/31/2022								
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Recovery Limits (%)	Data Flag
Benzene	0.25	0.25	0.25	99	100	0.8	65-126	
Toluene	0.25	0.23	0.24	92	98	5.9	65-126	
Ethylbenzene	0.25	0.26	0.26	103	103	0.0	55-140	
Total Xylenes	0.75	0.76	0.78	101	104	3.0	43-149	
Surrogate Recovery (%)								
				MS	MSD			
Dibromofluoromethane				98	99		27-188	
1,2-Dichloroethane-d4				104	100		17-212	
Toluene-d8				102	104		41-142	
4-Bromofluorobenzene				95	95		47-167	

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Melissa Harrington

Laboratory Control Sample

Date Analyzed: 8/31/2022					
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	Recovery Limits (%)	Data Flag
Benzene	0.25	0.26	104	65-118	
Toluene	0.25	0.25	99	68-125	
Ethylbenzene	0.25	0.27	109	49-144	
Total Xylenes	0.75	0.81	107	38-140	
Surrogate Recovery					
Dibromofluoromethane			101	27-188	
1,2-Dichloroethane-d4			98	17-212	
Toluene-d8			99	41-142	
4-Bromofluorobenzene			96	47-167	

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT
Fulcrum Environmental Consulting
Pullman, Washington
Libby Project # L22H083

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

QA/QC for Volatile Organic Compounds by EPA Method 8260D in Soil

Matrix Spike Sample Identification: FS-081522-ASP-01								
Date Analyzed: 9/1/2022								
	Spiked Conc. (mg/kg)	MS Response (mg/kg)	MSD Response (mg/kg)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Recovery Limits (%)	Data Flag
Benzene	0.25	0.24	0.24	95	96	1.3	65-126	
Toluene	0.25	0.24	0.25	94	99	5.0	65-126	
Ethylbenzene	0.25	0.25	0.25	98	101	2.4	55-140	
Total Xylenes	0.75	0.76	0.77	102	103	1.3	43-149	
Surrogate Recovery (%)								
				MS	MSD			
Dibromofluoromethane				99	100		27-188	
1,2-Dichloroethane-d4				94	95		17-212	
Toluene-d8				101	101		41-142	
4-Bromofluorobenzene				96	93		47-167	

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Melissa Harrington

Laboratory Control Sample

Date Analyzed: 9/1/2022					
	Spiked Conc. (mg/kg)	LCS Response (mg/kg)	LCS Recovery (%)	Recovery Limits (%)	Data Flag
Benzene	0.25	0.24	94	65-118	
Toluene	0.25	0.23	92	68-125	
Ethylbenzene	0.25	0.25	101	49-144	
Total Xylenes	0.75	0.75	100	38-140	
Surrogate Recovery					
Dibromofluoromethane			101	27-188	
1,2-Dichloroethane-d4			88	17-212	
Toluene-d8			98	41-142	
4-Bromofluorobenzene			93	47-167	

ANALYSES PERFORMED BY: Melissa Harrington

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # L22H083

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	8/31/2022	111	nd	nd
FS-081522-PB-60-11.5	8/31/2022	105	nd	nd
FS-081522-PB-60-11.5 Dup	8/31/2022	99	nd	nd
FS-081522-SW-61-11.5	8/31/2022	91	nd	nd
FS-081522-SW-62-10.5	8/31/2022	94	nd	nd
FS-081522-SW-63-8.5	8/31/2022	92	nd	nd
FS-081522-SW-64-6.5	8/31/2022	int	2000	nd
FS-081522-SW-65-+6.0	8/31/2022	100	nd	nd
FS-081522-SW-66-12.5	8/31/2022	88	nd	nd
FS-081522-SW-67-10.5	8/31/2022	98	nd	nd
FS-081522-SW-68-8.5	8/31/2022	90	nd	nd
FS-081522-SW-69-4.0	8/31/2022	int	500	nd
FS-081522-SW-70-+8.0	8/31/2022	int	730	nd
FS-081522-SW-70-+8.0 Dup	8/31/2022	int	1400	nd
FS-081522-SW-71-11.5	8/31/2022	89	nd	nd
FS-081522-SW-72-8.5	8/31/2022	94	nd	nd
FS-081522-SW-73-6.0	8/31/2022	int	1900	nd
FS-081522-SW-74-+9.0	8/31/2022	96	nd	nd
FS-081522-PB-75-12.5	8/31/2022	97	nd	nd
FS-081522-SW-76-12.5	8/31/2022	97	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Jenny Anderson

Libby Environmental, Inc.

FOUR STAR FUEL RELEASE PROJECT

Fulcrum Environmental Consulting

Pullman, Washington

Libby Project # L22H083

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

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Email: libbyenv@gmail.com

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	8/31/2022	103	nd	nd
FS-081522-SW-77-+7.5	8/31/2022	91	nd	nd
FS-081522-SW-78-11.5	8/31/2022	95	nd	nd
FS-081522-SW-79-+2.5	8/31/2022	int	90	nd
FS-081522-SW-80-8.5	8/31/2022	91	nd	nd
FS-081522-SW-80-8.5 Dup	8/31/2022	70	nd	nd
FS-081522-ASP-01	8/31/2022	91	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Jenny Anderson

Libby Environmental, Inc.

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

FOUR STAR FUEL RELEASE PROJECT

Fulcrum Environmental Consulting

Libby Project # L22H083

Date Received 8/30/22 11:20

Received By RJK

Sample Receipt Checklist

Chain of Custody

- | | | | |
|--------------------------------------|---|------------------------------------|---|
| 1. Is the Chain of Custody complete? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 2. How was the sample delivered? | <input type="checkbox"/> Hand Delivered | <input type="checkbox"/> Picked Up | <input checked="" type="checkbox"/> Shipped |

Log In

- | | | | |
|---|---|--|------------------------------|
| 3. Cooler or Shipping Container is present. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 4. Cooler or Shipping Container is in good condition. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 5. Cooler or Shipping Container has Custody Seals present. | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A |
| 6. Was an attempt made to cool the samples? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 7. Temperature of cooler (0°C to 8°C recommended) | <u>6.9 °C</u> | | |
| 8. Temperature of sample(s) (0°C to 8°C recommended) | <u>7.4 °C</u> | | |
| 9. Did all containers arrive in good condition (unbroken)? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 10. Is it clear what analyses were requested? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 11. Did container labels match Chain of Custody? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 12. Are matrices correctly identified on Chain of Custody? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 13. Are correct containers used for the analysis indicated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 14. Is there sufficient sample volume for indicated analysis? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 15. Were all containers properly preserved per each analysis? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 16. Were VOA vials collected correctly (no headspace)? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 17. Were all holding times able to be met? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |

Discrepancies/ Notes

- | | | | |
|---|------------------------------|-----------------------------|---|
| 18. Was client notified of all discrepancies? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
|---|------------------------------|-----------------------------|---|

Person Notified: _____

Date: _____

By Whom: _____

Via: _____

Regarding: _____

19. Comments.



APPENDIX K

Terrestrial Ecology Evaluation Documentation



Voluntary Cleanup Program

Washington State Department of Ecology Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION FORM

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

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

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

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

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

Step 1: IDENTIFY HAZARDOUS WASTE SITE

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

Facility/Site Name: Four Star Fuel Release

Facility/Site Address: 355 Northwest State Street Pullman WA 99163

Facility/Site No: 3394273

VCP Project No.: EA0368

Step 2: IDENTIFY EVALUATOR

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

Name: Erin Anderson

Title: Toxics Cleanup Program
(ERO)

Organization: Department of Ecology

Mailing address: 4601 North Monroe Street

City: Spokane

State: WA

Zip code: 99205

Phone: 509-358-6669

Fax:

E-mail: eran461@ecy.wa.gov

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?

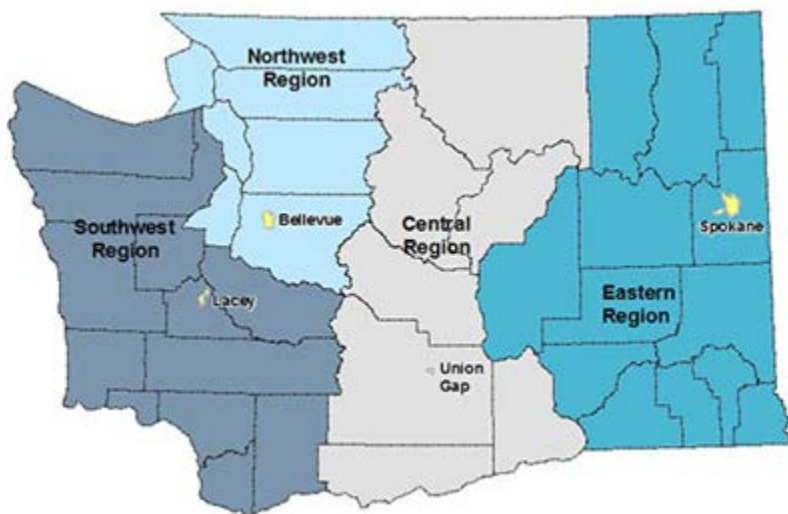
- ☐ Confirmed there was no problem.
- ☐ Confirmed there was a problem and established site-specific cleanup levels.

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.



APPENDIX L

Plateau Archaeological Monitoring Report

CULTURAL RESOURCES REPORT COVER SHEET

Author: Elizabeth G. Wilmerding, Emily Whistler, and David A. Harder

Title of Report: Archaeological Monitoring of the Four Star Diesel Cleanup Project,
Whitman County, Washington

Date of Report: October 10, 2022

County: Whitman Section: 06 Township: 14 N Range: 45 E

Quad: Pullman 1964 (1971) Acres: 0.11

PDF of report submitted (REQUIRED) ☒ Yes

Historic Property Inventory Forms to be Approved Online? ☐ Yes ☒ No

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

Satisfy a DAHP Archaeological Excavation Permit requirement? ☐ Yes # ☒ No

Were Human Remains Found? ☐ Yes DAHP Case # ☒ No

DAHP Archaeological Site #:

Archaeological Monitoring for the Four Star Diesel Cleanup Project, Whitman County, Washington

By:

Elizabeth G. Wilmerding, Emily Whistler,
and David A. Harder



October 2022

ABSTRACT

Archaeological Monitoring for the Four Star Diesel Cleanup Project, Whitman County, Washington

Able Clean-up Technologies, Inc., retained Plateau Archaeological Investigation, Inc. to monitor a fuel spill cleanup at Four Star Diesel in Pullman, Washington. The project area covers approximately 0.11 acres and lies in Section 06 of Township 14 North, Range 45 East, Willamette Meridian.

