**MEMORANDUM**

**To:** **File – 10485.001/LUST Site Characterization**

**From:** **Jason C. Howard**

**Date:** **September 12, 2022**

**Subject:** **March 2022 Work Summary – 2860 Cherry Avenue NE, Salem**

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In response to a 1990 confirmed fuel release discovered from a leaking underground storage tank (LUST) system (Oregon DEQ LUST File #24-90-4246) at the subject property, Phase 2 Environmental Site Assessment (ESA) soil and groundwater sampling was conducted on March 3, 2022. One 550-gallon gasoline UST was historically located beneath the southwest corner of the old maintenance shop/lumber office building located at 2860 Cherry Avenue NE, a (singular) dispenser was located over the tank. The UST and dispenser were previously removed. The purpose of the Phase 2 soil and groundwater investigation was to identify and replicate the 1990 discovery/decommissioning area sampling, and to potentially determine the present nature and distribution of the subsurface soil and groundwater impacts.

Five soil borings were advanced and five temporary monitoring well points completed on the property. Soil and groundwater samples collected in the vicinity of the former UST (SB1/TW1 and SB5/TW5) and elsewhere on-site (SB4/TW4) were obviously impacted with petroleum and indicative of a weathered gasoline and, potentially, diesel fuel release. While petroleum "free product" was not observed in any of the temporary wells, slight, faded sheen was observed in the cuttings and temporary well samples/purgewater associated with the SB1/TW1 and SB5/TW5 locations.

Detectable concentrations of gasoline- and diesel/oil-type total petroleum hydrocarbons (TPH), were identified by the laboratory on collected samples. Follow-up analyses for select volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), and lead (Pb)/dissolved Pb were also requested in order to further assess the nature and magnitude of hydrocarbon impacts to the subsurface. The dataset was compared to the relevant Oregon DEQ generic Risk-Based Concentrations (RBCs) for the individual constituents-of-interest (COI) at the site and the associated receptors/exposure pathways. It is our understanding that the future site use is anticipated to be limited to an outdoor, occupational (commercial-industrial) exposure setting, as the old maintenance shop/lumber office building is slated for demolition.

Laboratory analytical results show that DEQ generic RBCs are exceeded for certain soil and groundwater exposure pathways that have the potential to be complete at the site. Soil samples from 1990 were initially tested only for Total Petroleum Hydrocarbons (TPH),

whereas, the recent soil and groundwater sampling included analyses for individual constituent VOCs, PAHs, and lead/dissolved lead, in addition to the gasoline-, diesel-, and oil-range organics TPH-fractions.

The following table presents the concentrations of individual chemicals-of-interest identified during this limited investigation where soil RBCs are exceeded. Pathways shown in **bold** are considered potentially complete at the site.

**Soil Generic RBC Exceedences**

| Soil Constituent | Sample ID | Results (mg/kg) [1] | Soil Exposure Pathway-Receptor (RBC mg/kg) |
|---|---|---|---|
| Total Petroleum Hydrocarbons (1990 data) | #1<br>#2 | 570<br>310 | ➢ Level 2 Soil Matrix (Score 29)<br>**gasoline release site (80)**<br>**diesel fuel/oil release site (500)** |
| Gasoline Range | SB1-12'<br>SB5-8'<br>SB5-12' | 965<br>3,220<br>853 | ➢ Soil Vapor Intrusion into Buildings<br>residential (94)<br>urban residential (94)<br>➢ Soil Leaching to Groundwater<br>residential (31)<br>urban residential (31)<br>**occupational (130)**<br>➢ Soil Ingestion, Dermal Contact & Inhalation<br>residential (1,200) |
| Ethylbenzene | SB5-8'<br>SB5-12' | 3.12<br>2.48 | ➢ Soil Vapor Intrusion into Buildings<br>residential (1.3)<br>urban residential (3.0)<br>➢ Soil Leaching to Groundwater<br>residential (0.22)<br>urban residential (0.94)<br>**occupational (0.90)** |
| Naphthalene | SB5-8'<br>SB5-12' | 0.483<br>2.13 | ➢ Soil Leaching to Groundwater<br>residential (0.077)<br>urban residential (0.37)<br>**occupational (0.34)** |

[1] = soil sample concentration in milligrams per kilogram (mg/kg)

It is anticipated that soil impacts are limited to the west property line area and/or adjacent right-of-way along the east side of Cherry Avenue NE, whereas, there is a potential for groundwater impacts to have migrated further. Based on our research and observations of the site-specific conditions and topography, there is an inferred groundwater flow direction to the west.

