

State of Oregon  
Department of Environmental Quality

Memorandum

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**Date:** July 2, 2024

**To:** FILE

**Through:** Brad Shultz, Manager  
Western Region Environmental Cleanup

Bruce Scherzinger, RG, Lead Worker  
Western Region Environmental Cleanup

**From:** Sarah Eagle, Project Manager  
Western Regional Environmental Cleanup

**Subject:** Larsen Property, LUST # 36-22-0670; Staff Memorandum in support of a No Further Action determination

This document presents the basis for the Oregon Department of Environmental Quality's (DEQ's) recommended No Further Action (NFA) determination for the Larsen Property, in Grand Ronde. As discussed in this report, contaminant concentrations in soil and groundwater are below acceptable risk levels.

The proposed NFA determination meets the requirements of Oregon Administrative Rules Chapter 340, Division 122, Sections 0205 to 0360 and ORS 465.200 through 465.455.

The proposal is based on information documented in the administrative record for this site. A copy of the administrative record index is presented at the end of this report.

## 1. BACKGROUND

### Site location.

The site's location can be described as follows:

- Address: 24716 SW Grand Ronde Rd, Grand Ronde, Oregon.
- Latitude 45.0816° North, longitude 123.6146° West
- Tax lot(s) 1500, Township 6 South, Range 8 West, Section 1

### Site setting.

The site is a 7.66-acre lot located north of Oregon Route 22 in Yamhill County. Agency Creek flows along the eastern boundary of the site. Site structures include a residence, barn, woodshed, and paddock. Adjacent properties include farmland to the east, a residence to the north, and a vacant property to the south. Zoning at the site and adjacent properties is rural residential.

### Physical setting.

The site is located at approximately 378 feet above sea level and slopes slightly to the west/southwest. Surface sediments are alluvial deposits consisting primarily of sand and silt, with minor gravel. Soils are underlain by marine sedimentary rock including mudstone and sandstone of the Nestucca Formation.

Nearby surface water includes Agency Creek, located near the western property boundary. Depth to groundwater was observed at depths between 15-17 feet bgs during push probe installation, however, during decommissioning of the underground storage tank (UST) groundwater was encountered at 6.5 feet bgs, likely as a perched water table. Groundwater flow direction is anticipated to be west/southwest towards the direction of Agency Creek.

#### **Site history.**

The site has historically been used for residential and agricultural purposes. The residential building on site dates to 1930. Installation of the UST on site occurred circa 1930 and ceased to be actively utilized in the 1960s. The site is currently vacant.

## **2. BENEFICIAL LAND AND WATER USE DETERMINATIONS**

#### **Land use.**

There is no current use of the site nor the downgradient property, to the southwest. Both properties are owned by the Confederated Tribes of the Grand Ronde Community. Future use is anticipated to be for a community meeting space and no longer for residential occupancy.

#### **Groundwater use.**

According to the Oregon Water Resources Department database, there are a few domestic wells within the same section as the site, but the exact location of the wells couldn't be determined based on the historical records. However, water supply by the Grand Ronde Water Association was confirmed for the site. The property adjacent to the site to the southwest, presumed downgradient, does not have an active drinking water connection due to it being vacant. It was confirmed with the Facilities Manager of the Confederated Tribes of Grand Ronde that groundwater is not currently used, nor planned, for either the subject site or the adjacent property.

#### **Surface water use.**

The nearest surface water bodies include Agency Creek at 0.13 miles from the decommissioned UST and an unnamed tributary of Agency Creek at 0.05 miles from the decommissioned UST.

Stormwater on the site not actively manage due to the rural nature of the area. Infiltration of stormwater is expected for vegetated areas of the site as well as runoff from impervious surfaces.

## **3. INVESTIGATION AND CLEANUP WORK**

During the investigation in support of the development of a Phase II Environmental Site Assessment by Hahn and Associates, Inc., petroleum contaminated soils were observed near the UST on site in August 2022, triggering reporting to DEQ. The investigation near the UST

consisted of seven soil borings with temporary well points established in two of the borings. See Figure 3 for locations of borings from the initial investigation.

