SOIL MANAGEMENT PLAN

2415 SE Moores Site
2401 – 2415 SE Moores Street
Milwaukie, Oregon
DEQ ECSI No. 6427

For
S.E. Moores II, LLC
February 2, 2022

Project: SEMoores-1-02

February 2, 2022

S.E. Moores II, LLC
c/o Kenneth M. Simpson
4007 NE 3rd Street
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Soil Management Plan
2415 SE Moores Site
2401 – 2415 SE Moores Street
Milwaukie, Oregon
DEQ ECSI No. 6427
Project: SEMoores-1-02

NV5 is pleased to submit this Soil Management Plan (SMP) for the 2415 SE Moores Site located at 2401 – 2415 SE Moores Street in Milwaukie, Oregon. This SMP addresses the management of potentially contaminated soil that could be encountered during site redevelopment. This document is intended to be used by excavation contractors during earthwork activities and should be used in conjunction with the NPDES 1200-C permit and any project specifications provided to the contractor by the project developer pertaining to the handling, segregation, management, characterization, re-use, and/or disposal of impacted soil, clean soil, and debris.

Sincerely,

NV5

Colby R. Hunt, C.H.M.M.
Principal

cc: Kevin Dana, Oregon Department of Environmental Quality (via email only)
Kate Moore, Dunn Carney (via email only)

KJK:CRH:kt
Attachments
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ACRONYMS AND ABBREVIATIONS

AOC	area of concern
AOI	area of interest
BGS	below ground surface
BMP	best management practice
CFR	Code of Federal Regulations
CFSL	Clean Fill Screening Level
CSM	conceptual site model
DEQ	Oregon Department of Environmental Quality
ECSI	Environmental Cleanup Site Information
EES	Easement and Equitable Servitude
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
ESCP	Erosion and Sediment Control Plan
HCP	Hazard Communication Plan
HSP	Health and Safety Plan
ICP-MS	inductively coupled plasma mass spectrometry
I.D.	identification
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
ND	not detected
NE	not established
NFA	No Further Action
not detected	compound not detected at a concentration equal to or greater than the laboratory method reporting limit or reporting detection limit
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration
OWS	oil/water separator
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PID	photoionization detector
ppm	parts per million
RBC	risk-based concentration
RBDM	*Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites*
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
SMP	Soil Management Plan
TCE	trichloroethene
TCLP	toxicity characteristic leaching procedure
TMB	trimethylbenzene
TPH	total petroleum hydrocarbon(s)
UST	underground storage tank
VOC	volatile organic compound

1.0 INTRODUCTION

This SMP has been prepared for the 2415 SE Moores Site located at 2401 – 2415 SE Moores Street in Milwaukie, Oregon (project site). This document is intended to assist future construction teams in field identification and management of known and potentially contaminated soil as well as clean soil and debris that could be encountered at the project site during potential construction. This SMP includes field protocol for identification, response actions, communication, removal, segregation, temporary storage or stockpiling, transportation, treatment, and disposal of contaminated soil. Acronyms and abbreviations used herein are defined above, immediately following the Table of Contents.

2.0 PROJECT SITE DESCRIPTION

The project site is located at 2401 – 2415 SE Moores Street in Milwaukie, Oregon, and consists of 0.87 acre developed with a commercial building occupied by EMCO Mail (mail and print services) and Tice Industries (architectural hardware manufacturer). The project site includes Tax Lot 2800 of Clackamas County Tax Map 11E25BB. The project site is in an industrial area of Milwaukie and is bound by the following:

- To the north by the Springwater Corridor Trail, across which is Pendleton Woolen Mill Store
- To the east by Anderson Die & Manufacturing industrial facilities
- To the south by SE Moores Street, across which is Standard Gear Manufacturing, Inc.
- To the west by the Northwest Control Company warehouse facility

The project site is shown relative to surrounding physical features on Figure 1. The layout of the project site is shown on Figure 2.

3.0 BACKGROUND

The following sections describe the background of the project site, including a description of project site development history, a summary of previous environmental investigations conducted at the project site, a description of the subsurface soil and groundwater conditions at the project site, and a description of the regulatory history of the project site.

3.1 BIBLIOGRAPHY

The purpose of this section is to summarize available information related to the historical site development and subsurface conditions at the project site. Our knowledge of the project site is based on the following reports:

- *Phase I Environmental Site Assessment; Moores Industrial Building; 2401-2415 SE Moores Street; Milwaukie, OR 97222*, prepared by AES Due Diligence, Inc. (AES), dated April 22, 2020
- *Soil Sampling Report; Property Located at 2415 SE Moores Street, Milwaukie, OR*, prepared by K&S Environmental, Inc., dated May 22, 2020
- *Oil Water Separator Decommissioning Report; Property Located at 2415 SE Moores Street, Milwaukie, OR*, prepared by K&S Environmental, Inc., dated June 11, 2020

- *Subsurface Investigation Report; Property Located at 2415 SE Moores Street, Milwaukie, OR*, prepared by K&S Environmental, dated June 29, 2020
- *Independent Cleanup Pathway Closure Report; 2415 SE Moores Site; 2405 – 2415 SE Moores Street; Milwaukie, Oregon; DEQ ECSI No. 6427*, prepared by GeoDesign, Inc., dated December 14, 2020
- *Limited Soil Gas Investigation; 2415 SE Moores Site; 2405 – 2415 SE Moores Street; Milwaukie, Oregon; DEQ ECSI No. 6427*, prepared by GeoDesign, Inc., DBA NV5, dated May 7, 2021
- *Sub-Slab Vapor Investigation; 2415 SE Moores Site; 2405 – 2415 SE Moores Street; Milwaukie, Oregon; DEQ ECSI No. 6427*, prepared by NV5, dated November 29, 2021

3.2 PROJECT SITE DEVELOPMENT HISTORY

According to the 2020 Phase I ESA, the project site was historically occupied by three residences from at least 1914 through the 1960s. The residences were removed during the late 1960s and the current warehouse structure was constructed. The project site has been occupied by various commercial/light industrial tenants between at least 1970 and the present, including an auto repair facility.

3.3 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

The results of previous subsurface investigations are summarized in the sections below. Previous exploration locations pertaining to soil and water sampling are shown on Figures 3 and 4. Soil sample analytical data is summarized in Tables 1 through 5.

3.3.1 Initial Investigation

In May 2020, K&S Environmental advanced two soil borings (S1 and S2) adjacent to an OWS that had been identified as a REC in a Phase I ESA conducted by AEC in 2020. Visual and olfactory indicators of petroleum contamination were observed in soil from 3 feet BGS to the total depth explored of 9 feet BGS in both borings. One soil sample was collected from the northern end of the OWS at 6 feet BGS (S1) and two soil samples were collected from the southern end of the OWS at 6 feet BGS (S2) and 9 feet BGS (S3). Petroleum hydrocarbons were not detected in soil samples at concentrations greater than the applicable DEQ RBCs. VOCs were not detected in soil sample S1 and were either not detected or were detected at concentrations less than applicable DEQ RBCs in soil sample S2. Groundwater was encountered in the borings at approximately 5 feet BGS, but a groundwater sample was not collected.

3.3.2 OWS Decommissioning

In June 2020, K&S Environmental decommissioned the OWS at the project site by removal. The 300-gallon OWS appeared to be a closed system that was intended to be pumped out periodically when it reached capacity. Several holes were observed in the sidewall of the OWS. Approximately 10.91 tons of petroleum-contaminated soil were excavated during decommissioning activities and disposed of at the Hillsboro landfill. The remedial excavation was approximately 12 feet long by 10 feet wide and extended approximately 10 feet BGS.