The following table presents the concentrations of individual chemicals-of-interest identified during this limited investigation where groundwater RBCs are exceeded on-site in temporary well points. Again, those values shown in bold are for pathways considered potentially complete at the site.

**Groundwater Generic RBC Exceedences**

| Groundwater Constituent | Sample ID | Results (µg/L) [2] | Groundwater Exposure Pathway-Receptor (RBC µg/L) |
|---|---|---|---|
| Gasoline Range | TW1<br>TW4<br>TW5 | 3,830<br>395<br>2,840 | ➢ Groundwater Ingestion & Inhalation<br>residential (110)<br>**occupational (450)** |
| Diesel Range | TW1<br>TW2<br>TW3<br>TW4<br>TW5 | 983<br>446<br>343<br>347<br>316 | ➢ Groundwater Ingestion & Inhalation<br>residential (100)<br>**occupational (430)** |
| Oil Range | TW1 | 548 | ➢ Groundwater Ingestion & Inhalation<br>residential (300)<br>**occupational (1,300)** |
| Benzene | TW4 | 1.11 | ➢ Groundwater Ingestion & Inhalation<br>residential (0.46) |
| Ethylbenzene | TW1<br>TW5 | 2.32<br>52.1 | ➢ Groundwater Ingestion & Inhalation<br>residential (1.5)<br>**occupational (6.4)** |
| Naphthalene | TW4<br>TW5 | 0.227<br>30.8 | ➢ Groundwater Ingestion & Inhalation<br>residential (0.17)<br>**occupational (0.72)** |
| 1,2-Dibromoethane (EDB) | TW1 | 1.22 | ➢ Groundwater Ingestion & Inhalation<br>residential (0.0075)<br>**occupational (0.034)** |
| Benzo(a)anthracene | TW4 | 0.083 | ➢ Groundwater Ingestion & Inhalation<br>residential (0.030) |
| Benzo(a)pyrene | TW4<br>TW5 | 0.368<br>0.0488 | ➢ Groundwater Ingestion & Inhalation<br>residential (0.025) |
| Benzo(b)fluoranthene | TW4 | 0.383 | ➢ Groundwater Ingestion & Inhalation<br>residential (0.025) |
| Dissolved Lead (Pb) | TW1<br>TW5 | 33.1<br>14.2 | ➢ Groundwater Ingestion & Inhalation<br>residential (15)<br>**occupational (15)** |

[2] = groundwater sample concentration in micrograms per liter (µg/L)

Our site investigation data indicate that residual subsurface impacts appear to extend to the west from the former tank area. To the west is Cherry Avenue NE and City of Salem right-of-way, water/storm, water/sewer, and other utility (natural gas) pipeline corridors. Further to the west is the large Oregon School for the Deaf general education use, sportsfield, and walking trail property. To the northwest, north, northeast, east, southeast, and south are more commercial-industrial use lands, including railroad corridor(s).

The dataset collected to date indicates that active cleanup may not be required to receive a DEQ "no further action" (NFA) decision. The currently estimated lateral extent of soil and groundwater impacts may be sufficient for risk management decisions, consistent with the beneficial land and water uses anticipated in the future. If additional characterization were to be requested by DEQ, an expedited assessment using similar methods as the Phase 2 work should provide sufficient information to consider the nature and extent to be adequately defined.

The Phase 2 LUST Site Investigation data recently obtained represent the maximum concentrations likely to be encountered. In addition, concentrations in samples collected from temporary well points are biased high compared to monitoring wells over a larger thickness of aquifer. Vicinity and site land use is likely to remain unchanged from occupational for the reasonably foreseeable future.

