

State of Oregon
Department of Environmental Quality

Memorandum

Date: August 14, 2024

To: FILE

Through: Brad Shultz, Manager
Western Region Environmental Cleanup

Don Hanson, RG, Lead Worker
Western Region Environmental Cleanup

From: Sarah Eagle, Project Manager
Western Region Environmental Cleanup

Subject: 28th & South M Property, LUST # 20-10-1168; 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 28th & South M Property in Springfield. 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 360, 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: 2795 South M Street, Springfield Oregon.
- Latitude 44.0338° North, longitude 122.9878° West
- Tax lot(s) 2300, Township 18 South, Range 3 West, Section 1

Site setting.

The site is a 6.08-acre lot located off South M St. in south-central Springfield, north of the Middle Fork Willamette River. The site contains a single structure and gravel graded areas are used for storage of equipment and materials. The site is zoned Public Land & Open Space by the city of Springfield.

Physical setting.

The site is approximately 453 feet above sea level and is generally flat with slight sloping to the south. Depth to groundwater during January and February 2024 groundwater sampling events was approximately 10 feet bgs. Geology consists of unconsolidated sediments, primarily sand and gravel. Groundwater flow direction is variable due to the proximity of multiple municipal water supply wells. The Middle Fork Willamette River is approximately 0.25 miles from the site and there is a perennial-appearing creek or former millrace that runs along the east of the property and to the south of it.

Site history.

No site history has been provided but based on the location and historical structures at the site, it appears to have been used for rural residential and agricultural purposes prior to acquisition by the Springfield Utility Board (SUB). After acquiring the property, SUB has used the site to store vehicles, equipment, and materials.

2. BENEFICIAL LAND AND WATER USE DETERMINATIONS

Land use.

The property is zoned Public Land & Open Space within the city of Springfield. As it is currently owned by SUB, the zoning is anticipated to remain the same. The land use at present is for storage of equipment and materials and is anticipated to remain the same. Adjacent properties include more Public Land & Open Space to the south and east, and Agriculture-Urban Holding Area to the west and northwest, and Medium Density Residential to the northeast.

Groundwater use.

Beneficial groundwater use in the vicinity is significant. SUB has numerous municipal supply wells south of the site. Additionally, several nearby properties have wells that are likely used for domestic purposes. Municipal water is available in the area, however domestic well water use is likely due to the number of wells that have been installed in the area, including relatively recently. The site also has three domestic wells on site, but they are not used.

Surface water use.

The Middle Fork Willamette River is approximately 0.25 miles from the site and there is a perennial-appearing unnamed creek adjacent to the east and south of the site. The Middle Fork Willamette River is a source of water supply for SUB, in addition to being ecological habitat. The adjacent creek is also assumed to have beneficial use for ecological habitat.

Stormwater is not actively managed on site. Due to the general lack of impervious cover, infiltration of stormwater is expected in addition to some runoff to the unnamed tributary to the Middle Fork Willamette River.

3. INVESTIGATION AND CLEANUP WORK

Decommissioning of a 3,500-gallon diesel underground storage tank (UST) in October 2010 revealed petroleum contaminated soil (PCS) in the vicinity of the UST. At the time of

decommissioning, the UST and tank contents were disposed of, while the PCS was excavated to facilitate decommissioning and then placed back within the excavation basin. Three soil samples were taken during decommissioning and one groundwater sample was taken shortly after, with two of the three samples having detectable concentrations of diesel and/or oil range hydrocarbons and one sample had a detection of naphthalene. Soil samples were analyzed for total petroleum hydrocarbons (TPH), BTEX, and PAHs. The groundwater sample was analyzed for TPH only. See attached Figure 1 for site map at the time of decommissioning and Figure 2 for well locations.

After the decommissioning and initial investigation was completed a Soil Matrix Analysis and Checklist was completed. The Soil Matrix Analysis was completed incorrectly and underestimated the score, which erroneously indicated to the preparer that no further analysis or cleanup was needed. In 2023, the project was revisited and a Risk-Based evaluation was conducted. In response, additional groundwater monitoring was conducted in 2024 for TPH-D and BTEX at three on-site wells.

Nature and extent of contamination.

Contaminants of interest include TPH-D, BTEX, and PAHs. Affected media includes soil and potentially groundwater. The groundwater sample from 2010 did not detect any TPH. The groundwater sampling from 2024 did have detections of TPH-D, however, the data are qualified due to being reported below the laboratory reporting detection limit and also are within range of the equipment blank. It is possible that groundwater is affected by the release, however it is at such low concentration, that it is inconclusive.

Horizontal and vertical extent of contamination is expected to be limited to shallow soil in the vicinity of the former UST and potentially at very low levels in groundwater at 80 ft bgs.