Pre-field research included the review of known archaeological resources within a 1.0-mile radius of the area of potential effect (APE) as inventoried at the Washington State Department of Archaeology and Historic Preservation (DAHP). This review was completed using DAHP's secure electronic database known as the Washington Information System for Architectural and Archaeological Data (WISAARD). This database includes recorded archaeological resources, historic property inventories (HPIs), National Register of Historic Properties (NRHP) and Washington Heritage Register (WHR) properties, identified cemeteries, and previously conducted cultural resource surveys found throughout the state. The DAHP's predictive model places the APE in an area of "Very High Risk" for encountering cultural resources, stating that "survey is highly advised" for this location.

The fieldwork was completed in a manner consistent with RCW 27.53.030 and included inspection techniques to identify both surface and subsurface archaeological resources. As a result of the monitoring, no new historic or precontact cultural resources were identified. Plateau recommends that additional work may be undertaken without further survey or monitoring.

KEY INFORMATION**PROJECT**

Archaeological Monitoring for the Four Star Diesel Cleanup Project, Whitman County,
Washington

REPORT AUTHORS

Elizabeth G. Wilmerding, Emily Whistler, and David A. Harder

COUNTY

Whitman County

LEGAL LOCATION OF PROJECT

Section 6 of Township 14 North, Range 45 East, Willamette Meridian

USGS QUADS

Pullman, 1964 (1971) 7.5 minute, Washington

ACREAGE

0.11 acres

PROJECT DATA

No previously recorded historic properties
No new cultural resources located and/or recorded

DAHP PROJECT NUMBER**MANAGING AGENCY**

Department of Ecology

REPORT PREPARED FOR

Able Clean-up Technologies, Inc. and Fulcrum Environmental

FIELD NOTE DISPOSITION

Archived at the office of Plateau Archaeological Investigations, LLC, Pullman.

PRINCIPAL INVESTIGATOR

David A. Harder, M.A.

CERTIFICATION OF RESULTS

I certify that this investigation was conducted and documented according to Secretary of Interior's Standards and Guidelines and that the report is complete and accurate to the best of my knowledge.

Signature

October 10, 2022

Date

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PROJECT DESCRIPTION

Able Clean-up Technologies, Inc. was retained to excavate and remove diesel-contaminated soil on behalf of Four Star located in Whitman County, Washington (Figure 1). The contamination measures roughly 67 feet (ft) (20.4 meter [m]) in length and 35 ft (10.7 m) in width and requires excavation to a maximum depth of 11 ft (3.35 m) below the surface. The project includes the hand digging of holes adjacent to the stream to reduce contamination getting into the water and excavating the hillside to remove soil tainted with fuel oil. This soil will then be replaced with fresh, uncontaminated soil from another location. Anticipated impacts include excavations, compaction of sediments, and other ground-disturbing construction activities.

The area of potential impact covers approximately 0.11 acres and lies within Section 6 of Township 14 North, Range 45 East, Willamette Meridian (Figure 2). Hereafter, the area of potential impact will be referred to as the "Project Area."

PRE-FIELD RESEARCH

Pre-field research included the review of known archaeological resources within a 1.0-mile (mi) (1.6-kilometer [km]) radius of the Project Area as inventoried at the Washington State Department of Archaeology and Historic Preservation (DAHP) in Olympia, Washington. This review was completed using DAHP's secure electronic database known as the Washington Information System for Architectural and Archaeological Data (WISAARD). This database includes recorded archaeological resources, historic property inventories (HPIs), properties and districts on the National Register of Historic Places (NRHP) and the Washington Heritage Register (WHR), identified cemeteries, and previously conducted cultural resource surveys found throughout the state.

Plateau also conducted cartographic analysis of landform, topography, proximity to water using topographic maps, and the United States Department of Agriculture (USDA) online soil survey. Secondary historic resources, on file at the DAHP and the Plateau office in Pullman, were consulted to identify other potential historic resources. In addition, available survey and overview reports and ethnographic accounts of the region were consulted. This background review allows for the identification of previously recorded historic and archaeological resources within or near the Project Area.

ENVIRONMENTAL SETTING

The Project Area is within the Columbia Basin, situated between the Rocky Mountain and Cascade Mountain ranges. The region consists of gently rolling hills amidst the Channeled Scablands, which are features that resulted from Pleistocene-era mega-floods ranging in size from small stream-like trenches to large coulees measuring miles wide and hundreds of feet deep. Elevations in this region range between 200 ft (61 m) above mean sea level (AMSL) near the Columbia River to over 4,500 ft (1,372 m) AMSL in outlying ridges and low mountains (Fenneman 1946; Hunt 1967).

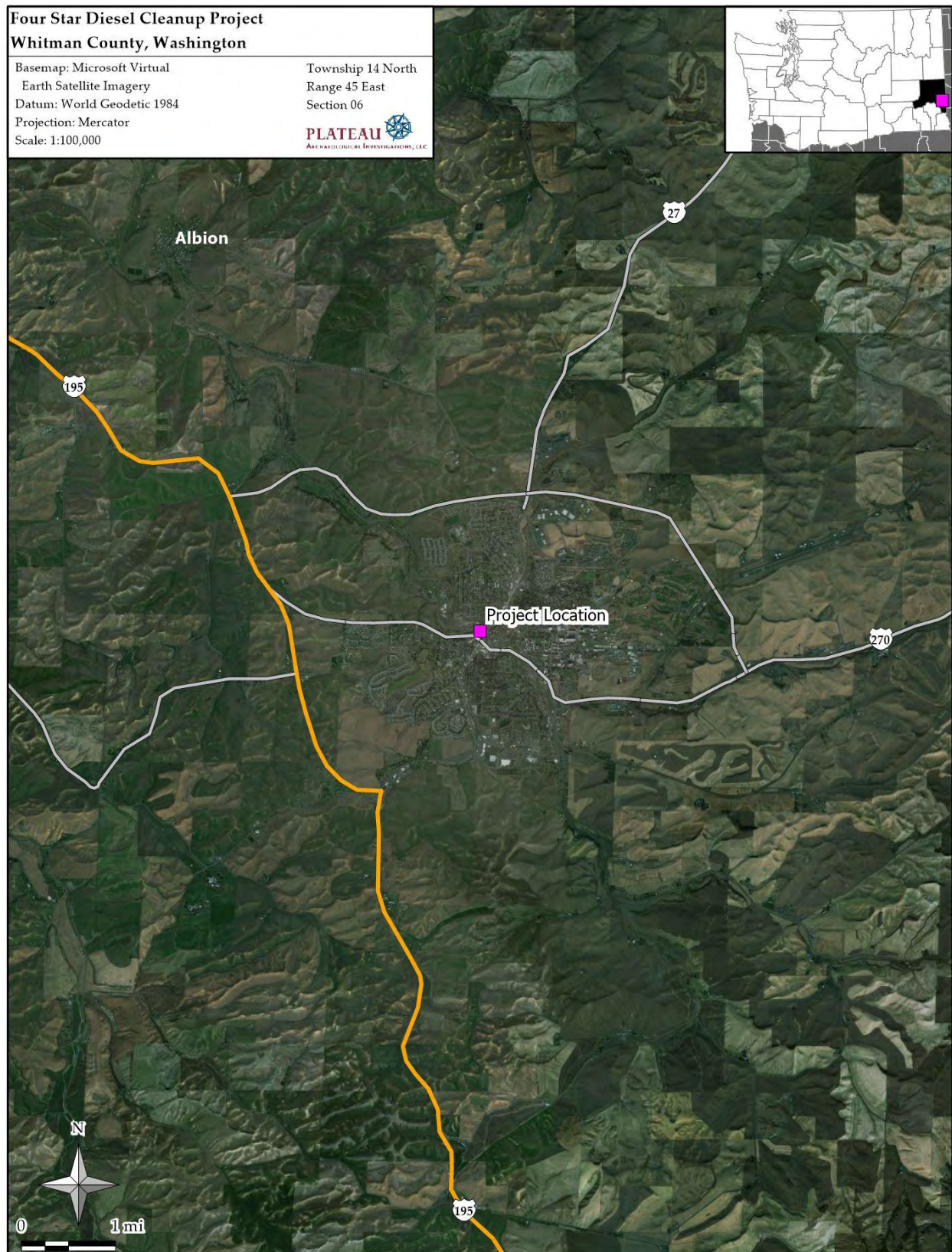


Figure 1. The Project Area within Whitman County.

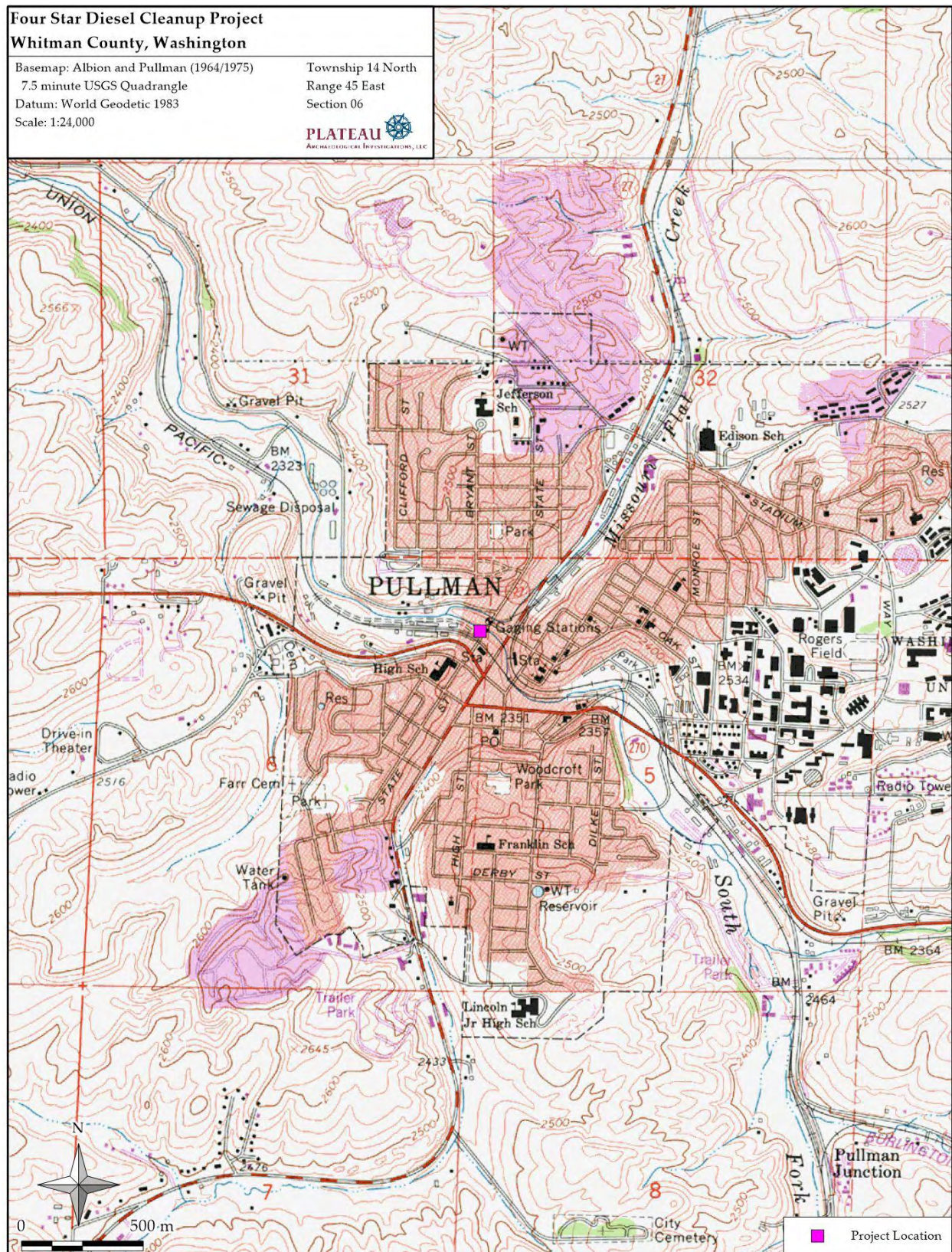


Figure 2. The Project Area on portions of the Albion and Pullman USGS topographic maps.