Confirmation soil samples were collected from the base of the excavation (C1) and from each of the sidewalls (C2 through C5). The confirmation soil samples indicate that a pocket of residual contamination was left in place, primarily extending east beneath the Tice Industries building and

north and south of the former OSW. Oil-range hydrocarbons were detected at concentrations greater than the applicable DEQ calculated site-specific TPH *Soil Ingestion, Dermal Contact, and Inhalation* RBC for construction worker receptors. PAHs, VOCs, TCLP RCRA 8 metals, and PCBs were either not detected or were detected at concentrations less than the applicable DEQ RBCs from the soil sample collected from the east sidewall (C3).

K&S Environmental collected a groundwater sample from water that seeped into the remedial excavation at approximately 9 feet BGS. Low-level concentrations of petroleum hydrocarbons and VOCs were detected in the groundwater sample. The detected concentrations were less than applicable DEQ RBCs.

3.3.3 Supplemental Investigation

K&S Environmental advanced four additional borings (B-1 through B-4) to determine the extent of impacts in the vicinity of the OWS in June 2020. Borings B-1, B-2, B-3, and B-4 were advanced to the north, east, south, and west of the former OWS, respectively. The borings were drilled to depths of 10 to 11 feet BGS. Soil samples were collected from each boring at the soil-water interface. Diesel- and oil-range hydrocarbons were not detected in the four soil samples collected.

K&S Environmental collected groundwater samples from temporary wells installed in each of the four borings (B-1 through B-4). Low-level concentrations of diesel-range hydrocarbons were detected in groundwater samples collected from borings B-1, B-2, and B-4. The detected concentrations were less than applicable DEQ RBCs. Naphthalene was also detected in the groundwater sample collected from boring B-1 at a concentration less than applicable DEQ RBCs. Petroleum hydrocarbons, VOCs, and PAHs were otherwise not detected in the four groundwater samples.

3.3.4 Soil Gas and Sub-Slab Vapor Investigations

NV5 conducted soil gas and sub-slab vapor investigations in the vicinity of the OWS in May 2021 and November 2021, respectively. The results of the soil gas and sub-slab vapor investigations indicated that 1,4-dioxane and TCE are present beneath the western portion of the Tice Industries building at concentrations greater than DEQ *Vapor Intrusion into Buildings* RBCs for urban residential receptors. The detected concentrations of 1,4-dioxane and TCE in sub-slab vapor samples did not exceed the DEQ *Vapor Intrusion into Buildings* RBCs for occupational receptors.

3.4 SUBSURFACE CONDITIONS

The following sections describe the subsurface soil and groundwater conditions at the project site.

3.4.1 Soil

Environmental explorations were conducted on the project site to a maximum depth of approximately 11 feet BGS. In general, subsurface conditions encountered at the project site consist of silty clay to a depth of approximately 8 or 9 feet BGS underlain by gravel to the total depth explored.

3.4.2 Groundwater

Groundwater was encountered at the project site at depths between 5 and 9 feet BGS. The depth to groundwater beneath the project site likely fluctuates in response to seasonal precipitation.

3.5 REGULATORY HISTORY

Based on the results of previous investigations conducted at the project site, the property owner enrolled the project site into the DEQ Voluntary Cleanup Program in August 2020 to receive regulatory oversight in support of an NFA determination for the residual contamination associated with the OWS. The project site was subsequently added to the DEQ ECSI database (ECSI No. 6427). Following their review of previous reports listed in Section 3.1, DEQ agreed the project site qualified for a conditional NFA determination. DEQ stated the conditional NFA determination and associated EES would include two restrictions: (1) preparation and approval of an SMP prior to construction work that may encounter residual contaminated soil in the vicinity of the OWS and (2) notification of DEQ prior to project site redevelopment for urban residential use. The project site listing is currently under a period of review for public comment, and issuance of the conditional NFA is anticipated for January 2022.

4.0 CONTAMINANT INFORMATION AND DISTRIBUTION

Based on the results of previous investigations, soil in the vicinity of the former OWS contains elevated concentrations of petroleum hydrocarbons, PAHs, and VOCs. Soil chemical analytical results are presented in Tables 1 through 5. The maximum detected concentrations of these contaminants in previously collected soil samples are as follows:

Petroleum Hydrocarbons

- Gasoline-Range Hydrocarbons: 1,040 mg/kg
- Diesel-Range Hydrocarbons: 54.5 mg/kg
- Oil-Range Hydrocarbons: 21,400 mg/kg

PAHs

- Anthracene: 0.550 mg/kg
- Benz(a)anthracene: 1.11 mg/kg
- Benzo(a)pyrene: 0.656 mg/kg
- Benzo(b)fluoranthene: 0.917 mg/kg
- Benzo(g,h,i)perylene: 0.690 mg/kg
- Chrysene: 0.658 mg/kg
- Fluoranthene: 2.09 mg/kg
- Fluorene: 0.549 mg/kg
- Naphthalene: 26.1 mg/kg
- Phenanthrene: 2.56 mg/kg
- Pyrene: 2.54 mg/kg

VOCs

- n-Butylbenzene: 3.62 mg/kg
- sec-Butylbenzene: 0.286 mg/kg
- Ethylbenzene: 2.26 mg/kg
- Isopropylbenzene: 0.243 mg/kg
- 4-Isopropyltoluene: 0.251 mg/kg
- Naphthalene: 39.2 mg/kg
- n-Propylbenzene: 1.20 mg/kg
- PCE: 0.0856 mg/kg
- Toluene: 2.07 mg/kg
- 1,2,4-TMB: 10.9 mg/kg
- 1,3,5-TMB: 2.85 mg/kg
- m,p-Xylenes: 12.0 mg/kg
- o-Xylenes: 4.33 mg/kg

4.1 REGULATORY SCREENING LEVELS

GeoDesign presented a CSM for the project site in the 2020 Independent Cleanup Pathway Closure Report. Based on the CSM, soil sample chemical analytical results were compared to the following applicable DEQ RBCs:

- Generic *Soil Ingestion, Dermal Contact, and Inhalation*: construction and excavation worker receptors
- Site-specific (TPH) *Soil Ingestion, Dermal Contact, and Inhalation*: construction and excavation worker receptors
- *Volatilization to Outdoor Air*: occupational receptors
- *Vapor Intrusion into Buildings*: occupational receptors

To characterize soil for disposal purposes, soil sample chemical analytical results were also compared to DEQ CFSLs. Soil with field evidence of contamination and/or contaminants detected at concentrations greater than DEQ CFSLs will require disposal at a RCRA Subtitle D landfill or other DEQ-approved facility. Soil that does not appear stained, does not have a chemical- or petroleum-like odor, and does not contain contaminants at concentrations greater than DEQ CFSLs can be managed as clean fill.

Based on the detected concentrations of contaminants in soil in the vicinity of the former OWS, the following AOC and AOI were identified.

4.2 AREA OF CONCERN

The AOC is comprised of soil in the vicinity of the former OWS with oil-range hydrocarbons at concentrations greater than the applicable site-specific TPH *Soil Ingestion, Dermal Contact, and Inhalation* RBC for construction worker receptors. DEQ has not developed CFSLs for oil-range hydrocarbons; however, because of the presence of petroleum-like staining and/or petroleum-like odors, soil in the AOC cannot be managed as clean fill. The estimated extent of the AOC is shown on Figure 3.

