State of Oregon
Department of Environmental Quality Memorandum

Date: September 2, 2025

To: FILE

Through: Don Hanson (Lead Worker, Hydrogeologist), Brad Shultz (Manager)

From: Tina Elayer (Cleanup Project Manager)
Western Region

Subject: Glen Fogelstrom, LUST #20-20-0390; 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 Glen Fogelstrom Site (Site), in Eugene. As discussed in this report, contaminant concentrations in soil, soil gas, 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: 980 West 5th Avenue (980 W. 5th), Eugene, Oregon (Figure 1).
- Latitude 44.0543º North, longitude -123.1016º West
- Tax lot 02300, Township 17 South, Range 3 West, Section 31

Site setting.
The Property is 0.32 acre in size and comprises four buildings: a 1912-era two story house converted for commercial use on the ground floor and a residential apartment on the second floor (960 W. 5th); the Site, a single-story, 1920s-era former gas station service building (980 W. 5th) currently occupied by a fish/aquarium shop, a one story, 1938-era building divided into three commercial suites (541, 543 & 547 Blair Blvd); and a two story 1946-era garage used for storage (965 W. 5th Alley) with a residential apartment on the second floor (Figure 2). There is not currently any ground floor residential on the Property.

The Property is bordered to the north by W. 5th and single-family residences beyond; to the east by single-family residences; to the south by W. 5th Alley, beyond which is a parking lot and Blair Boulevard; to the west by Blair Boulevard, and multiple commercial properties beyond.

Physical setting.
The Site is flat and level, at an elevation of approximately 430 feet above sea level. Soils encountered at the Site generally consist of gravels with deposits of silt, clay and sand. Depth to groundwater varies seasonally and ranges in depth from 9 to 20 feet below ground surface (bgs). Shallow groundwater flow direction is north-northeast toward the Willamette River based on previous groundwater investigations at the Site.

Site history.

The northwestern building (980 W 5th Avenue) was present by 1925 and was used as an automotive fueling station from at least 1925 through the 1940s. It was used as a drive-thru restaurant from the 1950s through the mid-1980s, and for retail establishments from the mid-1980s through the present, including Bargain Mart (1980s – 1990s), a cannabis/glass pipe store (2000s – 2021), and is presently a tropical fish store. The northwestern portion of the structure has been altered over time to enclose the former service station pump island canopy area.

2. BENEFICIAL LAND AND WATER USE DETERMINATIONS

Land use.
The Site and surrounding properties to the west, east and south are currently zoned for commercial use. Directly across 5th Avenue to the north, is occupied by single family residences. Commercial properties in Eugene may be used for residential uses. Considering historical land use, surrounding land use, and location, land use is likely to remain commercial, with the possibility of residential uses. Most residential uses are anticipated to be on 2nd floor or above and not ground floor.

Groundwater Use.
The Eugene Water and Electric Board (EWEB), which obtains its water from the McKenzie River, supplies domestic water to the Site and surrounding properties.

According to the Oregon Water Resource Database, seven (7) domestic water well logs are listed for Section 31, Township 17 South, Range 3 West. No domestic water well is located within the NE ¼ of the NE ¼ of Section 31. The nearest active wells are two industrial wells located approximately 1-mile southeast and upgradient of the Site in downtown Eugene.

According to groundwater assessments in the vicinity, historic groundwater depths range between 9 to 20 feet below ground surface (bgs) depending on seasonal fluctuations. Groundwater was not encountered during underground storage tank (UST) decommissioning activities.

DEQ has determined that groundwater at and in the vicinity of this Site will not be used for domestic water supply use in the future.

Surface water use.
The closest surface water body to the Site is the Willamette River located approximately 2,500 feet north-northeast of the Site. The Site is paved for parking aside from the building footprints. Stormwater from the Site is collected through storm drains on-site as well as along Blair Street and W. 5th Avenue. The City of Eugene Public Works Department maintains the stormwater collection system in the vicinity and collected stormwater from the Site is directed to the Willamette River.

Stormwater surface flows from paved areas on the Site and discharges either to landscaped areas for infiltration, or to nearby catch basins which lead to the municipal stormwater sewer.