According to the Natural Resources Conservation Service (2022) the Project Area contains one soil type: Caldwell silt loam (Table 1).

Table 1. NRCS Soil Descriptions within Project Area.

Soil Name	Parent Material	Horizons	% P/A
Caldwell silt loam	Alluvium derived from loess	Horizon I (0–9 inches [in]): Ap, silt loam Horizon II (9–17 in): A, silt loam Horizon III (17–26 in): ABt, silt loam Horizon IV (26–39 in): Btg1, silty clay loam Horizon V (39–54 in): Btg2, silty clay loam Horizon VI (54–61 in): Cg, silty clay loam	100%

The predominant draw for Native American and Euroamerican populations in this region was, and still is, the extensive river systems. The most significant environmental feature is the Columbia River, which flows for more than 1,200 mi (2,000 km) from the base of the Canadian Rockies in southeastern British Columbia to the Pacific Ocean at Astoria, Oregon. Ten major tributaries—the Cowlitz, Deschutes, Kootenay, Lewis, Okanogan, Spokane, Snake, Wenatchee, Willamette, and Yakima—complete the drainage system. The Project Area is adjacent to the South Fork of the Palouse River which runs through Pullman along with Missouri Flat Creek, approximately 0.04 mi (0.06 km) to the northeast. The largest river system is the Snake some 11.2 mi (18 km) southwest. The Snake River converges with the Clearwater River some 22 mi (35.4 km) southeast. The Snake meets the Columbia River 96 mi (154.5 km) southwest of the Project Area.

The vegetation around the Project Area falls within the *Festuca idahoensis*-*Symphoricarpos albus* habitat type, characterized by a grassland steppe (Daubenmire 1970; Taylor 1992). Idaho fescue (*Festuca idhoensis*) and common snowberry (*Symphoricarpos albus*) are dominant in this environment. The plant community includes Kentucky bluegrass (*Poa Pratensis*), Nootka rose (*Rosa nutkana*), Woods' rose (*Rosa woodsii*), bluebunch wheatgrass (*Agropyron spicatum*), prairie Junegrass (*Koeleria cristata*), miner's lettuce (*Montia perfoliata*), and maiden blue-eyed Mary (*Collinsia parviflora*) (Daubenmire 1970). Many of these plants have been incorporated in Native American use as medicinal plants, food sources, and other employment.

The Project Area lies within a region that historically contained an abundance of life. It is likely, though, that Native Americans had access to an even larger variety of resources during the past that played a role in aboriginal use, settlement, and travel patterns in relation to the Project Area. Mammals include sagebrush voles (*Lemmyscus curtatus*), Great Basin pocket mice (*Perognathus parvus*), deer mice (*Peromyscus maniculatus*), bushy-tailed wood rat (*Neotoma cinerea*), Washington ground squirrel (*Spermophilus washingtoni*), northern pocket gopher (*Thomomys talpoides*), yellow bellied marmot (*Marmota flaviventris*), white-tailed hare (*Lepus townsendii*), Nuttall cottontail (*Sylvilagus nuttallii*), porcupine (*Erethizon dorsatum*), beaver (*Castor canadensis*), muskrat (*Ondatra*

zibethica), Bighorn sheep (*Ovis canadensis*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), badger (*Taxidea taxus*), and long-tailed weasel (*Mustela frenata*). The occasional bison (*bison bison*) is also thought to be available prehistorically (Burt and Grossenheider 1961; Ingles 1965; Schroedl 1973).

Many types of fowl were also available in the past including Swarth blue grouse (*Dendragapus obscurus pallidus*), Columbian ruffed grouse (*Bonasa umbellus affinis*), Columbian sharp-tailed grouse (*Pedioecetes phasianellus*), western sage grouse (*Centrocercus urophasianus phaios*), mallard duck (*Anas platyrhynchos platyrhynchos*), western harlequin duck (*Histrionicus histrionicus pacificus*), American common merganser (*Mergus merganser americanus*), the lesser snow goose (*Chen hyperborea hyperborea*), and the Great Basin Canada goose (*Branta canadensis moffitti*). Seasonally available birds such as Gadwall (*Anas strepera*), wood duck (*Aix sponsa*), redhead (*Aythya americana*), and the northern ruddy duck (*Oxjura jamaicensis rubida*) resided in the region in the summer. Winter game birds of the region included canvasback (*Aythya valisineria*) and American greater scaup (*Aythya marila nearctica*) (Lothson 1977).

The climate in the Columbia Basin was cool and moist at the end of the last glacial period. Gradually, climatic conditions became markedly warmer and dryer by approximately 9,000 years before present (B.P.). The warm dry climatic trend reached its maximum around 6,500 B.P. and then conditions reverted to a cooler and moister regime (Fryxell and Daugherty 1962). Comparatively, the present climate is arid with mild moist winters and hot dry summers (Meinig 1968). The mean seasonal temperatures recorded at the Pullman 2 NW weather station (#456789) between 1940 and 2006 are 31° Fahrenheit (F) in winter and 63° F in the summer. Extreme temperatures of -32° F and 110° F have been recorded at the same station. Yearly precipitation averages 21.26 inches (Western Regional Climate Center 2022).

REGIONAL PRECONTACT BACKGROUND

The Project Area is included in the Plateau culture area, which corresponds roughly to the geographic region drained by the Fraser, Columbia, and Snake Rivers. The Plateau culture area is bordered on the west by the Cascade Mountains and on the east by the Rocky Mountains. The northern border of the culture area is in Canada where it gives way to Arctic culture patterns. The southern border of the Plateau culture area mixes gradually with the Great Basin culture area (Walker 1998:1-3).

A cultural chronology provides a time line describing the adaptation, material culture, subsistence, and sometimes settlement patterns of the people who inhabit a specific area. A culture chronology for the Eastern Plateau was compiled by Roll and Hackenberger (1998), which covers the 9,000 years of human occupation within the area created by the drainage systems of the Kootenai, Pend Oreille, Spokane, Clearwater, and Salmon Rivers. While variation is exhibited between the drainages (specifically the Salmon and Clearwater which support anadromous fish populations, and the Kootenai, Pend Oreille, and Spokane [above Spokane Falls] which do not contain anadromous fish species) three overarching phases were defined for the Eastern Plateau as a whole: the Early Prehistoric (6,000 to 3,000 B.P.), the Middle Prehistoric (3,000 to 1,500 B.P.),

and the Late Prehistoric (1,500 to 200 B.P.). The culture chronology of the Eastern Plateau has been discussed at length in Roll and Hackenberger (1998), and, if pertinent, will be discussed further within the results of this report.

Ethnography

Ethnographic sources that depict the geographic distribution of Native American traditional territories provide a general guide for identifying the range of occupation for Indigenous groups in the precontact and historic eras. However, these boundaries are oversimplified and should not be viewed as rigid considering that they are arbitrarily defined, with sharp lines that neither depict joint or disputed occupations nor historical changes in range distributions prior to and after the early- to mid-19th century (Walker, ed. 1998:viii). While these ethnographic sources provide a baseline for recognizing the ancestral homes of the groups that originally occupied the Project Area, it is important to recognize the variability in the geographic distribution of groups on the Plateau and the broader relationships between people and place that make these boundaries permeable (see Thom 2009:179). According to the DAHP, the Project Area is in an "area of interest" for the Confederated Tribes of the Colville Reservation, the Nez Perce Tribe, the Spokane Tribe of Indians, and the Confederated Tribes and Bands of the Yakama Nation (DAHP 2022).

Palus The Project Area falls within lands traditionally occupied by the Palus (Sprague 1998:352). The Palus were composed of three autonomous bands along the Lower Snake River from Alpowa to the confluence of the Snake and Columbia Rivers, each band speaking distinct dialects (Upper, Middle, and Lower) within the Sahaptian language family (Ruby et al. 2010:231). The traditional territory of the collective Palus extended from near the confluence of the Snake and Clearwater rivers to the east, beyond the confluence of the Snake and Columbia rivers to the west. The territory extended north to Rock Lake, and to the southern portions of the Tucannon River and Alpowa Creek (Sprague 1998:352). However, the Palus ranged beyond this traditional territory and throughout the Plateau and into the Plains for a variety of subsistence practices such as berry picking, root digging, fishing, and hunting (Sprague 1998:352).

The introduction of the horse during the 1730s had a notable impact on the economic, political, and social lives of Plateau Native Americans (Nelson 1973). The Palus were particularly well known for their horsemanship and horse breeding, and it is thought that Appaloosa horses may take their names from the Palus (Ruby et al. 2010:232). Extensive use of horses effectively extended the range of individual Plateau groups well outside of their traditional territories, with groups such as the closely related Nez Perce ranging as far east as Yellowstone. While a distinct culture group, the Palus had close ties through neighboring traditional territories, trade, recurring social interaction, kinship, and similar lifeways to neighboring groups such as the Cayuse, Coeur d'Alene, Nez Perce, Spokane, Walla Walla, and Wanapam.

Winter villages were comprised of residential structures that were typically semi-subterranean, circular mat lodges with a ladder exit and smoke hole at the apex of the conical roof. After the introduction of the horse, winter villages were typically comprised of several large mat houses,

which accommodated extended families. Lewis and Clark noted in October of 1805 that the Palus were living in wooden houses, unlike mat tipis that they had observed elsewhere in the area (Ruby et al. 2010: 232). Ray (1960), like Lewis and Clark, noted plank houses such as those found west of the Dalles as a common structure among the Palus (as well as mat lodges and pit houses); however, Sprague (1998:354) suggests that Ray's observation may be based largely on Lewis and Clark's notes, and that the plank houses may have been mistakenly recorded, as the Palus often stored planks for fishing platforms along the sides of mat lodges for off season preservation.