4.3 AREA OF INTEREST

The AOI is comprised of soil west of the former OWS with diesel- and oil-range hydrocarbons at concentrations less than applicable DEQ RBCs but that may exhibit field evidence of contamination and/or contain contaminants at concentrations greater than DEQ CFSLs. The estimated extent of the AOI is shown on Figure 3.

5.0 WORKER SAFETY

As described in Section 4.2, oil-range hydrocarbons were detected in confirmation soil samples collected north, south, and east of the former OWS at concentrations greater than the applicable site-specific TPH *Soil Ingestion, Dermal Contact, and Inhalation* RBC for construction worker receptors. The estimated extent of residual petroleum contamination exceeding applicable DEQ RBCs (the AOC) is shown on Figure 3. Proper precautions should be taken to eliminate direct contact during removal of petroleum-impacted soil in the vicinity of the former OWS.

Prior to beginning earthwork activities in the AOC, the owner, the operator, or the contractor must prepare and implement a site-specific HCP. The HCP fulfills "worker right to know" requirements (29 CFR 1926.59). If completed by the contractor, a copy of the HCP must be submitted to the owner prior to the start of work on the project. During work on the project, the HCP must be posted at the project site. The contractor is responsible for notifying subcontractors of pertinent environmental conditions. Subcontractors may either adopt the contractor's HCP or must prepare their own HCP. This document should be used in conjunction with, not in place of, the HCP and the project specifications. Each contractor and subcontractor is responsible for the safety of its employees, including compliance with applicable OSHA regulations and compliance with all specifications in the technical specifications manual for the project. In addition to implementation of an HCP, the owner, the operator, or the contractor should prepare and implement a site-specific HSP in accordance with OSHA requirements to ensure adequate protection for their workers while on site.

6.0 SOIL MANAGEMENT

The project site owner, operator, contractors, on-site workers, or any others involved with subsurface excavation activities should be familiar with this SMP and the potential locations of contaminated soil, including the AOC and the AOI, prior to beginning earthwork activities. A summary of methods used to properly identify, characterize, handle, and dispose of contaminated soil that may be encountered during future site earthwork activities is presented in the following sections.

6.1 FIELD SCREENING

Previous investigation results indicate that soil within the AOC and AOI may exhibit physical evidence of contamination and may not chemically qualify as clean fill. In addition, it is possible that impacted soil could be present in portions of the project site not previously explored. This section describes the protocol to properly field screen and manage soil in the event that unanticipated contaminated soil is encountered during excavation.

The four primary physical indicators of petroleum-related contamination in soil include staining, water sheen, elevated PID readings, and petroleum-like odor. During excavation activities, soil should be continuously observed for evidence of staining, elevated PID readings, and sheen. Odor can be subjective, and inhalation of vapors from impacted soil is harmful to human health. Therefore, odor is considered an inadvertent field indicator and should not be used for continuous screening of soil.

Staining: Generally, soil that is contaminated with petroleum hydrocarbons exhibits gray or black staining, although other contaminants and natural conditions may also cause staining.

Sheen: Sheen is another indication of petroleum contamination. Soil with a sheen may appear shiny and reflective. Sheens from heavily impacted soil may appear iridescent with rainbow-like colors. Sheens may also be observed in contaminated groundwater.

PID Readings: PID readings involve the measurement of headspace vapors originating from a soil sample. PID screening is performed by placing a soil sample in a plastic bag. Air is captured in the bag, and the bag is shaken to expose the soil to the air trapped in the bag. The probe of a PID is inserted into the bag, which measures VOC vapor (petroleum constituent) concentrations in units of ppm. A PID is designed to quantify VOC vapor concentrations in the range between 1 and 2,000 ppm. Our review of the extensive historical data indicates that a PID reading exceeding 10 ppm may indicate the presence of soil not expected to meet DEQ CFSLs.

Odor: Petroleum products, solvents, and other types of contaminated soil may release vapors when exposed to the atmosphere. If concentrated enough, these vapors will be interpreted as an odor. Odors may also be present in contaminated groundwater.

Soil field screening should include observation of any disturbed soil during excavation activities. Soil field screening should be conducted at an approximate frequency of one 5-point composite soil sample per approximately 50 cubic yards of soil or more frequently as needed. Field screening should focus on soil that appears to have indications of petroleum hydrocarbon-related impact. If evidence of contamination is not observed in each excavation area, a random sample will be collected for field screening. The field screening process includes the following:

- Observe the sidewalls and base of the excavation for evidence of possible contamination.
- Collect five grab soil samples by hand or trowel (approximately one hand full) that are representative of the material being excavated. If used, the trowel will be decontaminated between sampling intervals.
- Combine and thoroughly homogenize the five grab soil samples into one 5-point composite soil sample using a stainless steel bowl and either a stainless steel trowel or spoon.
- Retain a portion of the composite soil sample (approximately the size of half a sugar cube) for sheen testing that includes dropping the soil into a black pan to observe the degree of soil sheen (no sheen, slight sheen, moderate sheen, or heavy sheen).
- The majority of the composite soil sample will be placed into a plastic bag with trapped air. The bagged sample is allowed to sit for approximately one minute and then tested for headspace vapors using a hand-held PID. Based on the routine field screening process and the use of standard bag size, we can assume that the amount of trapped air in each bag is

approximately equivalent for all field-screened samples. Calibration of the PID will be conducted on a daily basis and will be recorded in a calibration log. The calibration log will document the PID model calibration standard used and background level after calibration.

- Field screening documentation (i.e., staining, sheen, and/or headspace vapor measurements) and a brief description of the soil type will be recorded in soil field screening logs. The field logs will indicate areas and associated volumes of excavated material requiring stockpiling for further evaluation and will be submitted to DEQ.

Field management of excavated soil will be supported using the field screening and decision matrix summarized below. If field screening indicates sheens, staining, discoloration, or headspace PID measurements exceeding 10 ppm, the soil should be temporarily stockpiled in accordance with Section 6.2 until final disposition. Conversely, if excavated soil does not exhibit any sheen, does not appear stained or discolored, does not generate PID measurements above 10 ppm, and meets the physical characteristics of clean fill as defined by DEQ[1], the material can be managed as clean fill.

<table>
<tr><th>Sheen Results</th><th>PID Results (ppm)</th><th>Visual</th><th>Action</th></tr>
<tr><td>No sheen</td><td><10.0</td><td>No staining, discoloration, odor, or debris</td><td>No action needed; material can be managed as clean fill.</td></tr>
<tr><td colspan="3">If any one of the three field screening indicators below are exceeded, follow the appropriate action.</td><td rowspan="2">Soil should be stockpiled in accordance with Section 6.2</td></tr>
<tr><td>Slight sheen, moderate sheen, or heavy sheen</td><td>>10.0</td><td>Staining, discoloration, odor, or debris</td></tr>
</table>

6.2 SOIL STOCKPILING

Petroleum-contaminated soil generated during excavation activities can be temporarily stockpiled in areas designated by representatives of the owner. Excavated material that is placed in temporary stockpiles must be well maintained at all times. All stockpiled material must be placed with a berm around the perimeter of the stockpile. The plastic sheeting and berm must be constructed to prevent the runoff of soil and contaminants to surrounding areas. The berm can be constructed with hay bales, dimensional lumber, or other equivalent methods. Plastic sheeting that covers the soil stockpile should be secured using sand bags or equivalent.