In January 2023, UST decommissioning was initiated. The UST contained water and soil in situ; tank contents and rinsate from pressure-washing the tank were provided to Oil Re-Refining Company (ORRCO) for disposal. Twelve soil grab samples were taken in January and February 2023, during the course of the decommissioning and removal of petroleum contaminated soils (PCS). In sum, 19.61 tons of PCS were removed, to a maximum depth of approximately 8.5 ft bgs, and disposed of at Hillsboro Landfill. During excavation work, groundwater accumulated in the excavation basin and 1,124 gallons of water were pumped and disposed of by ORRCO. See Figure 2 for the location of soil grab samples as well as the area of excavation. One sub-slab soil vapor sample was also taken near the onsite residence after cleanup activities were completed.

Data from the initial borings in 2022 included laboratory analysis of groundwater and soil for diesel and gasoline range total petroleum hydrocarbons (TPH-D and TPH-G, respectively), VOCs, PAHs, and limited metals. Subsequent grab soil sampling in 2023 included analysis for TPH-D, TPH-G, residual range petroleum hydrocarbons, BTEX (Benzene, Toluene, Ethylbenzene, Xylenes), and naphthalene. The sub-slab soil vapor sample from beneath the residential structure onsite was analyzed for TPH-G and benzene.

#### **Nature and extent of contamination.**

Soil and groundwater contamination was identified on site. The contamination consisted of gasoline and diesel range petroleum hydrocarbons and associated constituents including BTEX and naphthalene. Soil with the highest concentrations of contaminants of interest were removed. Residual soil remaining on site consists of low concentrations of TPH-G and BTEX at depths of approximately 7-9 ft bgs. Groundwater sampling revealed TPH-D and detectable concentrations of PAHs from a single boring within the barn structure on site, however, a groundwater sample taken from a boring closer to the UST did not detect contamination of any kind.

## **4. RISK EVALUATION**

#### **Conceptual site model.**

To evaluate human exposure to residual chemical contamination requires an assessment of the type and extent of that exposure. This is based on current and reasonably likely future site use. DEQ publishes risk-based concentrations (RBCs) for contaminants commonly encountered, for different types of exposure scenarios. These RBCs are conservative estimates of protective levels of contaminants in soil, groundwater and air. Table 1 shows potential exposure pathways and receptors for this site. Based on this, applicable RBCs are identified and used for risk screening.

### CONCEPTUAL SITE MODEL TABLE

**Table 1. Identification of applicable RBCs, based on pertinent pathways and receptors**

|             | Pathway                                   | Receptor                             |                      |                  |                                                                                                                                                    |
|-------------|-------------------------------------------|--------------------------------------|----------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
|             |                                           |                                      | Is pathway complete? | Is RBC Exceeded? | Comments                                                                                                                                           |
| Soil        | Ingestion, Dermal Contact, and Inhalation | Residential and/or Urban Residential | No                   | N/A              | Contamination is greater than 3 ft bgs.                                                                                                            |
|             |                                           | Occupational                         | No                   | N/A              | Contamination is greater than 3 ft bgs.                                                                                                            |
|             |                                           | Construction Worker                  | Yes                  | No               |                                                                                                                                                    |
|             |                                           | Excavation Worker                    | Yes                  | No               |                                                                                                                                                    |
|             | Volatilization to Outdoor Air             | Residential and/or Urban residential | Yes                  | No               |                                                                                                                                                    |
|             |                                           | Occupational                         | Yes                  | No               |                                                                                                                                                    |
|             | Leaching to Groundwater                   | Residential and/or Urban residential | No                   | N/A              | Groundwater not utilized; community water service available.                                                                                       |
|             |                                           | Occupational                         | No                   | N/A              | Groundwater not utilized; community water service available.                                                                                       |
| Groundwater | Ingestion & Inhalation from Tap Water     | Residential and/or Urban residential | No                   | N/A              | Groundwater not utilized; community water service available.                                                                                       |
|             |                                           | Occupational                         | No                   | N/A              | Groundwater not utilized; community water service available.                                                                                       |
|             | Vapor Intrusion into Buildings            | Residential                          | No                   | N/A              | Site is not used for residential purposes at present or expected to in the future. No residential structures with 30 feet of source.               |
|             |                                           | Commercial                           | Yes                  | No               |                                                                                                                                                    |
|             | Groundwater in Excavation                 | Occupational                         | Yes                  | No               |                                                                                                                                                    |
| Soil Vapor  | Vapor Intrusion into Buildings            | Residential                          | No                   | N/A              | Site is not used for residential purposes at present or expected to in the future. No residential structures with 30 feet of source.               |
|             |                                           | Commercial                           | Yes                  | No               |                                                                                                                                                    |
| Ecological  |                                           | Terrestrial & Surface Water          | No                   | N/A              | Contamination not at surface and not expected to interact with surface water or aquatic sediments. All analytes below ecological screening levels. |