Residence patterns and subsistence procurement followed seasonal changes and the accompanying annual round. River valleys were occupied during the fall salmon runs in September and October, and winter villages were usually settled by November. During the coldest months of the year, they relied upon stored foods from their previous annual round and any game that could be taken. In early spring, winter supplies began to dwindle, and people began making forays to gather emergent root crops (Nelson 1973). Snowmelt in February or March saw the "first foods feast," held in a community longhouse, which marked the first stalks of the earliest harvestable wild plant, celery (*Lomatium grayi*), as villagers eagerly awaited the opportunity to begin salmon fishing (Schuster 1998:331).

Mid-spring salmon fishing marked the departure of permanent and semi-permanent winter villages for fisheries along major rivers and tributaries. Late spring and summer camps were situated in the uplands where hunting, berry picking, and root digging occurred. Deer were particularly important game, as they provided venison and supplies for much material culture. Individuals or small groups often went to specific areas to hunt a variety of game, to quarry toolstone, to collect camas and berries, or to gather other resources such as tules to make mats (Aikens 1993:90).

After another salmon run and multiple camp movements based on specific resources throughout the summer, people would return to the river valleys for massive gatherings, which involved many thousands of people, trading resources from various parts of the Plateau or surrounding culture areas, horse races, marriages and family visits, dispute settlements, oral narratives, and every other complexity of life in the Plateau (Ray 1936, 1939). Such gatherings in late-May/early-June and August served as the social, economic, and political highlights of the year. Following the summer, families and village communities would make their ways back to the river valleys in time for fall salmon runs and elk hunting, before settling into their winter village sites by October or November when the heavy frost arrived.

Several Euroamerican accounts throughout the nineteenth century note Palus subsistence practices ranging from hunting and fishing to horticultural and pastoral endeavors. In October of 1805, Lewis and Clark noted duck, goose, and antelope hunting, as well as a "great fishery" with long-term storage at the mouth of the Palouse River ("Drouillards River") at the site of the principal Palus village (Plamondon 2001, Map 325; Sprague 1998:353). Over the next century, explorers, missionaries, and Indian agents documented increasing intensive horticultural and pastoral activities in addition to fisheries and hunting, including raising and trading of crops

including potatoes (ca. 1838); corn, wheat, and potatoes (ca. 1855); and wheat, oats, and barley cultivated with agricultural technologies such as wagons, harnesses, and plows (ca. 1880) (Sprague 1998:353-354). By 1896, the Palus at the mouth of the Palouse River on the Snake River were cultivating approximately 10 acres and were struggling to harvest adequate stocks of salmon due to fisheries on the Columbia River (Sprague 1998:354).

The ethnographic background of the Palus and the Plateau region in general has been discussed at length by Anastasio (1972), Boas and Teit (1996), Ray (1936, 1939, 1942, 1960), Smith (1988), and Spier (1936), and, if pertinent, will be discussed further within the results of this report.

While ethnographies such as those referenced above provide a useful means of understanding the traditional lifeways of Indigenous peoples, it is important to remember that Indigenous groups were, and continue to be, markedly complex, dynamic, and diverse. Uncritical applications of the ethnographic record to representations of past lifeways have the potential to produce reductionist views of tribes and bands that portray them as homogenous or static. The above depiction of the Palus serves as a generalized portrayal of the traditional lives of the people and should be viewed in light of these complexities.

Places of Cultural Significance

Traditional Cultural Places (TCPs) are important for the “role the property plays in a community’s historically rooted beliefs, customs and practices” as stated in the *National Register Bulletin 38* (U.S. Department of the Interior 1990). Although these places can be difficult to identify and evaluate from an etic perspective, an initial search of pertinent publications can be helpful toward identifying the types of places that may be expected. The *National Register Bulletin 38* goes on to state that “examples of properties possessing such significance include:

- a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- a rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents;
- an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
- a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.”

A review of ethnographies was undertaken to help identify any known Traditional Cultural Properties. The works of Angelo Anastasio (1972), Verne Ray (1933, 1936, 1939, 1942), Alan Smith (1988), Leslie Spier (1938), Roderick Sprague (1998), and Robert Suphan (1974) were consulted.

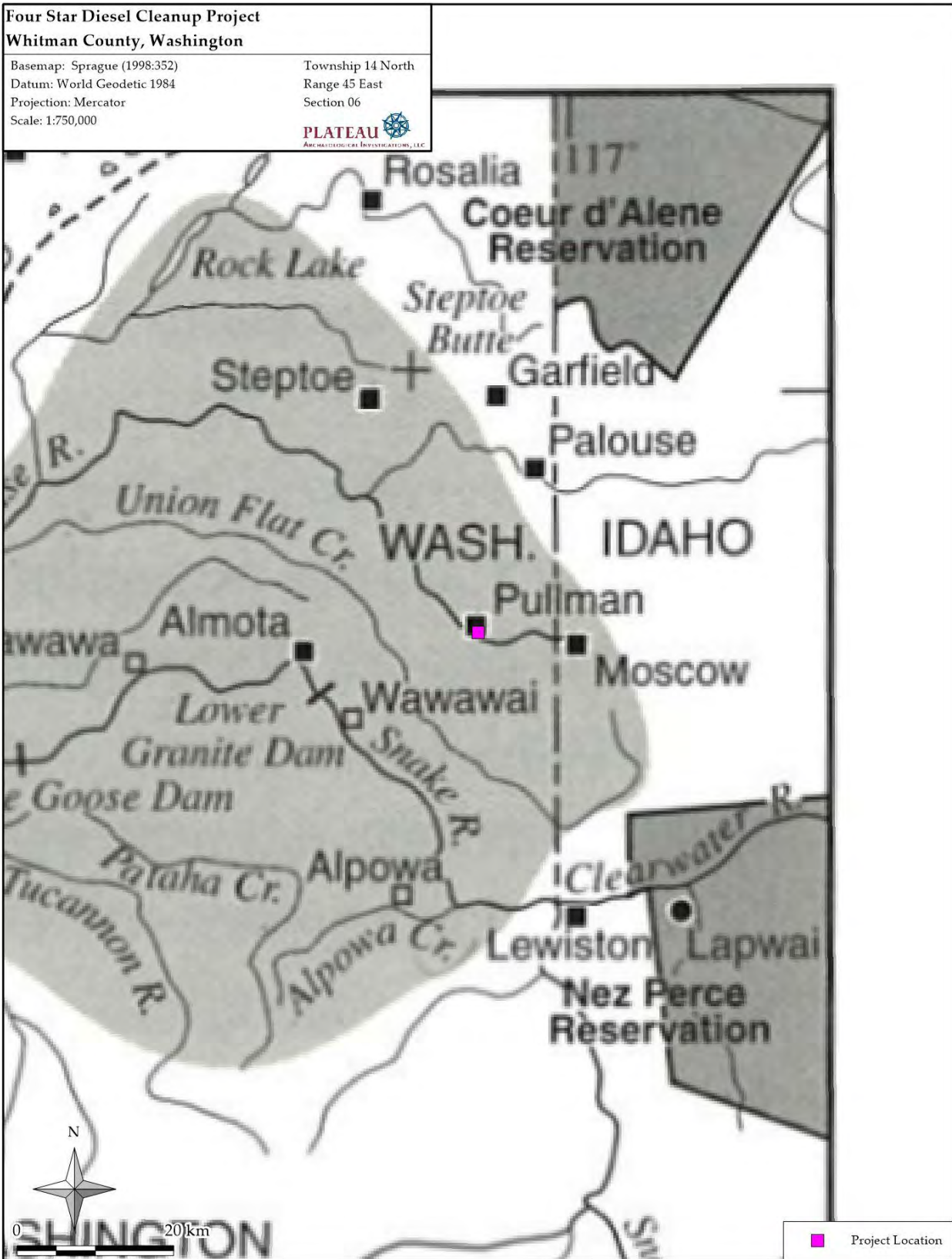


Figure 3. The Project Area shown in relation to known TCPs by Sprague (1988).

Sprague (1998) describes the traditional territory of the Palouse in which the Project Area is located (Figure 3).

Numerous collections of published legends were consulted to identify points of legendary significance near the Project Area. These include publications by Franz Boas (1917), Ella Clark (1969), Richard Erdoes and Alfonso Ortiz (1984), Verne Ray (1933), and M. Terry Thompson and Steven Egesdal (2008). No legends directly reference the Project Area.

Some TCPs, features, or resource collection areas with specific, attributed cultural significance are likely still known to some Native American informants, and reasonably considered sacred and necessarily closely guarded. If additional TCP review is necessary, it is strongly suggested that the Tribe be consulted directly.

REGIONAL HISTORIC BACKGROUND

Contact with peoples on the west coast of the continent was well established by the end of the eighteenth century by British, Spanish, and Russian trading vessels that made regular visits to the coastline. These trading expeditions began the first contact between aboriginal groups and outside cultures. Written historic accounts of the area, though, really begin when Lewis and Clark journeyed through the region in 1805.

In 1809, Oregon Territory saw an influx of trappers and fur traders, beginning with the Canadian-owned North West Company as they made their way into the region and built Spokane House in 1810, located near the confluence of the Spokane River and Hangman Creek. Spokane House became the first permanent European settlement in the State of Washington (McCart and McCart 2000:213). For a time, Spokane House thrived as both a trading center and a gathering place for fur traders. Despite its successes, Spokane House was abandoned in 1816. By that time, trading routes had shifted largely to the Columbia River, leaving the Spokane House no longer logistically or economically important (Meinig 1968). In 1825, the Hudson's Bay Company closed Spokane House and moved its local operations north to Fort Colville at Kettle Falls.

Subsequent to the opening of the Oregon Trail in 1840, Euroamerican settlers flooded the area, bringing trade, religion and disease into Native-occupied areas. In 1846, the United States took control of the Oregon territory in the Oregon Treaty. With increasing population and economic and political pressures of immigrants and the Whitman massacre, the Territory of Oregon (Oregon Territory) was officially established in 1848. By 1850, nearly 12,000 immigrants had passed through the Plateau region along the Oregon Trail (Beckham 1998; Walker and Sprague 1998). With the establishment of the Oregon Territory in 1848 and Washington Territory in 1853, federal involvement proliferated. Treaties between Native tribes and the new state and federal governments were soon underway.