Stockpiles must be clearly designated as to the nature of the stockpiled soil (e.g., contaminated soil versus clean fill), either with signage or stakes with different colored flagging. The locations and nature of each on-site stockpile should be discussed during daily work meetings. All stockpiles should be located on the project site. Following removal, the stockpile areas should be restored to a pre-stockpile condition. Residual plastic or debris should not be left unattended and must be properly disposed of following stockpile removal.

[1] DEQ Internal Management Directive titled Clean Fill Determinations, dated February 21, 2019

6.2.1 Composite Soil Sampling

Stockpiled soil exhibiting physical evidence of contamination should be sampled using composite soil sampling methods and analyzed for disposal profiling. In general, composite soil sampling frequency should adhere to the following, unless an alternate sampling frequency has been accepted by the soil disposal facility:

Stockpiled Soil Sampling Frequency

Stockpile Volume (cubic yards)	Number of Composite Samples to Collect
0 – 10	1
11 – 50	2
51 – 100	3
101 – 500	4

Each composite sample should be comprised of three soil sub-samples collected from a particular area of the stockpile. Stockpiles greater than 1,000 cubic yards should be sampled at a rate of five composite samples for the first 500 cubic yards, plus one composite sample for each additional 500 cubic yards.

Stockpile soil samples should be collected by hand or with the use of hand tools. Decontaminated hand tools should be used to remove the surface layer of soil and then the sample will be retrieved with a decontaminated stainless steel equipment or disposable gloves. Chrome-plated tools should not be used.

Samples should be collected using the procedure outlined below. Disposable gloves should be worn and changed between samples.

- Remove the top layer of soil to the desired sampling depth using a decontaminated hand tool.
- Conduct an initial visual screen (based on discoloration and sheen) to help identify the most appropriate sampling location.
- Mix the discrete samples into one composite sample in a decontaminated stainless steel bowl or disposable plastic bag until thoroughly homogenized.
- Transfer the composite sample to a labeled, laboratory-prepared sample jar using a decontaminated stainless steel or plastic laboratory spoon. Fill the jar(s) completely to minimize headspace.
- Clean the jar rim(s) before tightening the lids, and quickly and adequately seal the sample containers.
- Collect a sufficient volume of sample for the particular analysis. Place the labeled sample jar(s) in an iced cooler for temporary storage. Transport the samples to the chemical analytical laboratory.

- Use a field notebook to record a description of the soil that was sampled, the location of sample, the sample I.D., and the time of sample collection. Record the sample on the soil sampling field forms and chain-of-custody form. The stockpile sample I.D. will include a prefix identifying the stockpile (SP) number followed by a sequential numeric designation. For example, the third composite sample collected from stockpile SP-3 will be identified as "SP3-3".
- Decontaminate the equipment between collection of soil samples. Decontamination will include: (1) rinse with tap water and scrub with a scrub brush until free of large particles, (2) wash with phosphate-free detergent solution, (3) rinse with tap water, and (4) rinse with distilled water.

6.2.2 Disposal Profiling

Composite samples collected from temporary stockpiles generated during earthwork activities that will be used to profile the soil for disposal purposes should be submitted to an analytical laboratory for analysis of one or more of the following (as required by the receiving disposal facility):

- Gasoline-range hydrocarbons by Method NWTPH-Gx
- Diesel- and oil-range hydrocarbons by Method NWTPH-Dx
- RCRA 8 metals by EPA 6000/7000 Series Methods
- Leachable metals by EPA Methods 1311/6010B
- PCBs by EPA Method 8082
- VOCs by EPA Method 8260B
- PAHs by EPA Method 8270C-SIM

6.3 OFF-SITE TRANSPORT AND DISPOSAL

The excavation contractor is responsible for obtaining appropriate permits from the permitted landfill facility(s) prior to hauling the impacted soil or other materials to their facility. The earthwork contractor will likely need to provide a copy of the chemical analytical laboratory report(s) to the selected disposal facility. The receiving facility may require additional sampling prior to accepting exported clean fill. Copies of the permit should accompany each load transported to the selected disposal facility.

Disposal facilities often have the following requirements prior to accepting soil at their facility:

- Contaminated soil will not be received without first completing a soil profile sheet, obtaining a permit (to be completed by the earthwork contractor), have an approval of credit application on file, and have pre-approval from the disposal facility.
- Trucks will be permitted to weigh in as negotiated with the facility.
- Material may be sampled during delivery by the disposal facility. Comparisons may be made between the submitted profile and on-site analysis. Any material's profile that does not compare to delivered material may be rejected.

- Exported soil must not contain any free liquids or foreign material (i.e., rebar, fittings, cans, wood, etc.). Truck loads found with excessive foreign material may be reloaded and returned to the customer or screened, sorted, and disposed of by the disposal facility for an additional fee.
- The owner shall be notified and approve of all off-site soil disposal locations regardless of soil quality.

6.4 LOADING AND HAULING

Material intended for off-site disposal can be loaded directly into trucks for transport to the receiving facility once the appropriate permitting has been completed and field screening protocols implemented, as appropriate. All truck loading should occur on site. The contractor must exercise care during loading of the impacted material to help minimize spillage of the material onto the ground surface. All trucks leaving the project site should be free of loose soil on the exterior of the trucks and may require covers. Impacted soil loaded into trucks should be covered if weather conditions could cause soil to blow out (dry, warm, or windy conditions) during transport to the disposal facility. The contractor must use care not to track soil onto roads and must routinely wash down the roads if soil is being tracked onto them. Trucks should not be allowed to leave the project site if liquids are draining from the load. Transport tracking tickets may be required, which document the haul to the approved disposal facility for each truck leaving the project site.

6.5 WHEEL WASH

Standard site entry BMPs, including rock pads at the entrances/exits to the construction site and gravel filter berms, should be implemented at the project site in accordance with Section 4.2 of the Clackamas County's *Erosion Prevention and Sediment Control Planning and Design Manual*, dated December 2008. If sediment is tracked off site during construction, additional BMPs may be implemented, potentially including washing wheels before vehicles leave the site. If required, wheel washing should be completed on the rock pad or in an approved wheel wash structure, as specified in Section 4.2.13 of the Clackamas County's *Erosion Prevention and Sediment Control Planning and Design Manual*, dated December 2008. The wheels should be washed before crossing the rock pad to leave the project site.

6.6 EROSION AND DUST CONTROL

Exposed soil will become susceptible to erosion by wind and water; therefore, erosion control measures should be planned carefully and in place before excavation and stockpiling begin. Silt fences, hay bales, and/or granular haul roads should be used, as necessary, to reduce sediment transport during construction to acceptable levels. Measures to reduce erosion should be implemented in accordance with State of Oregon, City of Milwaukie, and Clackamas County regulations regarding erosion control. In general, erosion control measures must limit sediment transport to less than 1 ton per acre per year, as calculated by the Universal Soil Loss equation. Erosion and dust control measures should be presented in an ESCP for the project site.

6.7 IMPORTED FILL MATERIAL

All fill material imported to the project site should consist of either a manufactured rock product (e.g., ¾-inch-minus crushed rock from a permitted rock quarry) or must be free of contaminants at concentrations exceeding DEQ CFSLs. It is the contractor's responsibility to ensure all

imported fill material meets these criteria and provide the owner with the imported origin information and accompanying documentation demonstrating the material meets DEQ CFSLs if not using a manufactured rock product. In addition, if evidence of contamination is observed in imported fill material, the contractor should reject the imported backfill and identify an alternate source. Also, material imported as structural backfill should be evaluated and approved by the geotechnical engineer before placement on the project site.