Attachments:

| | |
|---|---|
| Table 1 | TPH, VOCs, PAHs & Lead in Soil |
| Table 2 | TPH in Groundwater |
| Table 3 | VOCs, PAHs & Dissolved Lead in Groundwater |
| Figure 1 | Site Location |
| Figure 2 | Site Vicinity |
| Figure 3 | Soil Boring & Temporary Well Locations |

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TABLE 1
SOIL ANALYTICAL RESULTS
Petroleum Hydrocarbons[1], Volatile Organic Compounds[2] Polynuclear Aromatic Hydrocarbons[3]
& Lead[4]
2860 Cherry Avenue NE, Salem, Oregon

| | Sample ID | Date Sampled | Location | Sample Depth (inches) | Moisture Content (%) | TPH (old method) | Petroleum-Range Hydrocarbons mg/kg Gasoline | Diesel | Heavy Oil | Lead mg/kg | Benzene mg/kg | Toluene mg/kg | Ethylbenzene mg/kg | Xylenes (total) mg/kg | Naphthalene mg/kg | Isopropylbenzene mg/kg | 1,3,5-Trimethylbenzene mg/kg | Acenaphthylene mg/kg | Acenaphthene mg/kg | Fluorene mg/kg | Phenanthrene mg/kg | Fluoranthene mg/kg | 1-Methylnaphthalene mg/kg | 2-Methylnaphthalene mg/kg | Naphthalene mg/kg | Pyrene mg/kg | Chrysene mg/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Discovery | #1 * ** | 4/7/1990 | West end of tank ** | 78 * | – | **570** | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | #2 * ** | 4/7/1990 | East end of tank ** | 78 * | – | **310** | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Delineation | SB1-8' | 3/3/2022 | Former dispenser / central tank area | 96 | 34.5 | – | 9.17 U | 78.2 F-19 | 60.0 U | 7.87 | 0.0183 U | 0.0917 U | 0.0459 U | 0.138 U | 0.183 U | 0.0917 U | 0.0917 U | 0.0155 U | 0.0155 U | 0.0155 U | 0.0155 U | 0.0155 U | 0.031 U | 0.031 U | 0.031 U | 0.0155 U | 0.0155 U |
| | SB1-12' | 3/3/2022 | Former dispenser / central tank area | 144 SWI | 38.8 | – | **965** | 30.8 U | 61.6 U | 6.35 | 0.038 U | 0.190 U | 0.0949 U | 0.285 U | 0.380 U *** | 0.190 U | 0.190 U | 0.0155 U | 0.0155 U | 0.0155 U | 0.0155 U | 0.0155 U | 0.014 | 0.00869 U | 0.00869 U | 0.0155 U | 0.0155 U |
| | SB2-12' | 3/3/2022 | East of tank area | 144 SWI | 27.3 | – | 7.55 U | 27.0 U | 54.0 U | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | SB3-12' | 3/3/2022 | Southeast of tank area | 144 SWI | 27.1 | – | 7.38 U | 27.1 U | 54.1 U | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | SB4-12' | 3/3/2022 | South of tank area | 144 SWI | 27.4 | – | 7.46 U | 25.5 U | 51.0 U | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | SB5-8' | 3/3/2022 | West of tank area | 96 | 30.7 | – | **3,220** V-15 | 185 F-20 | 54.6 U | 8.48 | 0.375 U *** | 1.88 U | **3.12** | 2.82 U | 3.75 U *** | 2.42 | 1.88 U | 0.0152 U | 0.0152 U | 0.0305 | 0.0405 | 0.0152 U | 0.400 | 0.714 | **0.483** | 0.0152 U | 0.0152 U |
| | SB5-12' | 3/3/2022 | West of tank area | 144 SWI | 28.8 | – | **853** | 41.1 F-20 | 54.2 U | 6.97 | 0.0288 U | 0.144 U | **2.48** | 0.677 | **2.13** | 1.10 | 0.207 | 0.0149 U | 0.0149 U | 0.0149 U | 0.0149 U | 0.0149 U | 0.065 | 0.169 | **0.373** | 0.0149 U | 0.0149 U |