Washington Governor Isaac Stevens, also appointed as Superintendent of Indian Affairs by President Pierce, worked jointly with Joel Palmer, Superintendent of Indian Affairs in Oregon, to

negotiate a series of treaties between 1854 and 1855. These treaties were difficult to maintain in light of the Chinook jargon used in negotiations, rapid influx of miners following the several “rushes,” and settlers who were eager for property. Almost immediately after signing the Walla Walla Council Treaty of 1855, gold was discovered on several promised reservations in the Plateau, and miners began to confiscate the mineral-rich lands. The introduction of disease, treaty violations, and other stresses introduced by the new settlers caused mistrust and eventually, warfare. Several battles took place in the area between 1855 and 1858 during the Plateau Indian War.

Of these was the Battle of Pine Creek, also known as the Battle of Tohotonimme, near modern day Steptoe Butte. In 1858, Colonel Edward J. Steptoe and 160 troops marched towards Fort Colville after learning of clashes between Native Americans and Euroamerican settlers. Steptoe and his troops invaded Coeur d’Alene and Spokane territory, resulting in a battle at Tehotomimme (Steptoe Butte) on May 17th. The troops were defeated and Steptoe retreated the following day. As a result of this loss, Colonel George Wright marched troops from Fort Dalles to the area and defeated the tribes, burned grain fields, destroyed stored foods, and butchered over 900 head of horses. These actions ended conflict between Native American groups and Euroamerican settlers in the region. (Beckham 1998: 154).

Major smallpox epidemics in 1846 and between 1852-1853 severely impacted the Spokane population. In 1881, 154,602 acres of land were established as the Spokane Reservation with an additional 2,000 acres restored to tribal ownership in 1958 (Lahren 1998: 494). A decrease in land meant a decrease in food resources. The installation of dams beginning in 1911 at Little Falls prevented salmon, a major food source, from coming upstream. Non-Native American settlement, disease, and other factors, have taken a toll on the Spokane population, and it was not until the mid-1920s that the population began to see a growth.

Whitman County

Named for missionaries Marcus and Narcissa Whitman, Whitman County was formed in November of 1871 (partitioned from Stevens County to the north). Whitman County is bordered by Spokane County to the north, Adams County to the west, the Snake River to the south, and Idaho to the east. Whitman County’s economy is based on agriculture, as it has been from the earliest time of settlement. The region of the Palouse, consisting of Whitman and surrounding counties, is considered to be one of the richest agricultural regions in the state of Washington, with an emphasis on wheat. Today Whitman County ranks amongst the top in wheat production within the nation.

Initially settlement was slow, particularly in the northwest reaches of the county. Most of the population centered in the towns of Pullman and Colfax, with lesser-populated settlements springing up throughout the county after 1876. As in most cases throughout the West, stock raising and small-scale dry land farming was practiced where large tracts of land could be acquired. Though irrigation would come later, dry land wheat farming was prominent in the western portion of the county in particular (Lever 1901:185-190). After 1880, crops such as barley,

oats, rye, and flax were being grown, while seed peas came into production sometime after 1910. Fruit, including apples, peaches, and plums, could be found along the Snake River drainages and bottomlands, as well as in other parts of the county where irrigation was available.

A branch of the Northern Pacific Railroad (NPRR) was the first railroad to be built in the county in 1883. It was constructed by the Oregon Transcontinental Railway Company, and was known at the time as the Columbia and Palouse Railway (Lewty 1995:27). Later in 1886, a branch of the NPRR—originally named Eastern Washington Railway, and renamed Spokane and Palouse in the winter of 1886—reached Rosalia, vastly increasing the town's population from a few dozen to over 200. The line originated in Spokane, traveled southwest to the town of Marshall, then south to Rosalia, before continuing on to Oakesdale to the east (Lever 1901:111, 221).

Originally incorporated in 1904 under the name Spokane Interurban System, and changed to the Spokane & Inland Empire Railway in 1906, the electrified railway system had lines to Coeur d'Alene, Idaho, and two lines into the Palouse of Whitman County. A single line ran south out of Spokane, then split at Spring Valley; from there, two lines (the Colfax and Moscow spurs) continued south and southeast respectively through the county (Fahey 1994:54-73).

The railway transported both passenger and freight to and from Spokane into the Palouse and became a boon to farm communities along the line. The railway company also supplied electrical power to numerous towns that it served. As Spokane historian John Fahey (1994:67) describes:

The railroad sped country customers to the city in gay spirits on shopping tours, where they thronged stores, restaurants, and theaters. A salesman who once visited two towns in a day now might canvass four or five. City wholesalers delivered orders in one day...The farmer's wife shopped in Spokane and reached home in time to ready supper, bubbling with her urban adventures...For farm families, the railroad erected sheds at trackside where the men tethered horses while they were in Spokane, installed water in pens for animals awaiting shipment, and like other railroads ran instructional trains with lecturers from the colleges.

Cartographic Analysis of the Project Area

The Project Area is located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 6 of Township 14 North, Range 45 East. The 1876 cadastral map (McMicken 1876) shows the Project Area within Lot 1 of the section, at the confluence of Missouri Flat Creek and the South Fork of the Palouse River. There is no built environment in the Project Area. However, there are a couple of roads and a trail nearby (Figure 4A).

In 1881, Bowlin Farr purchased a Sale-Cash Entry patent for 189.51 acres in the S $\frac{1}{2}$ NE $\frac{1}{4}$, Lot 1, and Lot 2 of Section 6 (Bureau of Land Management 2022).

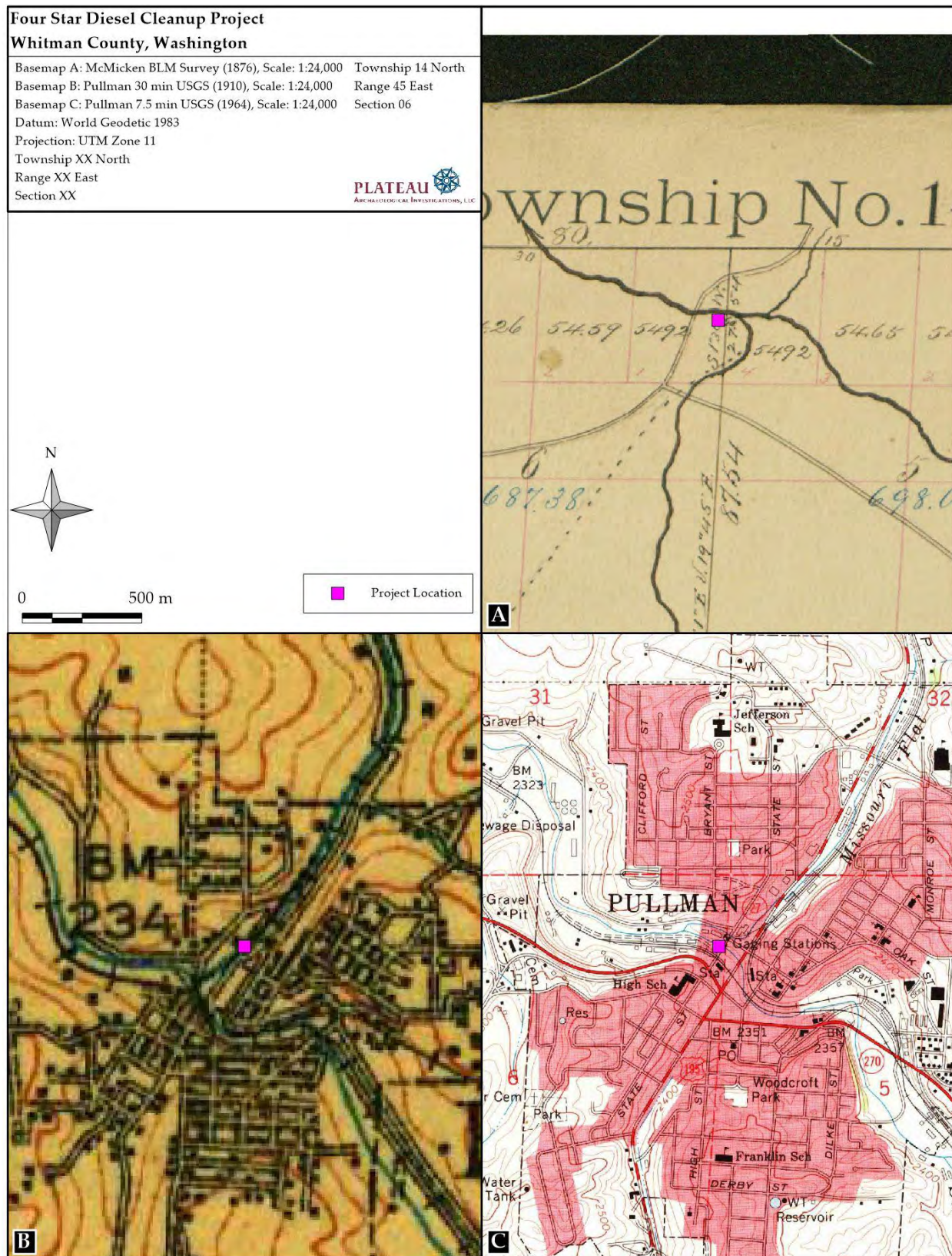


Figure 4. The Project Area shown on historic maps.

The 1910 Pullman USGS topographic map shows the City of Pullman well developed to the east and south of the Project Area. There is a building adjacent to the Project Area on the west side, and the railroad tracks pass by to the southwest.

The 1964 Pullman USGS topographic map shows the City of Pullman has grown significantly since 1910. The buildings associated with Four Star Cenex exist north of the Project Area along with two gaging stations. A path originates on the west side of the Project Area and parallels the South Fork of the Palouse River past buildings associated with the railroad tracks.

PREVIOUS ARCHAEOLOGY

A review of previously recorded cultural resources and archaeological surveys was completed through the WISAARD on July 18, 2022. The review covered areas within Section 01 of Township 14 North, Range 44 East; Sections 05, 07, and 08 of Township 14, Range 45 East; Section 36 of Township 15 North Range 44 East; and Sections 31 and 32 of Township 15 North Range 45 East.

There have been 17 previously conducted cultural resource surveys within 1.0 mi (1.6 km) of the Project Area (Table 2). None of these surveys intersect with the Project Area. Five of these surveys yielded newly recorded cultural resources (Doyon and Burk-Hise 2014; Ferguson et al. 2013; Buehner 2013a, 2013b; Meyer and Ellis 2018).

Table 2. Previously Conducted Cultural Resource Surveys within 1.0 mi of the Project Area.