6.8 CONTRACTOR REPORTING REQUIREMENTS

The contractor is responsible for keeping a detailed daily record of all petroleum-contaminated soil excavation, stockpiling, export, and disposal. This includes the purpose, origin, destination, and volume of soil that is (1) loaded and hauled to the approved off-site disposal sites, (2) re-used on site, or (3) transported to temporary soil stockpile locations. The contractor is responsible for preparing a daily field report for distribution to representatives of the owner that identifies the number of truckloads of soil transported off site and daily tonnage for each disposal location. All soil excavation, handling, and disposal activities should be documented in daily field reports by the contractor.

7.0 UNFORESEEN CONDITIONS

In the event that undocumented petroleum contamination or other potentially hazardous conditions are encountered that are not addressed in this SMP, the excavation contractor shall cease work and notify representatives of the owner. The excavation contractor will then barricade or otherwise isolate the area and avoid filling the area until authorized to do so by representatives of the owner, who will determine the appropriate course of action to assess potential unknown conditions encountered during excavation. The earthwork contractor shall not replace any known or suspected contaminated soil in any excavation area without prior approval by representatives of the owner.

In the event a UST is encountered during construction, the contractor should cease work in the area of the discovery and notify the property owner so the UST can be decommissioned by a licensed UST service provider in accordance with current DEQ rules and regulations. If contaminated soil is encountered in the vicinity of a UST during construction, it should be managed in accordance with the protocol established in this SMP. Additional soil sampling and characterization of potentially contaminated soil may be necessary.

8.0 ASSUMPTIONS AND LIMITATIONS

This SMP is designed to provide the project team with guidance for the proper handling and management of potentially contaminated soil. This document is intended to be used as a general overview document for the excavation contractors and the project team during the earthwork portions of the project.

As discussed in Section 5.0, the owner, the operator, or the contractor must prepare and implement during the project a site-specific HCP. The HCP fulfills “worker right to know” requirements (29 CFR 1926.59). A copy of the HCP must be submitted to the owner prior to beginning work on the project. During work on the project, the HCP must be posted at the

project site. The contractor is responsible for notifying subcontractors of pertinent environmental conditions. Subcontractors may either adopt the contractor's HCP or prepare their own HCP. This document should be used in conjunction with, not in place of, the HCP and the project specifications. Each contractor and subcontractor is responsible for the safety of its employees, including compliance with applicable OSHA regulations and compliance with all specifications in the technical specifications manual for the project. In addition to implementation of an HCP, the contractor is responsible for preparation and implementation of a site-specific HSP to ensure adequate protection for their workers while on site.

♦ ♦ ♦

We appreciate the opportunity to work with you on this project. Please contact us if you have any questions regarding this SMP.

