PIERCE COUNTY PLANNING & PUBLIC WORKS DEPARTMENT OF FACILITIES MANAGEMENT

PRAIRIE PIT MAINTENANCE FACILITY SOIL REMEDIATION

On May 21, 2019, Jeff Rudolph with Pierce County Planning and Public Works (County) authorized Herrera Environmental Consultants (Herrera) to prepare a scope of work and cost estimate to conduct soil remediation activities at the north end of the Prairie Pit Maintenance Facility (Pierce County Tax Assessor Parcel number 0319262004) (referred to herein as the Site) adjacent to, and west of Waller Road East in Frederickson, Washington.

A limited Phase II Environmental Site Assessment (ESA) conducted by Shannon & Wilson (S&W) in May 2019, identified soils contaminated with lube-oil range petroleum hydrocarbons, carcinogenic polycyclic aromatic hydrocarbons (PAHs), and heavy metals (cadmium and lead) above the respective Model Toxics Cleanup Act (MTCA) Method A cleanup levels, unrestricted land use.

Based on Tacoma-Pierce County Health Department data, the site appears to be located within the 10 year wellhead protection area of a public water supply well or within 1,000 feet of a public or private water supply well. Therefore, according to Section 6.9.1 of Ecology's *Guidance for Remediation of Petroleum Contaminated Sites,* testing of groundwater is required to confirm that soil contaminants have not reached groundwater.

This scope of work covers oversight and sampling to be performed during Site remediation activities that will be conducted by a remediation contractor (Langseth Environmental Services, Inc.), and a drilling contractor for monitoring well installation (Holocene Drilling) subcontracted through Herrera. This scope of work includes a discussion of the activities, assumptions, deliverables, and a schedule associated with the following five tasks:

Task 1.0 – Soil Remediation and Sampling

Task 2.0 – Temporary Well Installation and Groundwater Sampling

Task 3.0 – Reporting

Task 4.0 – Project Management/Contract Administration

Task 5.0 – Contingency

TASK 1.0 – SOIL REMEDIATION AND SAMPLING

Under this task, Herrera will oversee the excavation and removal of soils at two locations where confirmed or suspected contaminated soils were identified in the Limited Phase II Environmental Site Assessment (ESA) (S&W 2019):

- Test Pit 9 (TP-9) where elevated concentrations of lube oil-range petroleum hydrocarbons, total carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and heavy metals (cadmium and lead) were detected above MTCA Method A cleanup levels (CULs), and
- Near TP-4 at the location of the abandoned automobile where contaminated soils could be present beneath the vehicle.

Soils will be field screened as they are excavated based on visual (soil staining or discoloration) and olfactory signs of contamination and loaded directly into steel roll-off boxes or stockpiled pending Toxicity Characteristic Leaching Procedure (TCLP) testing results to determine disposal options as dangerous waste or petroleum contaminated soil.

A terrestrial ecological evaluation (TEE) will be completed for the site to determine if CULs other than the MTCA method A screening levels need to be met at the Site. The TEE will follow procedures included in Washington Administrative Code (WAC) 173-340-7490 through 173-340-7494.

Herrera will collect up to 11 confirmation soil samples from the sidewalls and bottoms of the two completed excavations for laboratory analysis of:

- Gasoline-range petroleum hydrocarbons, benzene, toluene, ethylbenzene and total xylenes (BTEX), plus additives EDB, EDC, MTBE, TBA, TAME, and ETBE by methods NWTPH-Gx/EPA 8260C.
- Halogenated volatile organic compounds (HVOCs) by EPA method 8260C.
- Diesel- and lube oil petroleum hydrocarbons by Ecology's NWTPH-Dx method,
- cPAHs) and naphthalenes by EPA method 8270D/SIM,
- Total metals (cadmium, chromium, lead, nickel, and zinc) by EPA method 6010D/7471B.
- Poly-chlorinated biphenyls (PCBs) by EPA method 8082A.

Assumptions

- The County will provide access to the Site.

- A private locating firm will identify underground utilities within four hours.
- Herrera will prepare a project Health and Safety Plan based on federal (29 CFR Part 1910.120) and state (Chapter 296-843-120 WAC) regulations, which address practices conducted at sites associated with hazardous substances.
- No further site characterization activities or excavations or explorations will be performed at the Site with the exception of groundwater monitoring wells and sampling under Task 3.0.
- The Site qualifies for either a TEE exclusion or simplified TEE.
- The total depth and lateral extent of soil contamination at TP-9 was not determined during the Phase II ESA. For planning purposes, it is estimated that the TP-9 excavation could be approximately 20' x 20' by 12'deep, and generate about 180 cubic yards, or 250 tons of contaminated material for disposal.
- It is unknown if contaminated soils exist beneath the abandoned automobile. For planning purposes, it is estimated that the excavation, based on field screening for visual and olfactory signs of contamination, could be approximately 10' x 10' x 5' deep, and generate about 20 cubic yards, or 30 tons of contaminated material for disposal.
- Langseth Environmental Services, Inc. will provide the excavation, backfilling, and soil disposal services.
- Libby Environmental, Inc. will provide a mobile laboratory at the site for one day to provide quick results for soil confirmation samples. Libby will analyze the samples for gasoline- and diesel-range petroleum hydrocarbons and additives, and HVOCs.
- Onsite Environmental, Inc. of Redmond, Washington will complete soil analyses for the other analyses including cPAHs, total metals, and PCBs.
- Up to 5 trips to the site will be required; one for the utility locate, three for the excavation work, and one to oversee backfilling the excavations.
- Investigation derived waste will be drummed and disposed offsite; disposal does not include hazardous waste.