Author	Project	Distance from P/A	Results
Buehner (2013a)	State Street Silo SP04UB117	0–0.25 mi NE	2 historic buildings potentially eligible
Buehner (2013b)	Charlie Brown SP04UB127	0.5–0.75 mi S	1 historic building eligible, 5 potentially eligible for NRHP
Doyon and Burk-Hise (2014)	Reconnaissance Survey for Downtown Pullman	0–0.25 mi SW	5 historic buildings eligible for NRHP
Erdey et al. (2010)	Pioneer Centry historic Property Survey	0.25–0.5 mi S	Negative
Ferguson and Root (2012)	Monitoring of the Waste Water Treatment Plant Improvement	0.5–0.75 mi NW	Negative
Ferguson and Root (2016)	Ulibarri Livestock Water Development	0.5–0.75 mi W	Negative
Ferguson et al. (2013)	Historic Building Inventory of the Maple Street-Maiden Lane Neighborhood	0–0.25 mi E	4 historic buildings eligible for NRHP
McReynolds (2015)	Proposed Telecommunications Roof-Top Collocation site	0.5–0.75 mi E	Negative
Meyer and Ellis (2018)	Claude Ragle Natural Resource Investment	0.5–0.75 mi W	2 historic buildings eligible for NRHP
Nakonechny (2020)	Palouse Conservation District Cornelius Riparian Buffer	0.75–1.0 mi S	Negative

Table 2. Previously Conducted Cultural Resource Surveys within 1.0 mi (continued)

Author	Project	Distance from P/A	Results
Rooke (2002)	Cingular Wireless Project Site WA-839	0.5–0.75 mi W	Negative
Root and Ferguson (2009)	Equipment Rental Department Expansion	0.25–0.5 mi NW	Negative
Root and Ferguson (2010)	Addendum to the North Grand Avenue Improvement	0–0.25 mi NE	Negative
Root and Ferguson (2012)	Monitoring of the Equipment Rental Department Expansion	0.25–0.5 mi NW	Negative
Root et al. (2008)	North Grand Avenue Improvements	0–0.25 mi NE	Negative
Root et al. (2009)	Waste Water Treatment Plant Improvements	0.5–0.75 mi NW	Negative
Root et al. (2020)	City of Pullman Stormwater Decant Facility	0.25–0.5 mi NW	Negative

The review revealed three cultural resources within 1.0 mi (1.6 km) of the Project Area (Table 3). A historic refuse dump containing broken pottery, glass, and metal fragments among other things, 45WT132, is located northwest of the Project Area and was considered eligible for the NRHP (Erickson and McLeod 1979). There are two cemeteries within a mile of the Project Area whose eligibility is undetermined. One is attributed to the International Order of Odd Fellows (IOOF) (DAHP 2017), and the other, the Farr cemetery, is named for an early inhabitant of Pullman (DAHP 2011).

Table 3. Previously Recorded Cultural Resources within 1.0 mi of the Project Area.

Site Number	Site Type	Recorder(s)	Distance from P/A	Eligibility
45WT132	Historic Refuse Dump	Erickson and McLeod (1979)	0.50–0.75 mi NW	Eligible
45WT363	Farr Cemetery	DAHP (2011)	0.5–0.75 mi SW	Undetermined
45WT365	IOOF Cemetery	DAHP (2017)	0.25–0.5 mi W	Undetermined

A total of 26 HPIs have been inventoried or derived from the Whitman County Assessor's records within 1.0 mi (1.6 km) of the Project Area (Table 4). None of these properties intersect with the Project Area, although two of them are close by (Franklin and Root 2017; Reed 1986).

Table 4. NRHP Eligible Historic Properties Inventoried within 1.0 mi of the Project Area.

Property	Resource Name	Recorder(s)	Distance from P/A	Eligibility
14590	Smith Gymnasium, WSU	Petersen and Reed (1986)	0.75–1.0 mi E	Eligible
14643	Union Pacific Pullman Passenger Depot	Reed (1986), WSU (1975)	0–0.25 mi SE	Eligible
14754	505 NW State Street, Residence	Reed and Petersen (1986)	0–0.25 mi E	Eligible
103027	Franklin School/ Pullman Pioneer Center	McCoy and Erdey (2010)	0.5–0.75 mi S	Eligible
115307	Troy Hall, WSU	Ryder (2014)	0.75–1.0 mi SE	Eligible
115325	Dana Hall, WSU	Gant (2018a)	0.5–0.75 mi SE	Eligible
115326	Holland Library, WSU	Gant (2018b)	0.75–1.0 mi E	Eligible
671336	840 Spring Street, Residence	Buehner (2013c)	0.50–0.75 mi S	Eligible
678283	590 SE Benewah, Residence	Morris (2105)	0.75–1.0 mi SE	Eligible
710380	Pullman Well House No. 1	Franklin and Root (2017)	0–0.25 mi E	Eligible
716909	Ragle House	Meyer (2018c)	0.75–1.0 mi SW	Eligible
716910	Ragle Barn	Meyer (2018b)	0.75–1.0 mi SW	Eligible
716911	Ragle Machine Shed	Meyer (2018a)	0.75–1.0 mi SW	Eligible
724672	225 SW McKenzie Street, Residence	Schultz (2021)	0.25–0.5 mi SW	Eligible
725720	WSU Steam Plant Building	Borth (2021)	0.5–0.75 mi SE	Eligible
45DT210	College Hill Historic District	McCoy et al. (2006)	0.25–0.50 mi NE	NRHP, WHR
45WT137	Stevens Hall, WSU	Morgan (1978)	0.5–0.75 mi E	NRHP, WHR
45WT138	Albert W. Thompson Hall, WSU	Stratton (1972)	0.5–0.75 mi E	NRHP, WHR
45WT264	Gladish Building	Hines (1997)	0–0.25 mi SW	NRHP, WHR
45WT268	Greystone Church/ United Presbyterian	Benedict (1989)	0–0.25 mi SE	Eligible
45WT270	William Swain House	Rognas et al. (1993)	0–0.25 mi S	NRHP, WHR
45WT279	U. S. Post Office	Yeomans (2003b)	0–0.25 mi S	NRHP, WHR
45WT281	Cordova Theater	Yeomans (2003a)	0–0.25 mi S	NRHP, WHR
45WT390	Hutchinson Studio/ Swilly's Restaurant	Kolva (2009)	0–0.25 mi SE	NRHP, WHR
45WT455	Star Route and Palouse Street Brick Road	Franklin and Munch-Rotolo (2013)	0–0.25 mi SE	NRHP, WHR
45WT507	Pufferbelly Depot	Entze et al. (2019)	0–0.25 mi E	NRHP, WHR

The Pullman Well House Number 1, Property 710380, is eligible under Criterion A, as it is associated with events that made a significant contribution to history. It was built between 1913 and 1929 to control and direct the water resources of the City of Pullman (Franklin and Root 2017). The Union Pacific Passenger Depot, Property 14643, is located across the street to the east from the Project Area and is currently occupied by the Umpqua Bank. Constructed in 1938, it served as a freight and passenger depot in downtown Pullman. It was a place for Washington State University students to embark or arrive, and special trains were run for students during peak travel periods (Reed 1986). It is part of the Washington State Inventory of Historic Places.

FIELD METHODS

Fieldwork was completed in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716, September 29, 1983) and under the supervision of Principal Investigator, David Harder. Over the course of eight days from May 2, 2022, to June 1, 2022, Plateau archaeologists observed the excavation of five hand-dug pits, the excavation, removal, and replacement of the soil on the hillside, and took photographs of the activities.

Fulcrum Environmental Consulting of Spokane, Washington, in conjunction with Able Cleanup Technologies Inc., of Spokane, Washington, performed all excavation for the project using a CAT 320 equipped with a five-tine bucket with a capacity of 1.19 cubic meters (m³) (1.56 yd³). Generally, the crew was busy on site from 8:00 A.M. to 5:00 P.M., and all ground-disturbing activities were monitored by a Plateau archaeologist during that time. During mechanical excavations, the archaeologist was located in a safe position that allowed for the best possible view of the excavated area. Further, the monitoring archaeologist was outfitted with a high-visibility safety vest, a hard hat, eye protection, and gloves. The archaeologist wore a PFD (personal flotation device) when monitoring near the edge of the stream.

Archaeologists did not screen any spoils due to contamination from fuel oil. Instead, they conducted a visual inspection of the soil as it was removed and took photographs of the profiles in the pit walls.

All location data (control points, daily start and end points, cultural materials) were recorded with a handheld GPS unit, and the archaeologists took representative photographs of the Project Area, excavation trench, excavation equipment, and cultural materials. Monitoring log forms were filled out on a daily basis, and included such information as weather, time on site, construction equipment used, trench size, sediment characteristic, observed cultural materials, GPS points and photographs taken.

PROJECT RESULTS

Plateau archaeologists Elizabeth Wilmerding, Emily Whistler, Sophia Bush, Valda Black, and David Harder monitored excavations from May 2, 2022, to June 1, 2022. The Project Area overlooks the South Fork of the Palouse River (Figure 5). Soils observed throughout the Project Area were a silt loam with angular rocks from gravel to boulder size. The presence of the rocks doesn't match the NRCS expectations. The hill had been disturbed and stabilized at an earlier time with the admixture of angular basalt cobbles, and a layer of angular basalt cobbles and small boulders was added at the surface. The soil within the diesel fuel affected area tended to be dark, wet, and noxious smelling. Individual stratigraphic layers were not visible in most cases. The south edge of the Project area had a remnant of a sand layer in the upper part of the profile. This may have been a lens of sediment placed during an earlier period of disturbance as it was very close to the existing State Street pedestrian and automobile bridge crossing the stream.

May 2, 2022: Emily Whistler monitored the excavation of three holes using hand tools (Figure 6). They were dug to mitigate the seepage of fuel oil from the slope to the stream edge. Each hole was 15.75 in x 15.75 in x 39.4 in (40 cm x 40 cm x 100 cm). Oil-absorbing pads were placed in each hole. Affected soil was put on a tarp for off-site removal.

May 3, 2022: Elizabeth Wilmerding monitored the excavation of a fourth hole using hand tools. This hole was dug for the same reason as the ones on May 2. The hole was approximately 15.8 in x 9.8 in x 39.4 in (40 cm x 25 cm x 100 cm) deep before ground water appeared. Oil-absorbing pads were placed in the hole. The soil removed was silty and rocky.

May 10, 2022: Wilmerding monitored the excavation of a fifth hole using hand tools. This hole was dug for the same reason as the ones on May 2. The hole was approximately 15.8 in x 9.8 in x 39.4 in (40 cm x 25 cm x 100 cm) deep. Three inches (8 cm) of ground water was at the bottom. Oil-absorbing pads were placed in the hole. The soil removed was silty and rocky. The remnant of an old, twisted metal cable was at the bottom of the hole. It may have been associated with the cable and harness system that carried a fuel line across the stream.