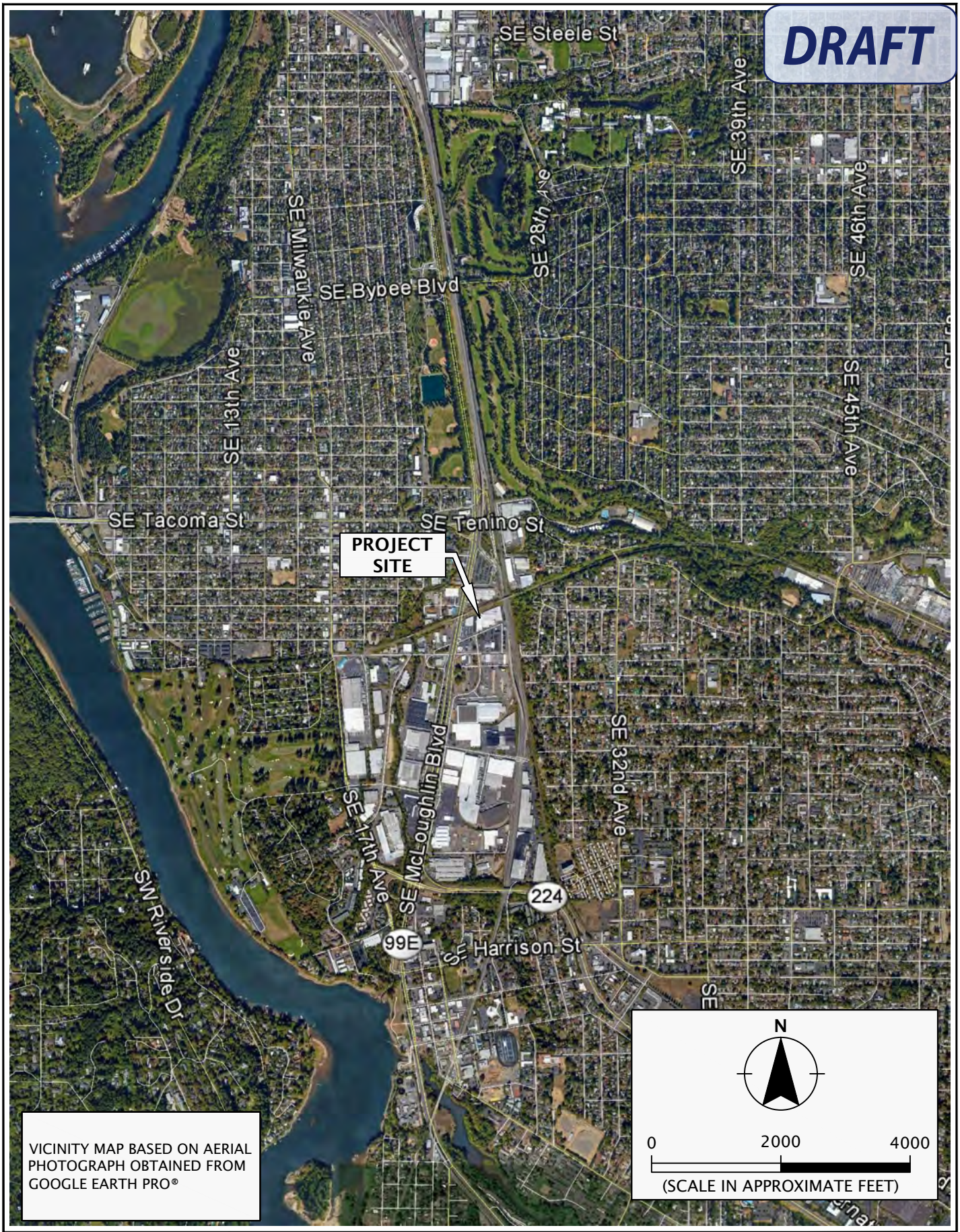
Sincerely,

NV5

Krysta Krippaehne-Stein, E.I.T.
Environmental Staff

Colby R. Hunt, C.H.M.M.
Principal

FIGURES



NV5	SEMOORES-1-02	**VICINITY MAP**	
	FEBRUARY 2022	2415 SE MOORES SITE MILWAUKIE, OR	**FIGURE 1**

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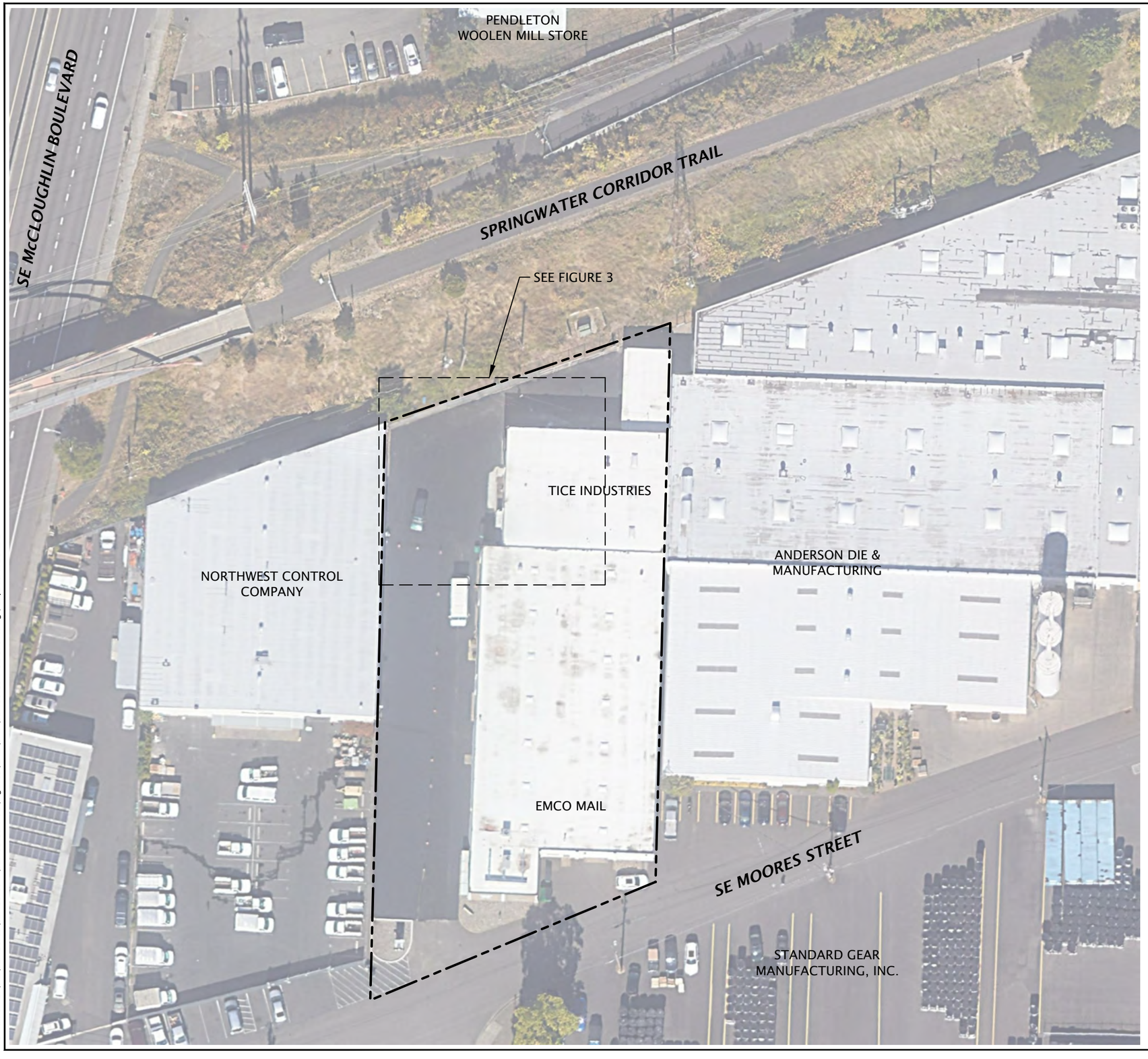

DRAFT

LEGEND:

PROJECT SITE BOUNDARY

N

0 50 100

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®, OCTOBER 20, 2020

SITE PLAN

2415 SE MOORES SITE
MILWAUKIE, OR

FIGURE 2

SEMOORES-1-02

FEBRUARY 2022

NV5

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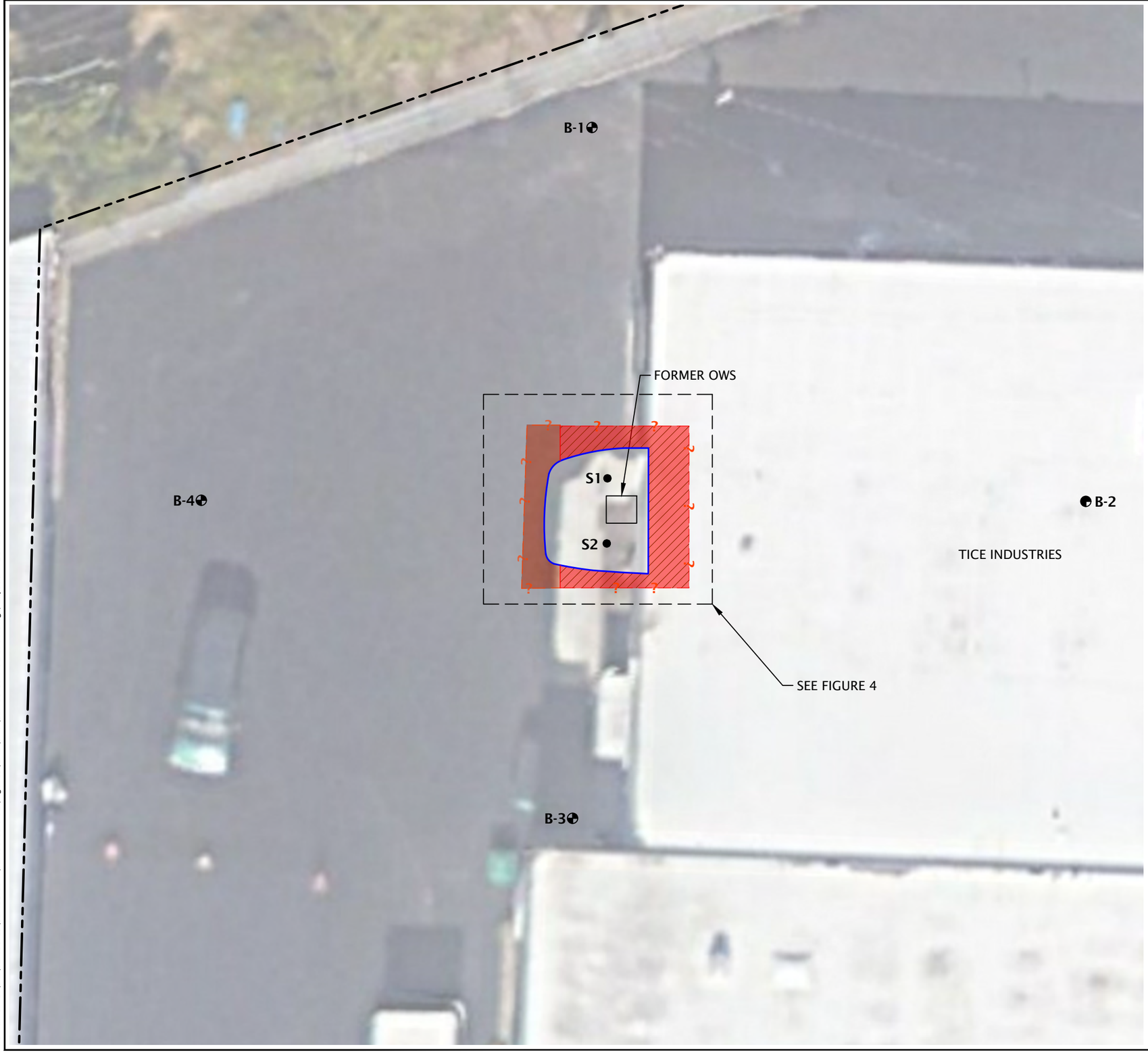

LEGEND:

- PROJECT SITE BOUNDARY
- B-1 BORING (K&S ENVIRONMENTAL, 2020)
- S1 BORING (K&S ENVIRONMENTAL, 2020)
- LIMITS OF REMEDIAL EXCAVATION
- AOC
- AOI

NOTE:
SOIL REPRESENTED BY S1 AND S2 WAS REMOVED DURING REMEDIAL ACTIONS.