3. INVESTIGATION AND CLEANUP WORK

In 1990, two underground storage tanks (USTs) associated with the former gas station on the northern part of the Site (980 W. 5th Ave) were removed. There are no reports or information from this activity to describe the condition of the tanks or if contamination was encountered during the excavation at that time.

A Phase I environmental site assessment was completed by Hahn and Associates, Inc on the Property in November 2019. It was identified in the property records that not only a gas station existed on the NW corner of the Site, but a service station existed in the center of the Property associated with addresses 541-547 Blair Boulevard. The Phase I identified not only the gas station and auto repair shop but also the potential of a former heating oil tank (HOT), as recognized environmental conditions (REC) at the Property.

Based on the conclusions of the Phase I, a Phase II Environmental Site Assessment (ESA) was completed by Hahn and Associates, Inc. in 2020 at the Property. A geophysical survey was also conducted on January 28, 2020, in accessible areas of the Property to scan for the potential presence of fuel underground storage tanks (USTs), septic tanks, and tank pits. The geophysical survey identified one probable small UST with a possible fill port along the southeastern exterior of the northwestern area building. A soil boring was installed, and a soil sample (P-3) was collected from the area at 5 – 6.5 ft bgs and 12.5 - 14 ft bgs where the 'likely UST' was identified from the geophysical survey. Soil sample results from P-3 had non-detects for gasoline, diesel, and oil range hydrocarbons. In September 2021, a general contractor and representative of the property owner, utilized an excavator to dig down through the area identified as the location of the 'likely UST', to a depth of 4 ½ feet bgs. No UST, and no indication of any USTs or backfill below the grade of utilities and gravel/asphalt fill were observed.

For the PII ESA ten (10) direct-push soil borings and a single hand-auger boring were advanced at the Property. Four (4) sub-slab soil gas borings were installed, and soil gas samples (SG-1 through SG-3) were collected across the Property with one sub-slab soil gas sample (SG-4)

collected beneath the NW building (Site) associated with the gas station. One (1) soil gas sample (PRT-1) was collected due north of the former service station building located in the NW portion of the Site for a total of five (5) soil gas samples across the Property (Figure 2). The soil gas samples SG-4 and PRT-1 evaluated releases from LUST 20-20-0390 at 980 W. 5th Avenue.

No contaminant was present in any of the soil gas samples exceeding DEQ's risk-based concentrations (RBCs) for urban residential and occupational receptors in effect at the time of the 2020 Phase II ESA field activities. The extent of soil and groundwater contamination was not determined during this investigation. The vapor intrusion RBCs were updated in 2023 and again in 2025. Urban residential values were removed in the most recent VI RBC guidance. When all COCs for SG-4 and PRT-1 samples were compared to the most recently updated residential and commercial VI RBCs, there were exceedances. The naphthalene concentration in SG-4 (8.17 µg/m^3) exceeded the current residential RBC, which is 2.8 µg/m^3. The chloroform concentration in SG-4 (39.7 µg/m^3) exceeded the current residential RBC, which is 4.1 µg/m^3. The commercial RBC (18 µg/m^3) was also exceeded with a detection of 8.5 µg/m^3 . The TPH-Gx soil gas concentration in PRT-1 (492 µg/m^3) exceeded the residential RBC (300 µg/m^3) but did not exceed the current commercial RBC, which is 10,000 µg/m^3.

In June 2023, because of potential contamination migrating beneath 5th Avenue and/or Blair Blvd., DEQ requested advanced comments from the City of Eugene (city) regarding contamination affecting their right-of-way (ROW). The city provided comments with concerns about construction worker exposure to contaminants during future utility repair or replacement. The city requested additional investigations to delineate the extent of the groundwater and associated soil contamination in the adjacent public ROW to the north and west of the Site.

In 2025 the owner decided to reassess the northwestern portion of the Site, nearer to the city ROW, to further evaluate construction and excavation worker risks before conducting further investigation in the ROW. GEM (current consultant) conducted a targeted subsurface investigation and advanced three (3) direct-push borings (031125_B1 through 031125_B3) shown on Figure 2. Five (5) soil samples were collected from the borings (Table 1). A groundwater sample was also collected from boring 031125_B1.