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	
		Occupational	Yes	No	
		Construction Worker	Yes	No	
		Excavation Worker	Yes	No	
	Volatilization to Outdoor Air	Residential and/or Urban residential	No	N/A	
		Occupational	Yes	No	
	Leaching to Groundwater	Residential and/or Urban residential	Yes	No	Pathway assumed complete.
		Occupational	Yes	No	Pathway assumed complete
Groundwater	Ingestion & Inhalation from Tap Water	Residential and/or Urban residential	Yes	No	Pathway assumed complete.
		Occupational	Yes	No	Pathway assumed complete.
	Vapor Intrusion into Buildings	Residential	No	N/A	
		Commercial	Yes	No	
	Groundwater in Excavation	Occupational	Yes	No	
Ecological		Terrestrial & Surface Water	Yes	No	

Contaminant concentrations.

Table 2. Residual Concentrations of Contaminants of Interest

Contaminant of Interest	Date of Sampling	Maximum Observed Residual Concentration	Comment
Soil			
Diesel	11/09/2010	171 mg/kg	Lowest RBC = 260 mg/kg (ecological direct toxicity)
Oil range	11/09/2010	122 mg/kg	Lowest RBC = 260 mg/kg (ecological direct toxicity)
BTEX	11/09/2010	ND ¹	
PAHs	11/09/2010	0.0078 mg/kg	Naphthalene. Lowest RBC = 0.077 mg/kg (residential leaching to groundwater)
Groundwater			
Diesel	2/2/2024	57.9 µg/L ²	Lowest RBC = 100 µg/L (residential tap water ingestion)

Notes:

¹ ND-Not detected.

² Reported value is an estimate. Equipment blank = 56.4 µg/L

The residual concentrations from Table 2 describe the highest concentrations in each media type. All concentrations are below the lowest RBCs available, not just applicable RBCs.

Human health risk.

No RBCs were exceeded for any complete exposure pathway and therefore no unacceptable risks are considered to remain.

Ecological risk.

Residual contamination at the site should not affect the nearby creek, and concentrations observed are below the most conservative ecological RBCs.

5. RECOMMENDATION

Following removal of contamination and based on sample results for soil and groundwater 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 Your DEQ Online (YDO) database (LUST No. 20-10-1168).

6. ADMINISTRATIVE RECORD

20101013_20-10-1168_Decommm20DayReports
20101013_20-10-1168_SoilMatrix
20231130_20-10-1168_M_street Hydrocarbon results
20240426_20-10-1168_GWsamplingReport_Stamped