N

0 10 20

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®, OCTOBER 20, 2020

SITE PLAN DETAIL - OWS

FIGURE 3

2415 SE MOORES SITE
MILWAUKIE, OR

SEMOORES-1-02

FEBRUARY 2022

NV5

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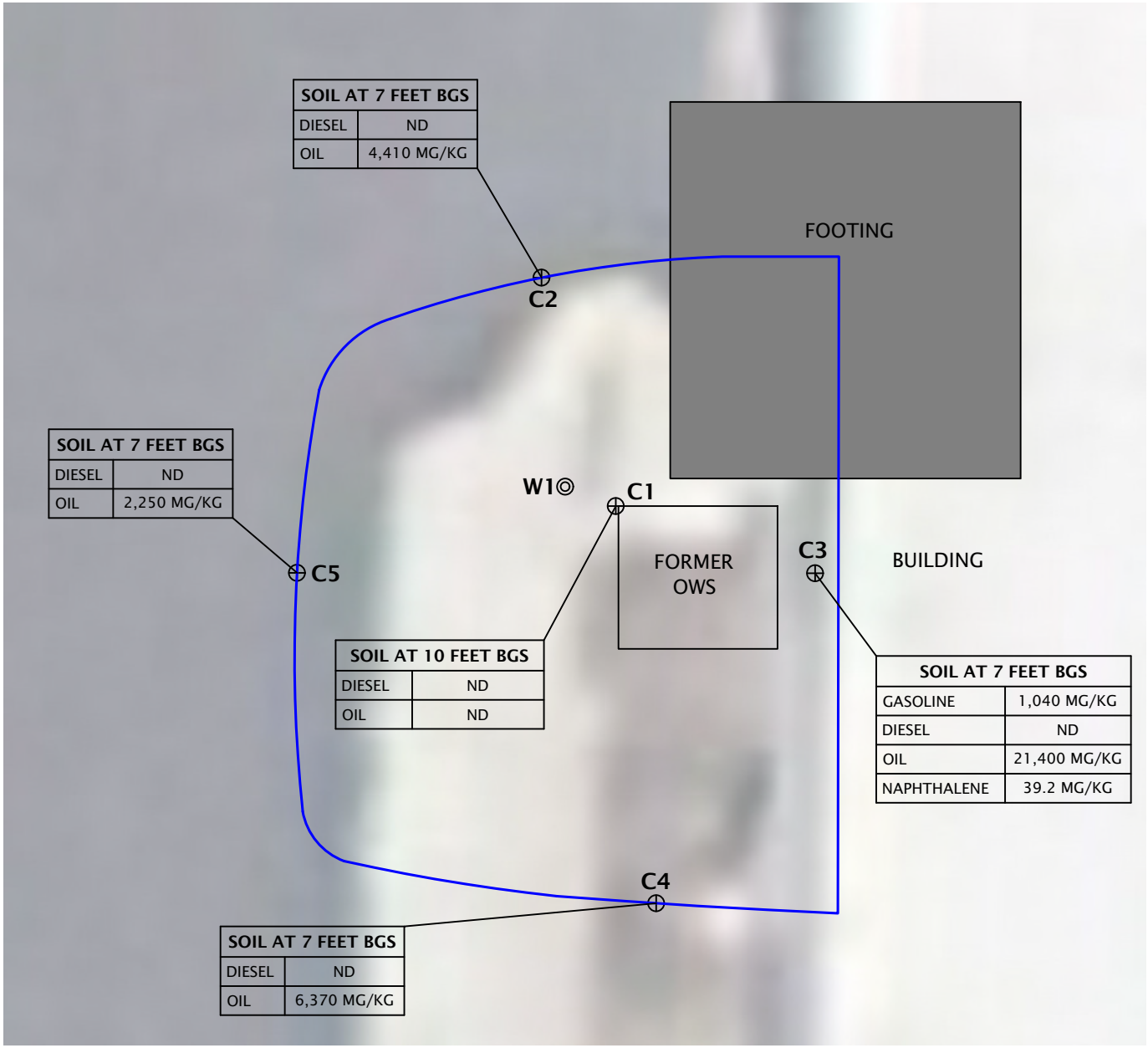
DRAFT



LEGEND:

- C1 ⊕ CONFIRMATION SOIL SAMPLE (K&S ENVIRONMENTAL, 2020)
- W1 ◎ GROUNDWATER SAMPLE (K&S ENVIRONMENTAL, 2020)
- LIMITS OF REMEDIAL EXCAVATION

N

0 3 6

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®, OCTOBER 20, 2020

NV5	SEMOORES-1-02	**SITE PLAN DETAIL - CONFIRMATION SOIL SAMPLES**
	FEBRUARY 2022	2415 SE MOORES SITE MILWAUKIE, OR
		FIGURE 4

TABLES

TABLE 1
Summary of Soil Sample Chemical Analytical Results
Petroleum Hydrocarbons
2415 SE Moores Site
2401 - 2415 SE Moores Street
Milwaukie, Oregon

Sample I.D.	Location	Sample Depth (feet BGS)	Sample Date	Hydrocarbon Identification Method NWTPH-HCID (mg/kg)			Gasoline-Range Hydrocarbons Method NWTPH-Gx (mg/kg)	Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (mg/kg)	
				Gasoline-Range	Diesel-Range	Oil-Range		Diesel-Range	Oil-Range
S1	North of OWS	6	05/12/20	**DET**	ND	**DET**	--	--	--
S2	South of OWS	6	05/12/20	**DET**	ND	**DET**	**48.7**	270 U	**4,410**
S3	South of OWS	9	05/12/20	--	--	--	**28.1**	**54.5**	**2,890**
C1	Base of remedial excavation	10	06/01/20	--	--	--	--	25.0 U	50.0 U
C2	North sidewall of remedial excavation	7	06/01/20	--	--	--	--	1,020 U	**19,300**
C3	East sidewall of remedial excavation	7	06/01/20	--	--	--	**1,040**	1,020 U	**21,400**
C4	South sidewall of remedial excavation	7	06/01/20	--	--	--	--	270 U	**6,370**
C5	West sidewall of remedial excavation	7	06/01/20	--	--	--	--	25.3 U	**2,250**
TS1	Boring B-1; north of OWS	8	06/22/20	--	--	--	--	26.3 U	52.5 U
TS2	Boring B-2; east of OWS	8	06/22/20	--	--	--	--	26.3 U	52.5 U
TS3	Boring B-3; south of OWS	8	06/22/20	--	--	--	--	25.1 U	50.2 U
TS4	Boring B-4; west of OWS	8	06/22/20	--	--	--	--	26.1 U	52.2 U
DEQ Generic RBCs[1]									
Soil Ingestion, Dermal Contact, and Inhalation									
Construction Worker				NE	NE	NE	9,700	4,600	NE
Excavation Worker				NE	NE	NE	>Max	>Max	NE
Volatilization to Outdoor Air									
Occupational				NE	NE	NE	69,000	>Max	NE
Vapor Intrusion into Buildings									
Occupational				NE	NE	NE	>Max	>Max	NE
DEQ-Calculated Site-Specific TPH RBC for *Soil Ingestion, Dermal Contact, and Inhalation*									
Construction Worker				NE	NE	NE	4,600		
Excavation Worker				NE	NE	NE	>Max		
DEQ CFSLs[2]				NE	NE	NE	31	1,100	NE