## Contaminant concentrations.

**Table 2. Residual Concentrations of Contaminants of Interest**

| Contaminant of Interest | Date of Sampling | Maximum Observed Residual Concentration | Comment                                                                         |
|-------------------------|------------------|-----------------------------------------|---------------------------------------------------------------------------------|
| <b>Soil</b>             |                  |                                         |                                                                                 |
| Gasoline                | 8/11/2022        | 84.8 mg/kg                              |                                                                                 |
| Diesel                  | 8/11/2022        | 70.6 mg/kg                              |                                                                                 |
| Residual range          | 8/11/2022        | 81.5 mg/kg                              |                                                                                 |
| VOCs                    | 2/13/2023        | <1.89 mg/kg                             |                                                                                 |
| PAHs                    | 8/11/2022        | <0.0179 mg/kg                           | Fluorene, plus other PAHs at lower concentrations. No applicable RBCs exceeded. |
| <b>Groundwater</b>      |                  |                                         |                                                                                 |
| Gasoline                | 8/11/2022        | ND <sup>1</sup>                         |                                                                                 |
| Diesel                  | 8/11/2022        | 450 µg/L                                |                                                                                 |
| Residual range          | 8/11/2022        | ND <sup>1</sup>                         |                                                                                 |
| VOCs                    | 8/11/2022        | ND <sup>1</sup>                         |                                                                                 |
| PAHs                    | 8/11/2022        | <0.167 µg/L                             | Pyrene, plus other PAHs at lower concentrations. No applicable RBCs exceeded.   |
| <b>Soil Vapor</b>       |                  |                                         |                                                                                 |
| Gasoline                | 3/7/2023         | ND <sup>1</sup>                         |                                                                                 |
| Benzene                 | 3/7/2023         | ND <sup>1</sup>                         |                                                                                 |

Notes:

<sup>1</sup> ND-Not detected.

The residual concentrations from Table 2 describe the highest concentrations in each media type that remains onsite. Most of the grab samples from January and February 2023 were over excavated, which is why the majority of the higher concentration samples are from 2022—these samples were taken further from the UST, and while there remains low levels of contamination there, the contamination wasn't significant enough to warrant additional soil removal.

The closure report submitted by Soil Solution Environmental Services reports groundwater data from the initial investigation by Hahn & Associates in August 2022, from boring P-1, located in an area that was estimated to be over excavated. The groundwater sample taken from this boring was non-detect for all contaminants of interest. However, during the initial investigation by Hahn & Associates, another groundwater sample was taken from boring P-4, located beneath the barn structure on site and outside of the excavation area. The groundwater contaminant concentrations reported in Table 2 are from boring P-4.

A sub-slab soil vapor sample was taken beneath the onsite residential structure. Table 2 contains those results.

### **Human health risk.**

Based on the conceptual site model, utilizing information about the current and reasonably likely use of the site and the adjacent, downgradient property, exposure pathways are limited. The availability of community water supply prevents exposure via ingestion and inhalation from tap water exposure pathway. Residual soil contamination exists at subsurface depths exceeding three feet. And vapor intrusion into buildings for the residential scenario is not a viable pathway due to the lack of proximal residential structures. No RBCs were exceeded for any complete exposure pathway and therefore no unacceptable risks are considered to remain.

### **Ecological risk.**

No ecological risks have been identified or are anticipated. The contamination is not at the surface and though Agency Creek is directly adjacent to the site and would contain ecological habitat, migration of contamination that distance is not anticipated.

## **5. RECOMMENDATION**

Following removal of contamination and based on sample results for soil, groundwater and soil gas, acceptable risk levels are not exceeded, and a No Further Action determination is recommended for this site. The No Further Action determination should be recorded in DEQ's underground storage tank database (LUST No. 36-22-0670).