| | **DEQ Soil Matrix & Risk-Based Concentrations (RBCs) - Generic Values** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level 2 Soil Matrix (Score 29) | Gasoline | | | | | **80** | – | – | – | | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | Diesel | | | | | **500** | – | – | – | | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Soil Vapor Intrusion into Building | $RBC_{si\text{-}residential}$ | | | | | | **94** | NE | NE | NE | 0.16 | NE | **1.3** | 160 | 6.4 | NE | 98 | NE | NE | NE | NE | NE | NE | NE | 6.4 | NE | NE |
| | $RBC_{si\text{-}urban\ residential}$ | | | | | | **94** | NE | NE | NE | 0.38 | NE | **3.0** | 160 | 15 | NE | 98 | NE | NE | NE | NE | NE | NE | NE | 15 | NE | NE |
| | $RBC_{si\text{-}occupational}$ | | | | | | NE | NE | NE | NE | 2.1 | NE | 17 | NE | 83 | NE | NE | NE | NE | NE | NE | NE | NE | NE | 83 | NE | NE |
| Soil Volatilization to Outdoor Air | $RBC_{so\text{-}residential}$ | | | | | | 5,900 | NE | NE | NE | 11 | NE | 36 | NE | 6.4 | NE | NE | NE | NE | NE | NE | NE | NE | NE | 6.4 | NE | NE |
| | $RBC_{so\text{-}occupational}$ | | | | | | 69,000 | NE | NE | NE | 50 | NE | 160 | NE | 83 | NE | NE | NE | NE | NE | NE | NE | NE | NE | 83 | NE | NE |
| Soil Leaching to Groundwater | $RBC_{sw\text{-}residential}$ | | | | | | **31** | 9,500 | NE | 30 | 0.023 | 84 | **0.22** | 23 | **0.077** | 96 | 11 | NE | NE | NE | NE | NE | NE | NE | **0.077** | NE | NE |
| | $RBC_{sw\text{-}urban\ residential}$ | | | | | | **31** | 9,500 | NE | 30 | 0.10 | 340 | **0.94** | 87 | **0.37** | NE | 45 | NE | NE | NE | NE | NE | NE | NE | **0.37** | NE | NE |
| | $RBC_{sw\text{-}occupational}$ | | | | | | **130** | NE | NE | 30 | 0.13 | 490 | **0.90** | 100 | **0.34** | NE | 53 | NE | NE | NE | NE | NE | NE | NE | **0.34** | NE | NE |
| Soil Ingestion, Dermal Contact, and Inhalation | $RBC_{ss\text{-}residential}$ | | | | | | **1,200** | 1,100 | 2,800 | 400 | 8.2 | 5,800 | 34 | 1,400 | 5.3 | 3,500 | 430 | NE | 4,700 | 3,100 | NE | 2,400 | NE | NE | 5.3 | 1,800 | 110 |
| | $RBC_{ss\text{-}occupational}$ | | | | | | 20,000 | 14,000 | 36,000 | 400 | 37 | 88,000 | 150 | 25,000 | 25 | 57,000 | 6,900 | NE | 70,000 | 47,000 | NE | 30,000 | NE | NE | 25 | 23,000 | 2,100 |
| | $RBC_{ss\text{-}construction}$ | | | | | | 9,700 | 4,600 | 11,000 | 800 | 380 | 28,000 | 1,700 | 20,000 | 580 | 27,000 | 2,900 | NE | 21,000 | 14,000 | NE | 10,000 | NE | NE | 580 | 7,500 | 17,000 |
| | $RBC_{ss\text{-}excavation}$ | | | | | | NE | NE | NE | 800 | 11,000 | 770,000 | 49,000 | 560,000 | 16,000 | 750,000 | 81,000 | NE | 590,000 | 390,000 | NE | 280,000 | NE | NE | 16,000 | 210,000 | 490,000 |

**Notes:**

Those compounds and Soil Matrix Levels and/or RBCs **bolded** were detected at a concentration greater than corresponding Soil Matrix Levels and/or RBCs. RBCs were updated by DEQ in May 2018.