Notes:
1. DEQ Generic RBCs dated May 2018
2. DEQ CFSLs dated February 21, 2019
DET: detected at a concentration greater than the reporting or detection limit shown
>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
ND: not detected at concentrations greater than the reporting or detection limit shown
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Gray shading indicates analyte detection at a concentration greater than DEQ CFSLs.
Orange shading indicates analyte detection at a concentration greater than applicable DEQ RBCs.
--: not analyzed

TABLE 2
Summary of Soil Sample Chemical Analytical Results
PAHs
2415 SE Moores Site
2401 - 2415 SE Moores Street
Milwaukie, Oregon

Sample I.D.	Location	Sample Depth (feet BGS)	Sample Date	PAHs EPA Method 8270E SIM (mg/kg)															
				Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
C3	East sidewall of remedial excavation	7	06/01/20	0.518 U	0.518 U	**0.550**	**1.11**	**0.656**	**0.917**	0.518 U	**0.690**	**0.658**	0.518 U	**2.09**	**0.549**	0.518 U	**26.1**	**2.56**	**2.54**
DEQ Generic RBCs[1]																			
Soil Ingestion, Dermal Contact, and Inhalation																			
Construction Worker				21,000	NE	110,000	170	17	170	1,700	NE	17,000	17	10,000	14,000	170	580	NE	7,500
Excavation Worker				590,000	NE	>Max	4,800	490	4,900	49,000	NE	490,000	490	280,000	390,000	4,900	16,000	NE	210,000
Volatilization to Outdoor Air																			
Occupational				>Max	NE	>Max	>Csat	NV	NV	NV	NE	NV	NV	NV	>Max	NV	83	NE	>Max
Vapor Intrusion into Buildings																			
Occupational				>Max	NE	>Max	>Csat	NV	NV	NV	NE	NV	NV	NV	>Max	NV	83	NE	>Max
DEQ CFSLs[2]				0.25	120	6.8	0.73	0.11	1.1	11	25	3.1	0.11	10	3.7	1.1	0.077	5.5	10

Notes:
1. DEQ Generic RBCs dated May 2018
2. DEQ CFSLs dated February 21, 2019
>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present.
>Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.
NV: chemical is considered non-volatile
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ CFSLs.

TABLE 3
Summary of Soil Sample Chemical Analytical Results
VOCs
2415 SE Moores Site
2401 - 2415 SE Moores Street
Milwaukie, Oregon

Sample I.D.	Location	Sample Depth (feet BGS)	Sample Date	VOCs[1] EPA Method 8260D (mg/kg)												
				n-Butylbenzene	sec-Butylbenzene	Ethylbenzene	Isopropylbenzene	4-Isopropyltoluene	Naphthalene	n-Propylbenzene	PCE	Toluene	1,2,4-TMB	1,3,5-TMB	m,p-Xylenes	o-Xylenes
S1	North of OWS	6	05/12/20	0.0742 U	0.0742 U	0.0371 U	0.0742 U	0.0742 U	0.148 U	0.0371 U	0.0371 U	0.0742 U	0.0742 U	0.0742 U	0.0742 U	0.0371 U
S2	South of OWS	6	05/12/20	**0.141**	0.0734 U	0.0367 U	0.0734 U	0.0734 U	**0.419**	**0.088**	0.0367 U	0.0734 U	**0.698**	**0.208**	**0.225**	**0.101**
C3	East sidewall of remedial excavation	7	06/01/20	**3.62**	**0.286**	**2.26**	**0.243**	**0.251**	**39.2**	**1.20**	**0.0856**	**2.07**	**10.9**	**2.85**	**12.0**	**4.33**
DEQ Generic RBCs[2]																
Soil Ingestion, Dermal Contact, and Inhalation																
Construction Worker				NE	NE	1,700	27,000	NE	580	NE	1,800	28,000	2,900	2,900	20,000	
Excavation Worker				NE	NE	49,000	750,000	NE	16,000	NE	50,000	770,000	81,000	81,000	560,000	
Volatilization to Outdoor Air																
Occupational				NE	NE	160	>Csat	NE	83	NE	>Csat	>Csat	>Csat	>Csat	>Csat	
Vapor Intrusion into Buildings																
Occupational				NE	NE	17	>Csat	NE	83	NE	36	>Csat	>Csat	>Csat	>Csat	
DEQ CFSLs[3]				190	350	0.22	96	NE	0.077	72	0.18	23	10	11	1.4	

Notes:
1. Only VOCs detected during investigations are listed.
2. DEQ Generic RBCs dated May 2018
3. DEQ CFSLs dated February 21, 2019
>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ CFSLs.

TABLE 4
Summary of Soil Sample Chemical Analytical Results
RCRA 8 Leachable Metals
2415 SE Moores Site
2401 - 2415 SE Moores Street
Milwaukie, Oregon

Sample I.D.	Location	Sample Depth (feet BGS)	Sample Date	RCRA 8 Leachable Metals EPA Methods 1311/6020A (ICP-MS) (mg/L)							
				Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
S1	North of OWS	6	05/12/20	0.100 U	5.00 U	0.100 U	0.100 U	0.0500 U	0.00700 U	0.100 U	0.100 U
S2	South of OWS	6	05/12/20	0.100 U	5.00 U	0.100 U	0.100 U	0.0500 U	0.00700 U	0.100 U	0.100 U
C3	East sidewall of remedial excavation	7	06/01/20	0.100 U	5.00 U	0.100 U	0.100 U	0.0500 U	0.00700 U	0.100 U	0.100 U
DEQ Generic RBCs[1]											
Soil Ingestion, Dermal Contact, and Inhalation											
Construction Worker				NE	NE	NE	NE	NE	NE	NE	NE
Excavation Worker				NE	NE	NE	NE	NE	NE	NE	NE
Volatilization to Outdoor Air											
Occupational				NE	NE	NE	NE	NE	NE	NE	NE
Vapor Intrusion into Buildings											
Occupational				NE	NE	NE	NE	NE	NE	NE	NE
EPA TCLP Limits[2]				5.0	100.0	1.0	5.0	5.0	0.2	NE	5.0

Notes:
1. DEQ Generic RBCs dated May 2018
2. Analytes exceeding the maximum leachable limits are defined as toxicity characteristic hazardous waste.
U: Not detected. Reporting or detection limit shown.

TABLE 5
Summary of Soil Sample Chemical Analytical Results
PCBs
2415 SE Moores Site
2401 - 2415 SE Moores Street
Milwaukie, Oregon

Sample I.D.	Location	Sample Depth (feet BGS)	Sample Date	PCBs EPA Method 8082A (mg/kg)						
				Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
C3	East sidewall of remedial excavation	7	06/01/20	0.0298 U	0.0492 U	0.0751 U	0.0414 U	0.0453 U	0.0233 U	0.0130 U
DEQ Generic RBCs[1]										
Soil Ingestion, Dermal Contact, and Inhalation										
Construction Worker				4.9						
Excavation Worker				140						
Volatilization to Outdoor Air										
Occupational				>Csat						
Vapor Intrusion into Buildings										
Occupational				>Csat						
DEQ CFSLs[2]				1.1	0.0048	0.0048	0.041	0.0073	0.041	0.24

Notes:
1. DEQ Generic RBCs dated May 2018
2. DEQ CFSLs dated February 21, 2019
>Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present.
U: Not detected. Reporting or detection limit shown.