## **6. ADMINISTRATIVE RECORD**

36-22-0670Larsen20DayReport9-9-2022.pdf

36-22-0670ClosureReport5-5-2023

2022-08-22\_36-22-0670\_Larsen Property OLPRR Review Screen with comments

## **7. ATTACHMENTS**

1. Vicinity map
2. Site map
3. Map of initial borings from 2022





Figure 1. Vicinity Map.

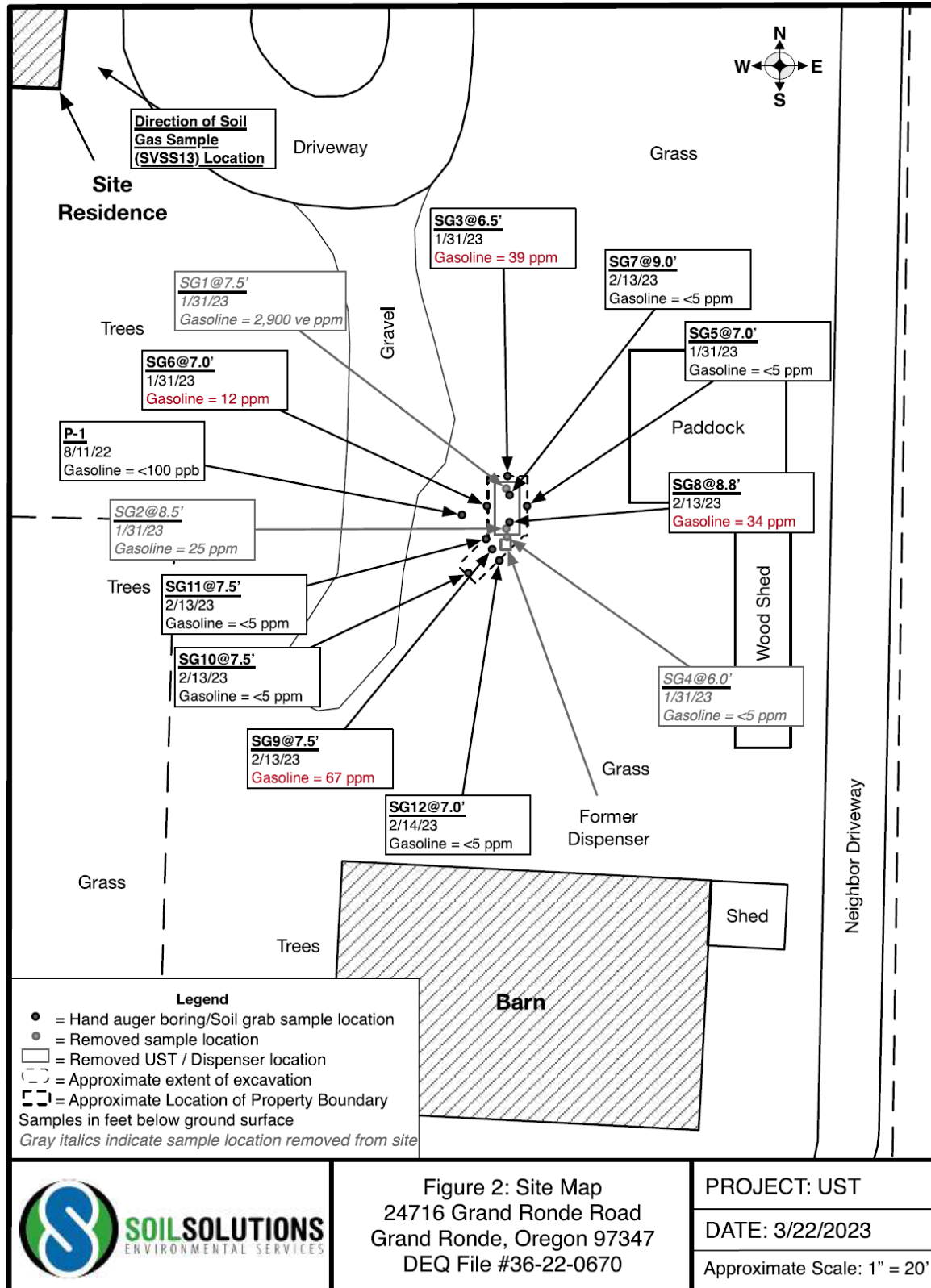


Figure 2. Site Map.





Figure 3. Map of initial borings from 2022.