Table 1. Soil TPH Analytical Results

Sample ID ↓	TPH-G (mg/Kg)	TPH-D (mg/Kg)	TPH-O (mg/Kg)
031125_B1-8	< 2.50	< 4.00	< 10.0
031125_B1-12	3,510	404	< 50.0
031125_B1-16	< 2.50	9.70	< 10.0
031125_B2-12	25.7	< 4.00	< 10.0
031125_B3-12	< 2.50	61.8	< 10.0
RBC_{ss}	20,000 / 9,700	14,000/4,600	None
RBC_{so}	69,000	> Max	None
RBC_{sw}	130	> Max	None

TPH: Total Petroleum Hydrocarbons
mg/Kg: milligrams per kilogram
TPH-G: TPH in the gasoline range
TPH-D: TPH in the diesel range
TPH-O: TPH in the heavy oil range
< 2.5: The compound was not detected in excess of the Method Reporting Limit (MRL) of 2.5 mg/Kg.
RBC_{ss}: Soil Ingestion, Dermal Contact, and Inhalation, Occupational/Construction Worker
RBC_{so}: Volatilization to Outdoor Air, Occupational
RBC_{sw}: Leaching to Groundwater, Occupational
None: No RBC has been promulgated for this compound and/or exposure scenario
> Max: This substance is deemed not to pose risks in this scenario

Table 1. (Retrieved from Targeted Subsurface Investigation, GEM 4/30/2025).

2025 Soil results: TPH-G was detected in soil sample 031125_B1-12, collected from 12 feet, at 3,510 mg/Kg, and a soil sample collected from 031125_B1-8 (8 feet bgs) had less than 2.50 mg/Kg of gasoline.

2025 Groundwater results: boring 031125_B1 was advanced to a terminal depth of 20 feet bgs. Groundwater was encountered in the boring at 16 feet bgs. TPH-G was detected in the sample at a concentration of 2,630 micrograms per liter (µg/L), which is well below DEQ's groundwater in excavation RBC (14,000 µg/L).

Nature and extent of contamination.

Soil

Soil samples collected from the NW corner of the Site in 2020 by Hahn and Associates, Inc. reported a single gasoline concentration of 267 mg/Kg, exceeding the vapor intrusion into buildings risk-based concentration (RBC) for urban residential receptors of 94 mg/Kg. This soil sample is representative of concentrations collected between 12.5 and 14.0 feet bgs. Additional assessment by GEM in 2025 in the NW corner detected concentrations in soil collected from 8 to 12 feet bgs ranging from non-detect to 3,510 mg/Kg. The construction worker RBC for gasoline is 9,700 mg/Kg.

Groundwater

Groundwater samples collected from the NW corner of the Site by Hahn and Associates, Inc. in February 2020 exceeded the groundwater in excavation RBCs in two samples with gasoline concentrations of 17,300 and 21,800 micrograms per Liter (µg/L). Additional groundwater assessment conducted by GEM in March 2025 found that the constituents of concern (COC) levels were attenuating from the Hahn study in 2020. The highest concentration of TPH-G was 2,630 µg/L. This result exceeds occupational vapor intrusion RBC. Soil vapor was further evaluated separately and discussed below.

Soil gas

The results of soil gas (SG) samples collected in 2020 were compared to the most current vapor intrusion (VI) RBCs. The concentration of naphthalene (8.17 µg/m^3) at sample number SG-4 exceeded the residential VI RBC of 2.8 µg/m^3 but did not exceed the commercial VI RBC of 12 µg/m^3 . The chloroform concentration in SG-4 (39.7 µg/m^3) exceeded the current residential RBC, which is 4.1 µg/m^3. The commercial RBC (18 µg/m^3) was also exceeded. The TPH-Gx concentration in PRT-1 (492 µg/m^3) exceeded the residential RBC (300 µg/m^3) but did not exceed the current commercial RBC, which is 10,000 µg/m^3.

Based on the investigations completed on soil, groundwater, and soil vapor at the Site, there appears to be a small pocket of contamination present in soil and groundwater beneath the northwestern corner of the Site, consisting mainly of gasoline range hydrocarbons.