May 24, 2022: Sophia Bush monitored the beginning of the excavation of the north side of the hillside to remove the soil contaminated by diesel fuel. The pit was approximately 20 ft (6.1 m) wide and dug to the water table, approximately 12 ft (3.7) deep from the surface. The soil consisted of dark brown, clayey sediment with up to 50% angular basalt rocks from gravel to cobble sized (Figure 7).

May 25, 2022: David Harder monitored the excavation of the hillside. An old, rusted water/fuel separator was discovered and removed (Figure 8). Seventeen truckloads of contaminated soil were removed. Each truck and pup contained approximately 22 yd³ (16.8 m³) for a total of 374 yd³ (286 m³) removed. Fresh soil was brought in from Genesee, Idaho, to replace the contaminated soil.



Figure 5. The Project Area on an aerial photograph.



Figure 6. Overview of the Project Area. View to the northwest.



Figure 7. Overview of the initial hand dug wells. View to the northeast.

May 26, 2022: Valda Black monitored the excavation of the hillside. The weather was sunny and humid with temperatures in the low 70s. The soil removed from the concrete platform at the surface of the ground to a depth of 6 ft (1.8 m) contained large, angular rocks, fragments of metal and wood, and evidence of the diesel fuel spill.

May 31, 2022: Wilmerding monitored the excavation of the south portion of the hillside. The excavation was approximately 11 ft (3.35 m) deep and 10 ft (3 m) wide. Contaminated soil was piled up to the west side of the Project Area near the driveway. In general, the soil was very dark brown in the first 3-4 ft (0.9–1.2 m), followed by a greenish tinged soil layer. This green tinge was described by the environmental consultant as caused by decomposing fuel in an anaerobic environment. Below this was an unspoiled layer of yellowish-brown soil. Fresh soil replaced the contaminated soil (Figure 10). A lens of light brown sand emerged on the south side of the excavation and may be associated with a previous episode of road building or maintenance (Figure 11).

June 1, 2022: Wilmerding monitored the excavation of the south portion of the hillside closest to the roadway. The excavation was approximately 10-12 ft (3–3.7 m) wide and dug to a depth of approximately 12 ft (3.7 m). The contaminated soil was replaced with fresh soil. An old pipe stuck out of the south wall, and it was cut away after determining that it was safe to do so.

During monitoring, archaeologists observed fragments of brick and cement, old pipes, a rusted oil-water separator, and a horseshoe. These items appeared to be associated with the storage of fuel oil over the last 70 years with a hint (horseshoe) of occupation during earlier times. None of them were temporally diagnostic.

SUMMARY AND CONCLUSIONS

Over the course of eight days from May 3, 2022, to June 1, 2022, the excavation of five hand-dug holes and the excavation, removal, and replacement of contaminated soil on the hillside above the South Fork of the Palouse River were monitored by one of five Plateau archaeologists. This monitoring covered roughly 67 ft x 35 ft (20 m x 10.7 m) of excavations, consisting of 955.37 cubic yards (730.43 cubic meters) of sediment.

Archaeological monitoring resulted in the identification of no temporally diagnostic artifacts. Plateau recommends a finding of **No historic resources were impacted** by this activity. No further monitoring will be required for the remainder of this project. If further ground-disturbing activities occur, the client must follow the procedures outlined in the UDP.



Figure 8. Overview of the contaminated slope. View to the south.



Figure 9. Overview of the oil/ water separator. View to the north.



Figure 10. Overview of the slope excavation. View to the northwest.



Figure 11. Overview of the soil profile. View to the southeast.

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APPENDIX M

Natural Resource Damage Assessment



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July 6, 2022

Resource Damage Assessment Committee
c/o Geoff Baran
Washington State Department of Ecology
Geoff.baran@ecy.wa.gov

Subject: Natural Resource Damages from Four Star Supply Spill (Pullman,
Washington), ERTS #714414

Dear Mr. Baran:

Windward Environmental LLC (Windward) submits this letter on behalf of Four Star Supply Inc. (Four Star) for consideration during the Resource Damage Assessment (RDA) Committee meeting concerning the small diesel spill lasting from April 22 to 25, 2022 (the "spill"). We appreciate that the meeting has been rescheduled from June 8, 2022, to July 13, 2022 so that Four Star could have additional time to prepare its preliminary input. Thank you for providing us with that additional time.

We understand that during the RDA Committee's hearing on July 13, the Committee will begin natural resource damage assessment (NRDA) discussions for the spill into the South Fork Palouse River (SFPR). The preliminary calculation presented in this letter is based on input from Four Star and its consultants, as well as review of relevant literature. This review is being conducted for the aquatic environment only, under the Water Pollution Control Act, RCW 90.48.142 and RCW 90.48.367 (collectively the WPA), and Washington Administrative Code (WAC) 173-183. Please let us know if additional regulations apply.

1 INCIDENT OVERVIEW

Four Star's diesel fuel storage tank located on Lot 5, Parcel 108150058050001 in Pullman, Washington (see attached figure), developed a leak of red-dye diesel No. 2 that migrated from a crack in the tank's concrete secondary containment into the adjacent SFPR. The release started at approximately 9 am on April 22, 2022, and

continued until April 25, 2022, at 6:30 am, at which time response actions were initiated. The immediate response actions included the placement of containment booms, sorbent pads, and absorbent clay. Calculations and diesel losses indicate that a total of 390 gallons was released to the SFPR. The in-water response recovered an estimated 132 gallons of the released volume (34%), 41 gallons of which were collected within the first 24 hours of the spill response. The tank was drained on April 25, 2022;¹ lines and piping were disconnected on May 10, 2022; and the tank was completely removed from May 17 to 19, 2022. Since discovery of the spill and up to the present time, Four Star has, through its consultant, Fulcrum Environmental Consulting (Fulcrum), taken effective and continuous actions to resolve the release. Those actions have included:

- ◆ Immediate mitigation of impacted soils to the extent practicable to prevent migration to the SFPR
- ◆ Placement of containment booms, sorbent pads, and clay to prevent contaminant migration
- ◆ Establishment of in-stream containment areas, where spilled fuel can be intercepted and recovered
- ◆ Conducting a Site characterization over several investigation and sampling events
- ◆ The development of a conceptual model
- ◆ Ongoing monitoring of waters in the SFPR
- ◆ Obtained appropriate permits for emergency remedial action with the United States Army Corps of Engineers (USACE), including a Hydraulic Project Approval emergency permit
- ◆ Application to Washington Department of Ecology (Ecology) for placement of the Site into the Voluntary Cleanup Program
- ◆ Development of a Preliminary Soil Remediation Work Plan and related documents for the evaluation of remedial action
- ◆ Following regulatory approvals, the construction and implementation of a bank excavation and bank containment cap
- ◆ Ongoing coordination with Ecology, the USACE, the Washington State Department of Fish and Wildlife, and all other interested agencies through regular spill response meetings.

¹ At or about the same time, Four Star's retained consultants and contractors removed five other above-ground petroleum tanks from the Site.

Four Star appreciates the involvement and input from the agencies in this regard. Some response actions remain in place as the SFPR is monitored for surface sheen. Since the implementation of the bank containment cap, we understand that no further surface sheen has been observed.²

2 WASHINGTON STATE COMPENSATION SCHEDULE

The WPA provides that the RDA Committee “shall use information obtained from reconnaissance activities as well as any other relevant resource...[to] determine whether a damage assessment investigation should be conducted, or, whether the compensation schedule authorized under RCW 90.48.366 and 90.48.367 should be used to assess damages.” See RCW 90.48.368. On behalf of Four Star, we maintain that the statutory compensation is appropriate here.

Pursuant to the WPA, the compensation schedule is set forth in WAC 173-183, which outlines regulatory requirements for spills of oil and other hazardous materials, including the compensation schedule for quantifying compensatory restoration costs (WAC 173-183-320). The compensation schedule is a streamlined cost calculation approach that is an alternative to a more detailed NRDA and applies the criteria analyzed ahead.

WAC 173-183-320 establishes a threshold between small and large spills of 1,000 gal., with minimum and maximum compensation costs for smaller spills being less than those for larger spills. The compensation depends on several factors: the type of oil spilled (WAC 173-183-340), the habitat type affected (WAC 173-183-400 to -710), and the effectiveness of the liable party’s response to the spill (WAC 173-183-870). For the current spill, WAC 173-183-600 *et seq.* apply because a freshwater stream was affected. Relevant conditions and equations for calculating freshwater damages are included in WAC 173-183-340, -610, -620, and -850, all of which are discussed in the following sections.

Given the small size of the spill, type of material spilled, and the location of the spill, it is anticipated that a compensation schedule will be applicable for this event, rather than a more detailed analysis. Therefore, this letter provides a cost estimate using the compensation schedule equations provided in WAC 173-183.

2.1 Product characteristics

Red-dye diesel No. 2 is a fuel product allowable for use in off-road vehicles and outdoor generators, often for agricultural purposes (e.g., tractors). Red dye is added to clear diesel to show that the fuel product is tax exempted; otherwise, red-dye

² We understand that the upland response, for which concrete containment and soil removal began on May 23, 2022, is ongoing (and being addressed separately), including the remediation of contaminated bank soils.

diesel No. 2 is identical to clear diesel, which is commonly used in on-road vehicles (e.g., diesel cars and trucks) and is taxed.

The compensation schedule regulation classifies oil types by three characteristics: acute toxicity, mechanical injury, and persistence. Acute toxicity is the relative severity of chemical exposures of aquatic organisms (e.g., fish, amphibians, and insects) to oil. Mechanical injury is the relative oiliness of the oil product and its potential to coat and smother wildlife. Persistence is the oil product's relative propensity to remain in the environment after being spilled, with less persistent oils (e.g., kerosene) quickly evaporating and degrading, and more persistent oils (e.g., crude oil) evaporating and degrading over years or decades. While diesel is not specifically classified by WAC 173-183-340, No. 2 fuel oil is classified, and it is chemically similar to diesel. No. 2 fuel oil has an acute toxicity value of 2.3, a mechanical injury value of 3.2, and a persistence value of 2; these values were selected when calculating NRDs (Section 3). The selected values place diesel at a moderate level between gasoline and crude oil in terms of toxicity, mechanical injury, and persistence.

2.2 Environment

The environment affected by the spill is the key component driving compensation cost. Several aspects of the environment are considered. For freshwater streams, WAC 173-183-600 to -620 are used to calculate a spill vulnerability score (SVS). The SVS is equal to the product of the freshwater vulnerability score (FVS) (Section 2.2.1) and the habitat index (HI) of a stream (Section 2.2.2). As detailed in the following subsections, these values are 5 and 1.1, respectively, and the calculated SVS equals 5.6.