7. ATTACHMENTS

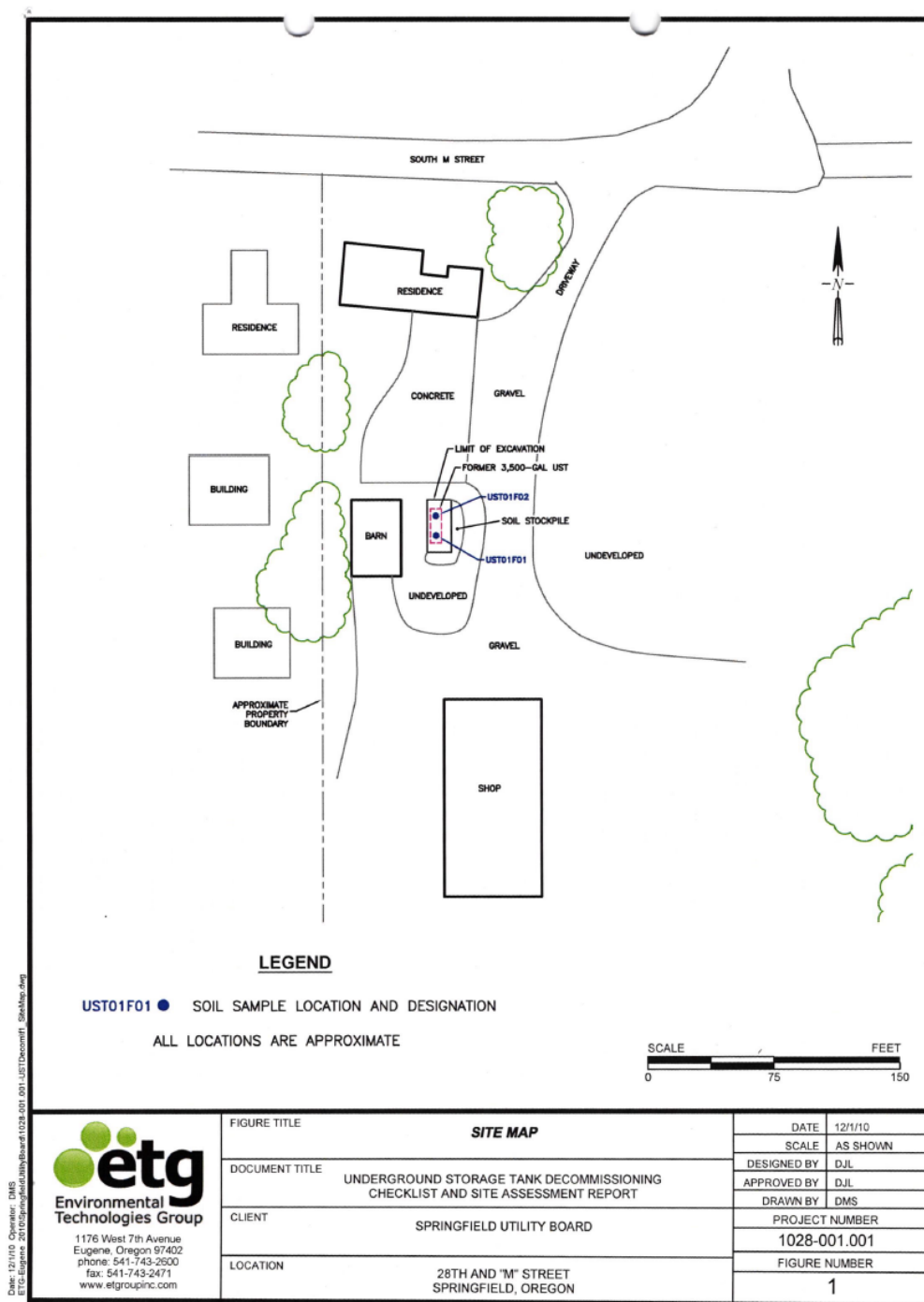


Figure 1. Site map at time of decommissioning.

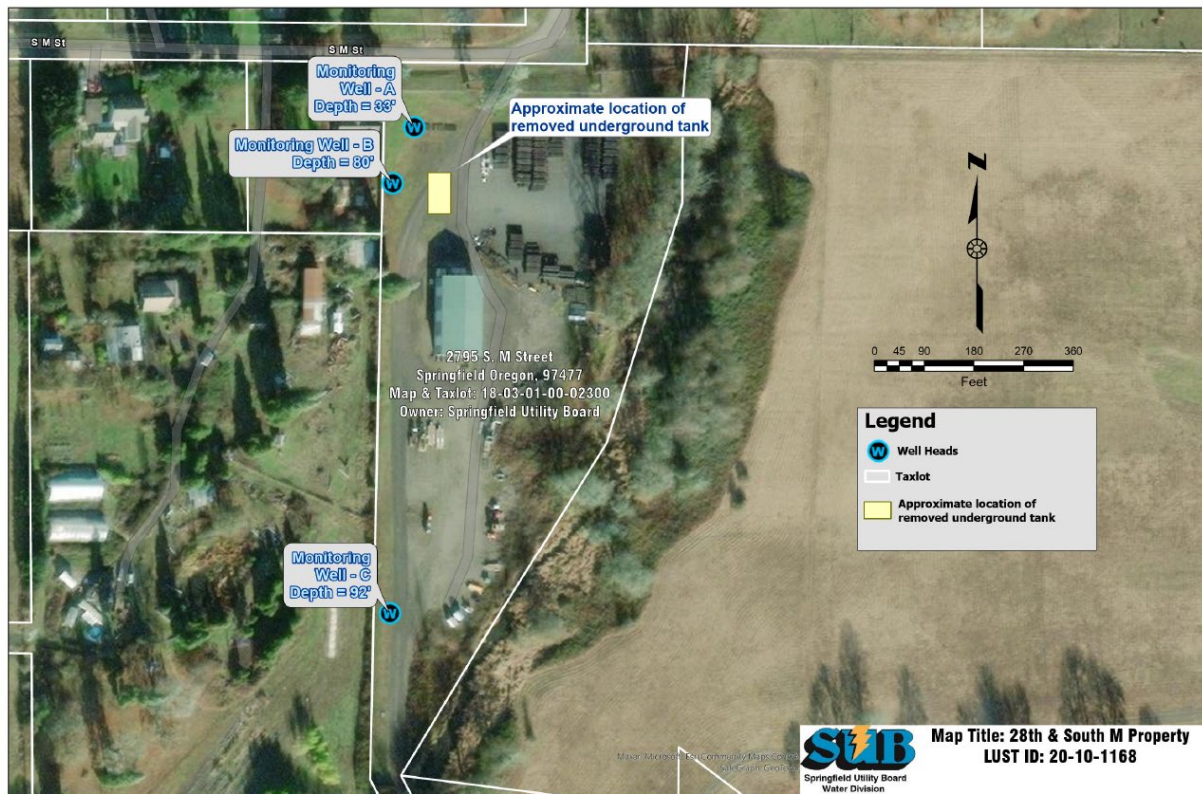


Figure 2. Current site map with well locations.