One chemical (chloroform) exceeded both residential and commercial levels in soil gas sample SG-4. Chloroform is not a contaminant of concern for the LUST project but may be related to chlorinated drinking water or wastewater from leaking plumbing.

4. RISK EVALUATION

Conceptual site model.

To evaluate potential risk from the residual contamination at the Site, DEQ assesses all potential human and ecological points of contact (i.e. exposure pathways and receptors). That assessment is based on current and reasonably likely future Site use. There are no ecological pathways complete at the Site, but possible exposure pathways for humans that were considered are summarized in Table 2 below.

For each exposure pathway, DEQ publishes risk-based concentrations (RBCs) for contaminants of interest. These RBCs are conservative estimates of protective levels of contaminants in soil, groundwater and soil vapor. The Site soil, groundwater, and soil gas concentrations are compared to these RBCs for the complete exposure pathways to determine if there could be an unacceptable exposure to the residual contamination. Table 2 also summarizes this comparison to the RBCs.

Table 2
Conceptual Site Model and Risk Evaluation Summary

	Pathway	Receptor	Is pathway complete?	Is RBC Exceeded?	Comments
Soil	Ingestion, Dermal Contact, and Inhalation	Residential and/or Urban Residential	No	N/A	See Note 1. No soil contamination in the upper 3 feet.
		Occupational	No	N/A	
		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	Yes	See Note 2 and 3
		Occupational	No	Yes	
Groundwater	Ingestion & Inhalation from Tap Water	Residential and/or Urban residential	No	Yes	See Note 3. Ground floor residential use is currently not present, and we assume no ground floor residential use in the future.
		Occupational	No	N/A	
	Vapor Intrusion into Buildings	Residential	Yes	Yes	
		Commercial	Yes	No	
	Groundwater in Excavation	Occupational	No	No	
Soil Vapor	Vapor Intrusion into Buildings	Residential	Yes	Yes	See Note 4.
		Commercial	Yes	No	
Ecological		Terrestrial & Surface Water	No	N/A	

Table Notes:

1. The Site is currently zoned commercial and expected to stay that way well into the distant future. The City of Eugene may allow residential uses of commercially zoned properties. Additionally, contamination was not observed in shallow soils (1' – 3' bgs) that could come in contact with residential, urban residential and occupational receptors.
2. Leaching to groundwater has been determined to not be a complete exposure pathway at this Site because all properties in the vicinity are using city water, and it is unlikely that someone would install a shallow drinking water well within the area of contamination.

3. Domestic water is supplied to the Site and surrounding properties by the Eugene Water and Electric Board (EWEB). Groundwater in the vicinity of the Site is not used for drinking and is not likely to be used for this purpose in the future.
4. The soil gas (SG) concentrations collected in 2020 were compared to the recently updated vapor intrusion (VI) RBCs with chloroform exceeding both residential and commercial levels. Chloroform may be related to chlorinated drinking water or wastewater from leaking plumbing and does not appear to be a concern based on other results from the Site. The concentration of naphthalene (8.17 $\mu g/m^3$) exceeded the residential VI RBC of 2.8 $\mu g/m^3$ but did not exceed the commercial VI RBC of 12 $\mu g/m^3$. The rest of the COCs screened were all below the applicable RBCs for vapor intrusion into buildings. There is no residential use on the first floor of the buildings onsite.

Contaminant concentrations.

Groundwater.
Groundwater samples collected in 2020 from the NW corner of the Site exceeded the groundwater in excavation RBC in two samples at concentrations of 17,300 and 21,800 µg/L. All other COCs were reported at concentrations below the laboratory reporting limits or were reported below the DEQ RBCs. Additional groundwater assessment conducted by GEM in March 2025 nearer to the Property edge, and nearer to the ROW, found that the constituents of concern (COC) levels were attenuating, and concentrations were well below the groundwater in excavation RBC.

Soil gas.
Gasoline was detected in soil gas samples SG-4 and PRT-1 located near the former LUST at 980 W. 5th Avenue, BTEX were detected in both samples at low concentrations. Naphthalene was detected in SG-4 at 8.17 $\mu g/m^3$, which exceeds the residential soil gas RBC.