2.2.1 Freshwater vulnerability score

The FVS reflects the water body's relative size and discharge, which generally correlate to importance for fish, wildlife, and human uses. However, the FVS does not account for degraded conditions of water body, nor does it necessarily account for the presence of fish, wildlife, or actual human uses. Higher-value (e.g., 5) features represent "shorelines of the state," whereas lower-value (e.g., 1) features correspond to stormwater drainages, ephemeral streams, and otherwise low-use water features.

Per WAC 173-183-610, the SFPR is a Type 1 water feature, as it falls within the definition of "all waters, within their ordinary highwater mark, as inventoried as 'shorelines of the state' under chapter 90.58 [Revised Code of Washington]." Although the SFPR is a relatively small waterbody and its annual average flows at Pullman, Washington, are low (40 cubic feet per second (USGS 2022)), its flows exceed the 20-cubic feet per second minimum to be defined as a "shoreline of the

state” (Ecology 2022). Type 1 waters have an FVS of 5, the highest rating; this value was applied when calculating compensatory costs.

2.2.2 Habitat Index

The HI is a metric that incorporates information about habitat quality and degradation into the compensation schedule cost calculation. Conditions considered in the HI include:

- ◆ Barriers to fish migration
- ◆ Urbanization of the watershed
- ◆ Riparian vegetation along the stream channel
- ◆ Flood plain erodibility
- ◆ Land use
- ◆ Flow alteration
- ◆ Channel modifications
- ◆ Siltation/embeddedness of stream substrate
- ◆ Water quality

The SFPR receives drainage from roughly 295 square miles of predominately agricultural land in Washington and Idaho, and urban development affects the watershed serving Moscow, Idaho (including the major tributary Paradise Creek) and Pullman, Washington (Pelletier 1993). Several other, smaller creeks converge with the SFPR upstream of its confluence with the North Fork Palouse River at Colfax, Washington. Thence the river flows generally west and southwest to Palouse Falls, finally draining into the Snake River at Perry, Washington. Palouse Falls is a natural barrier to fish migration. As a result, there are no anadromous fish in the SFPR (IDEQ 2007).

Based on inspection of Google Earth imaging, riparian vegetation appears to be sparse throughout the watershed, with much of the riparian corridor having been cleared for agricultural use. Carroll and Snouwaert (2009) reported that riparian vegetation accounted for only 2% of the total watershed, whereas forestland, urban area, and cropland or rangeland accounted for 6, 8, and 84%, respectively. Tetra Tech’s instream assessment of biota and migration patterns (Tetra Tech 2011) scored stream habitat at 10 locations along the SFPR; average reductions from a perfect score

(i.e., 100%) were 61% for riparian habitat and 85% for vegetative protection.³ In fact, the document stated that “...much of the historically diverse and multi-layered, complex vegetation structure in stream reaches is missing.” Thus, there is a moderate degree of vegetation (e.g., grasses) along the SFPR shoreline that provides a low level of protection from runoff or thermal stress (via canopy cover). Aerial photography suggests that riparian vegetation has the densest canopy within Pullman. The combination of sparse riparian vegetation and mixed urban-agricultural land use has resulted in relatively high sedimentation of the SFPR in the vicinity of the spilled diesel fuel (per observations by Four Star Supply). Tetra Tech (2011) also scored bank stability, reporting an average score of 49% below perfect at 10 study locations (and 70% below perfect at the 3 locations in Pullman). These scores suggest that erosion potential is generally moderate.

According to Tetra Tech (2011), there appears to be moderate channel modification in the SFPR, with scores being 28% less than perfect on average.⁴ The report states that channelization has occurred in agricultural areas, with low inputs of large woody debris, and that channelization and shoreline modification are also likely in urban areas like Pullman. The Palouse River downstream in Colfax, Washington, flows through a paved channel. Within Pullman, the average channel modification score among the three survey locations was 50%, reflecting the influence of urban development.

Water quality in the SFPR has historically been poor as a result of point and non-point source inputs (Pelletier 1993). Impacted water quality parameters include elevated pathogens (e.g., fecal coliforms), biological oxygen demand, ammonia, and temperature and low dissolved oxygen. During low-flow months, wastewater treatment plant effluent may account for the significant amount of surface water flow in the SFPR and its tributaries. For example, up to 87% of flow in Paradise Creek is attributable to wastewater treatment plant discharge during low-flow months (Carroll and Snouwaert 2009). Total maximum daily load (TMDL) reports have been published for ammonia (Pelletier 1993) and fecal coliform (Carroll and Snouwaert 2009), and another report for pH, dissolved oxygen, and temperature is forthcoming. The SFPR is listed as impaired or as a water of concern for several contaminants in fish tissue, including pesticides, total polychlorinated biphenyls, and 2,3,7,8-tetrachlorodibenzo-*p*-dioxin.

Based on the habitat conditions described herein, various parameter inputs were selected for the HI calculation, as described in Table 1.

³ The three sampling locations in Pullman (SFPR-057675, -123211, and -008523) had similar average reductions of 67 and 87%, respectively, from perfect riparian habitat and vegetative protection scores.

⁴ Tetra Tech (2011) used the term “channel alteration” rather than channel modification.

Table 1. HI parameterization

Input	Description	Value	Rationale
P1	barriers to natural fish movement	--	Natural barrier (Palouse Falls) prevents upstream fish migration; manmade barriers are irrelevant; therefore no value was input for P1.
P2	urbanization	8	Value is based on watershed urbanization (8%), as cited by Carroll and Snouwaert (2009) and WAC 173-183-620 Table 13.
P3	condition of riparian vegetation	0	Tetra Tech (2011) indicated a low degree of habitat cover and vegetation protection of the stream, suggesting a low value for riparian vegetation. Riparian vegetation accounts for only 2% of the watershed area, as cited by Carroll and Snouwaert (2009). This places the site in the lowest-value category per WAC 173-183-620 Table 14.
P4	condition of flood plain	5	Tetra Tech (2011) scored bank stability at 49% below perfect on average and within Pullman, at 70% below perfect. These scores suggest moderate risk of bank erosion and sloughing. Photographs and aerial photography of the SFPR suggest that the channel remains generally intact, so a lower score is not warranted (based on WAC 173-183-620 Table 15).
P5	land use of watershed	1	Carroll and Snouwaert (2009) stated that timberland accounted for 6% of the watershed. Other relevant land uses such as "improved pasture, terraces, or other conservation practices" are assumed to account for a small amount of the total watershed (<16%). Therefore, the land use is classified as 1 using WAC 173-183-620 Table 16.
P6	flow alteration	10	There are not significant impoundments or farm ponds controlling flow in the SFPR. This results in the highest input value per WAC 173-183-620 Table 17.
Np	"P" parameter count	5	Of parameters P1 through P6, only 5 were input. P1 was not specified.
F1	channel modifications	0.78	$F1 = 1 - (SM * FR)$; see the final two rows of this table for SM and FR rationale.
F2	impoundment / streambed condition	0.5	Tetra Tech (2011) reported a 40% reduction (on average, based on 10 study locations in the SFPR) or a 53% reduction (on average, based on 3 locations within Pullman) from a perfect score. Based on these values, the most similar rating from WAC 173-183-620 Table 20 is 0.5: "Streambed completely covered by varying thicknesses of transported material such as silt, sand, and gravel."
F3	water quality	0.5	Ecology has issued 303(d) listings and TMDLs for ammonia (Pelletier 1993) and fecal coliform (Carroll and Snouwaert 2009), and TMDLs are pending for pH, dissolved oxygen, and temperature. The score of 0.5 classifies SFPR as having "Occasional visible signs of oversupply of nutrients or other pollutants detected by analysis" (per WAC 173-183-620 Table 19).
SM	percent stream reach modified, expressed as decimal	0.275	Modification is based on Tetra Tech (2011) average from 10 SFPR habitat survey sites, reported as "channel alteration."
FR	percent fish reduction, expressed as decimal	0.8	Fish reduction is based on the WAC 173-183-620 Table 18 classification "channel realignment," which assumes that the SFPR channel within Pullman has been modified to reduce flood risk.

Ecology – Washington State Department of Ecology

WAC – Washington Administrative Code

HI – habitat index

TMDL – total maximum daily load

SFPR – South Fork Palouse River

Based on the values included in Table 1 and the equation provided in WAC 173-183-620, an HI of 0.9 was calculated (out of 10.0), suggesting that the SFPR at Pullman is degraded stream habitat. As noted in Section 2.2.1, the SVS is equal to the HI (0.9) multiplied by the FVS (5); therefore, the SVS equals 4.7 (out of 50.0).

3 SUMMARY OF NATURAL RESOURCE DAMAGES

The equation for calculating the compensatory cost for spill-related damage to a freshwater stream is provided in WAC 173-183-850 (Equation 1). The calculation combines the total spill volume (390 gal.) with the toxicity, mechanical injury, and persistence information reported in Section 2.1 and the SVS calculated in Section 2.2.2.

$$\text{Cost} = x * \text{SVS} * \text{oil gals} * (\text{toxicity} + \text{mechanical injury} + \text{persistence})$$

Equation 1

Where x is a constant adjustment factor based on the size of the spill (0.162 in the case of a spill <1,000 gal.)

WAC 173-183-870(6)(c) provides a modified equation (Equation 2) that accounts for spilled oil recovery in freshwater streams that occurs within the first 24 hours after a spill; the equation does so by subtracting part of the total spill volume from the cost calculation.⁵ Four Star and Fulcrum report that 132 gal. of oil have been recovered to date since response actions began, approximately 41 gal. of which were collected within the first 24 hours of the spill.

$$\text{Cost}_{\text{alt}} = x * [(\text{toxicity} * \text{SVS} * \text{oil gals}) + (\text{mechanical injury} * \text{SVS} * (\text{oil gals} - \text{recover gals})) + (\text{persistence} * \text{SVS} * (\text{oil gals} - \text{recover gals}))]$$

Equation 2

Where “recover gals” is the gallons of oil recovered within the first 24 hours. Therefore, based on Equation 2 (and a recovered oil volume of 41 gal.) and the assumptions and values provided in preceding sections and Table 1, the final cost estimate is \$2,057.65, or \$5.28 per gal.

Site reconnaissance indicates that Four Star’s response was effective. Four Star submits that its work has been conducted in good faith.

We look forward to working with you as the interested agencies consider the NRDA issues. Please feel free to contact Donna M. Chamberlin with any questions at 206.508.1930 or at Donna.Chamberlin@lewisbrisois.com.

⁵ The recovered oil volume is not subtracted from the cost relating to acute toxicity.

Sincerely,

Annie Gibbs



Brian Church



cc: Kevin McDonnel (Four Star Supply Inc.)
Travis Trent (Fulcrum Environmental Consulting)
Scott Groat (Fulcrum Environmental Consulting)
Donna M. Chamberlin (Lewis Brisbois Bisgaard & Smith, LLC)

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