Deliverables

- See Task 3.0 Reporting.

TASK 2.0 – TEMPORARY WELL INSTALLATION AND GROUNDWATER SAMPLING

Field work includes drilling borings, installing temporary monitoring wells, and collecting groundwater samples to characterize site conditions. Herrera will perform the following:

- Manage the drilling, installation, and development of up to three temporary monitoring wells up to 50 feet bgs: one located directly adjacent to the south east of the planned TP-9 excavation, a second well located near the northwest corner of the parcel (assumed to be downgradient of the excavation), and a third well located approximately 400 feet to the northwest of TP-9 within the road right-of-way along 27th Avenue East.
- Prepare and submit the appropriate forms to the Department of Ecology to obtain the necessary permits for the additional wells and soil borings. Submit boring logs to the Department of Ecology upon completion of the work.
- Collect groundwater level measurements and one round of groundwater samples.
- Submit two samples plus one field duplicate for analysis.
- Submit one trip blank for analysis of volatile organic compounds (VOCs).
- Analyze each of the groundwater samples for:
    - Gasoline-range organics (benzene, toluene, ethylbenzene and total xylenes (BTEX), plus EDB, EDC, MTBE, TBA, TAME, and ETBE by Method NWTPH-Gx/EPA 8260C.
    - Halogenated volatile organic compounds (HVOCs) by EPA Method 8260C.
    - Diesel- and lube oil petroleum hydrocarbons by Method NWTPH-Dx,
    - cPAHs) and naphthalenes by Method 8270D/SIM,
    - Total metals (cadmium, chromium, lead, nickel, and zinc) by Method 6010D/7471B.
    - Poly-chlorinated biphenyls (PCBs) by EPA Method 8082A.
- Coordinate the disposal of drums of soil cuttings and monitoring well purge water generated during the investigation.

Assumptions

- Holocene Drilling will install and develop the temporary monitoring wells.
- Onsite will complete the groundwater analyses.
- The wells will be sampled using a submersible pump.
- Investigation derived waste will be drummed and disposed offsite; the cost estimate does not include disposal as hazardous waste.
- The estimated depth to groundwater is between 40 to 60 feet bgs based on a well logs viewed on Ecology's Well Report Viewer website on nearby properties. If groundwater is not encountered at 50 feet, then the boring will be stopped and no groundwater samples will be collected.

Deliverables

- None – see Task 3.0.

TASK 3.0 – REPORTING

Herrera will prepare a report following the Remedial Investigation format per Washington Administrative Code (WAC) 173-340-350(4) summarizing soil and groundwater sampling. The report will describe the remedial action activities performed by Herrera as well as a summary of the data collected by Shannon & Wilson during the Limited Phase II Environmental Site Assessment completed in May 2019. The TEE documentation will be included in the report as an appendix.

Deliverables

- Draft report electronic copy (PDF and/or Word file) for County review.
- Final report electronic copy (PDF and/or Word file) for Ecology review.

Assumptions

- The site qualifies for cleanup under Model Remedy 1 where complete removal of the contaminated soil will take place and Method A Soil Cleanup Levels for Unrestricted Property Use have been selected; and the groundwater samples are all non-detected for the constituents analyzed.

- The Remediation Report will include observations, sampling, and related work performed by Herrera, and a summary of the limited Phase II investigation work.
- This scope of work does not include support for entering Ecology's Voluntary Cleanup Program to pursue a No Further Action determination from Ecology.

Deliverables

- Draft report in electronic file format (Adobe PDF) for County review.
- Final report in electronic file format (Adobe PDF) to the County.

TASK 4.0 – PROJECT MANAGEMENT/CONTRACT ADMINISTRATION

Herrera will manage and administer the project, including tracking and updating the project schedule, preparing invoices, and coordinating work efforts with the County. George Iftner, Herrera's project manager, will have frequent phone and e-mail contact with the County's project manager Jeff Rudolph, as needed.

Deliverables

- Monthly invoices
- Communications via phone and email regarding scope, schedule, and/or budget.

TASK 5.0 – CONTINGENCY

A contingency task is included to cover potential additional soil excavation beyond the estimate provided in Task 1, as well as time for coordination, and additional laboratory analyses, if needed.

Assumptions

- Up to 12 hours for one staff member for additional field oversight.
- A 10 percent contingency for soil excavation and backfilling for Langseth Environmental.
- Two additional soil samples for laboratory analysis of gasoline- and diesel-range petroleum hydrocarbons (and HVOCs and fuel additives), cPAHs, total metals, and PCBs.

Deliverables

- None.

PROJECT SCHEDULE

The following project schedule is anticipated:

- Notice to proceed from the County on or about June 10, 2019.
- Remedial activities during the week of June 17.
- Draft Remedial Investigation Report within 6 weeks of completing field work.
- Final Remediation Investigation Report within 1 week of receiving comments from the County.