Chloroform was detected in all soil gas samples collected from the Property in 2020. The concentrations ranged from 0.279 ug/m^3 (PRT-1) to 138 ug/m^3 (SG-3). Those concentrations were all below the RBCs for vapor intrusion in effect at that time the samples were collected. However, when compared to the updated commercial soil gas RBC, three of the samples exceed. The source of the chloroform is unknown, and it appears to be unrelated to the LUST project.

Human health risk.
Contaminants of Potential Concern (COPCs) for human health at the Site include petroleum range hydrocarbons, VOCs and gasoline additives.

Groundwater samples collected in 2025 by GEM, nearer to the ROW, showed that the contamination is attenuating closer to the ROW, and the concentrations in groundwater there, and in the ROW, should be below the groundwater in excavation RBCs. Additionally, the groundwater beneath the Site appears to be deeper than the public and private utilities beneath Blair Blvd. and 5th Avenue (>10' bgs) during most of the year, which would limit exposure to excavation workers. Based on the 2025 groundwater data and the depth to groundwater, there

should not be any exceedances of DEQ's acceptable risk levels for construction or excavation workers in the ROW.

The residential soil gas RBC were slightly exceeded for naphthalene at the Site in 2020. Commercial RBCs were not exceeded in 2020. There is no current ground floor residential use on the Property.

The Site is supplied by municipal water so the ingestion and inhalation from tap water pathway is incomplete.

Although the three chloroform RBC exceedances in soil gas will not affect the no further action determination for closing LUST incident 20-20-0390, the property owner may want to work with a consultant to identify the source of the chloroform contamination. GEM concluded that the detection of chloroform may be related to chlorinated drinking water or wastewater from leaking plumbing. Chloroform is a probable carcinogen in humans. There is some evidence that it causes liver, kidney, and thyroid cancer in animals.

Ecological risk.
The closest surface water body to the Site is the Willamette River located north-northeast approximately 2,500 feet. The Site is covered in asphalt on the northern half of the lot as well as the office footprint on the southern portion. The Willamette River is not believed to be impacted or will not be impacted in the distant future as stormwater is collected by the City of Eugene stormwater collection system. DEQ believes that residual soil contamination located below 12 feet bgs will not reach the surface of the Site or impact the environment of the Willamette River through the city of Eugene's public storm water drainage system. The Site is part of a commercial mixed-use Property, and no habitat currently exists or will likely exist at the Site in the future, for terrestrial or aquatic habitats.

5. RECOMMENDATION

Following evaluation of analytical results for soil, soil gas, and groundwater samples collected around the former USTs and former automotive fueling station (Site), unacceptable risk levels are not exceeded at the Site and a No Further Action (NFA) determination is recommended. This recommendation is based on our assumption that land uses will remain relatively consistent, and most importantly, that ground floor residential use will not be permitted. Ground floor residential use at 980 W. 5th Avenue may not be protective due to vapor intrusion potential. Ground floor commercial use, and second floor residential uses of the property should be protective of human health. We also assume that the Site and surrounding properties are and will continue to be supplied public drinking water. Groundwater should not be used for domestic use, as it would not be protective.

The No Further Action determination will be recorded in Your DEQ Online (YDO), LUST No. 20-20-0390.

A 30-day public comment period for this recommendation will be provided to the City of Eugene, all owners on the property as well as current businesses on the property, and adjacent properties to the north, west, and east of the Site.

6. ADMINISTRATIVE RECORD

Phase I Environmental Site Assessment, 541-547 Blair Boulevard, 960-980 W 5th Avenue, and 965 W 5th Alley, Eugene, Oregon, Hahn Environmental, November 22, 2019.

Phase II Environmental Site Assessment, 541-547 Blair Boulevard, 960-980 W 5th Avenue, and 965 W 5th Alley, Eugene, Oregon, Hahn Environmental, March 9, 2020.

Risk-Based Assessment, 541-547 Blair Boulevard, 960-980 W 5th Avenue, and 965 W 5th Alley, Eugene, Oregon, GEM Environmental, December 10, 2021.

Targeted Subsurface Investigation, 541-547 Blair Boulevard, 960-980 W 5th Avenue, and 965 W 5th Alley, Eugene, Oregon, GEM Environmental, April 3, 2025.

7. ATTACHMENTS

Figures:

1. Site Location Map
2. Site Plan Map

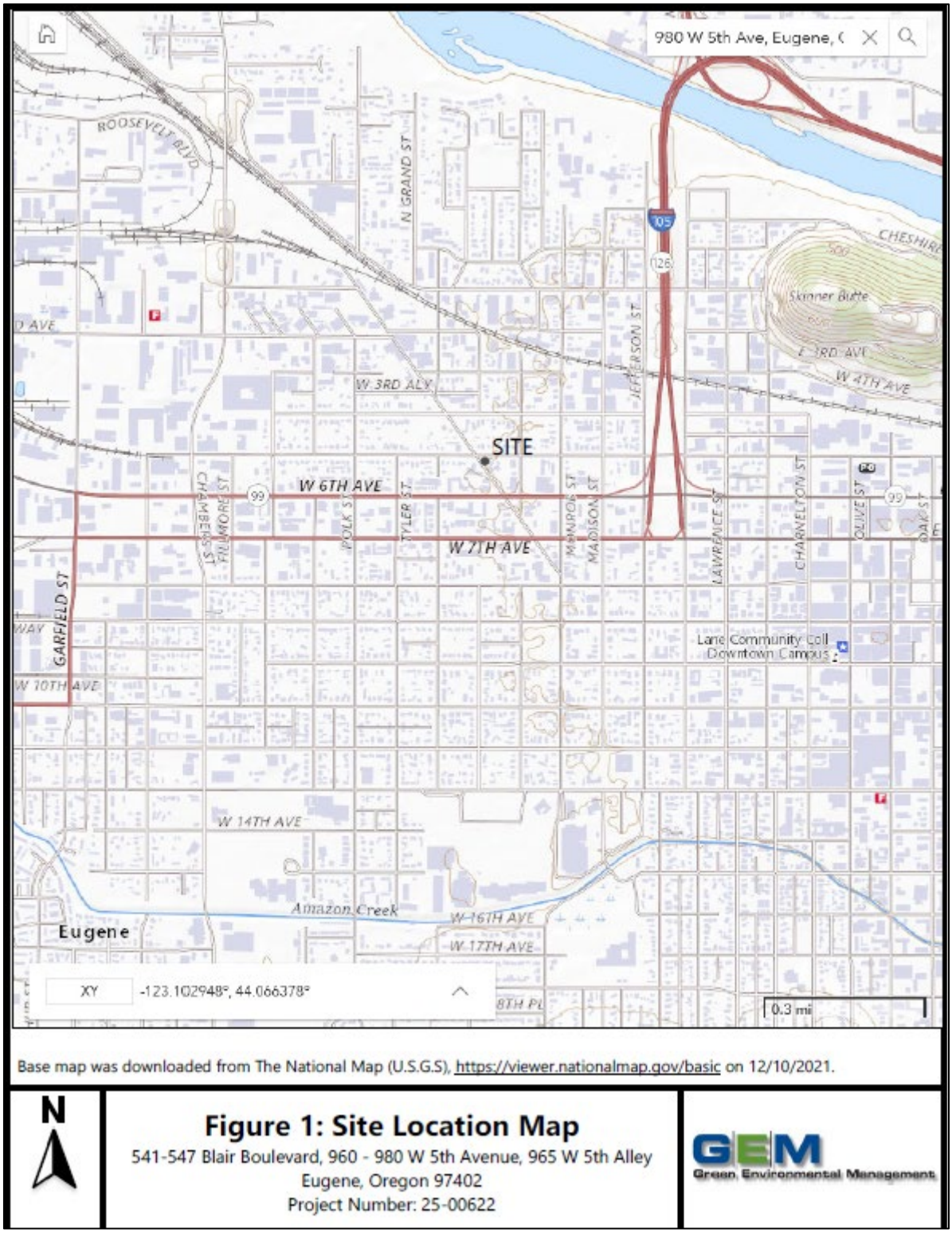

Figure 1. Site Location Map (Retrieved from Targeted Subsurface Investigation report, GEM 4/3/2025).

Figure 2. Site Plan Map (Retrieved from Targeted Subsurface Investigation report, GEM 4/3/2025).