[1] = Samples collected on or about April 7, 1990, were analyzed for Total Petroleum Hydrocarbons via EPA Method 418.1. 2022 petroleum-range hydrocarbons were analyzed by NWTPH-Gx for gas and NWTPH-Dx for diesel and heavy oils.

[2] = Volatile Organic Compounds (VOCs) by EPA Methods 5035A/8260D. See analytical report for full list of analytes and detections.

[3] = Polynuclear Aromatic Hydrocarbons (PAHs) by EPA Method 8270E-SIM. See analytical report for full list of analytes and detections.

[4] = Total lead analyses via EPA Method 6020B. See analytical report for full list of analytes and detections.

mg/kg=milligrams per kilogram

DEQ RBC=Generic values from Appendix A (May 2018) of OAR 340-122-0244.

$RBC_{so}$=Soil RBC for Volatilization to Outdoor Air

$RBC_{si}$=Soil RBC for Vapor Intrusion into Buildings

$RBC_{sw}$=Soil RBC for Leaching to Groundwater

$RBC_{ss}$=Soil RBC for Ingestion, Dermal Contact, and Inhalation

NE = Numeric RBC value not established, no value, or exceeds solubility limits: see DEQ RBC guidance for details.

* = native soil sample depth estimated based on typical dimensions for a reportedly 550-gallon tank

** = unknown disposition of tank decommissioning area samples

*** = DEQ RBC is less than the method reporting limit

SWI = apparent soil-water interface

U = not detected at the method detection limit

F-19 = results estimated due to the presence of multiple fuel products

F-20 = results for Diesel are estimated due to overlap from Gasoline Range Organics or other VOCs

V-15 = sample aliquot was subsampled from the sample container, and preserved in the laboratory within 48-hours of sampling.

– = not analyzed

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
Total Petroleum Hydrocarbons
2860 Cherry Avenue NE, Salem, Oregon

| | Sample ID | Depth to Water (feet) | Date Sampled | Gasoline Range Organics[1] µg/L | | Diesel Range Organics[1] µg/L | | Oil Range Organics[1] µg/L | |
|---|---|---|---|---|---|---|---|---|---|
| Temporary Wells | TW1 | 2.5 – 3.0 | 3/3/2022 | **3,830** | | **983** | F-19 | **548** | |
| | TW2 | 5.0 | 3/3/2022 | 100 | U | **446** | F-11 | 184 | U |
| | TW3 | 5.0 | 3/3/2022 | 100 | U | **343** | F-11 | 186 | U |
| | TW4 | 4.5 – 5.0 | 3/3/2022 | **395** | | **347** | F-11 | 190 | U |
| | TW5 | 2.0 – 2.5 | 3/3/2022 | **2,840** | | **316** | F-18 | 174 | U |
| **DEQ Generic Risk-Based Concentrations (RBCs)** | | | | | | | | | |
| Groundwater Ingestion & Inhalation From Tapwater | Residential $RBC_{tw}$ (µg/L) | | | **110** | | **100** | | **300** | |
| | Occupational $RBC_{tw}$ (µg/L) | | | **450** | | **430** | | 1,300 | |
| Groundwater Volatilization to Outdoor Air | Residential $RBC_{wo}$ (µg/L) | | | >S | | >S | | >S | |
| | Occupational $RBC_{wo}$ (µg/L) | | | >S | | >S | | >S | |
| Groundwater Vapor Intrusion Into Buildings | Residential $RBC_{wi}$ (µg/L) | | | 22,000 | | >S | | >S | |
| | Occupational $RBC_{wi}$ (µg/L) | | | >S | | >S | | >S | |
| Groundwater in Excavation | Construction & Excavation Worker $RBC_{we}$ (µg/L) | | | 14,000 | | >S | | >S | |

Notes:

[1] = Diesel range (C10-C22) and oil range (>C22-C40) hydrocarbons via Method NWTPH-Dx.

U = not detected at the method detection limit

F-11 = hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component

F-18 = results for Diesel (C12-C24 range DRO) is due to overlap from Gasoline or a Gasoline range product

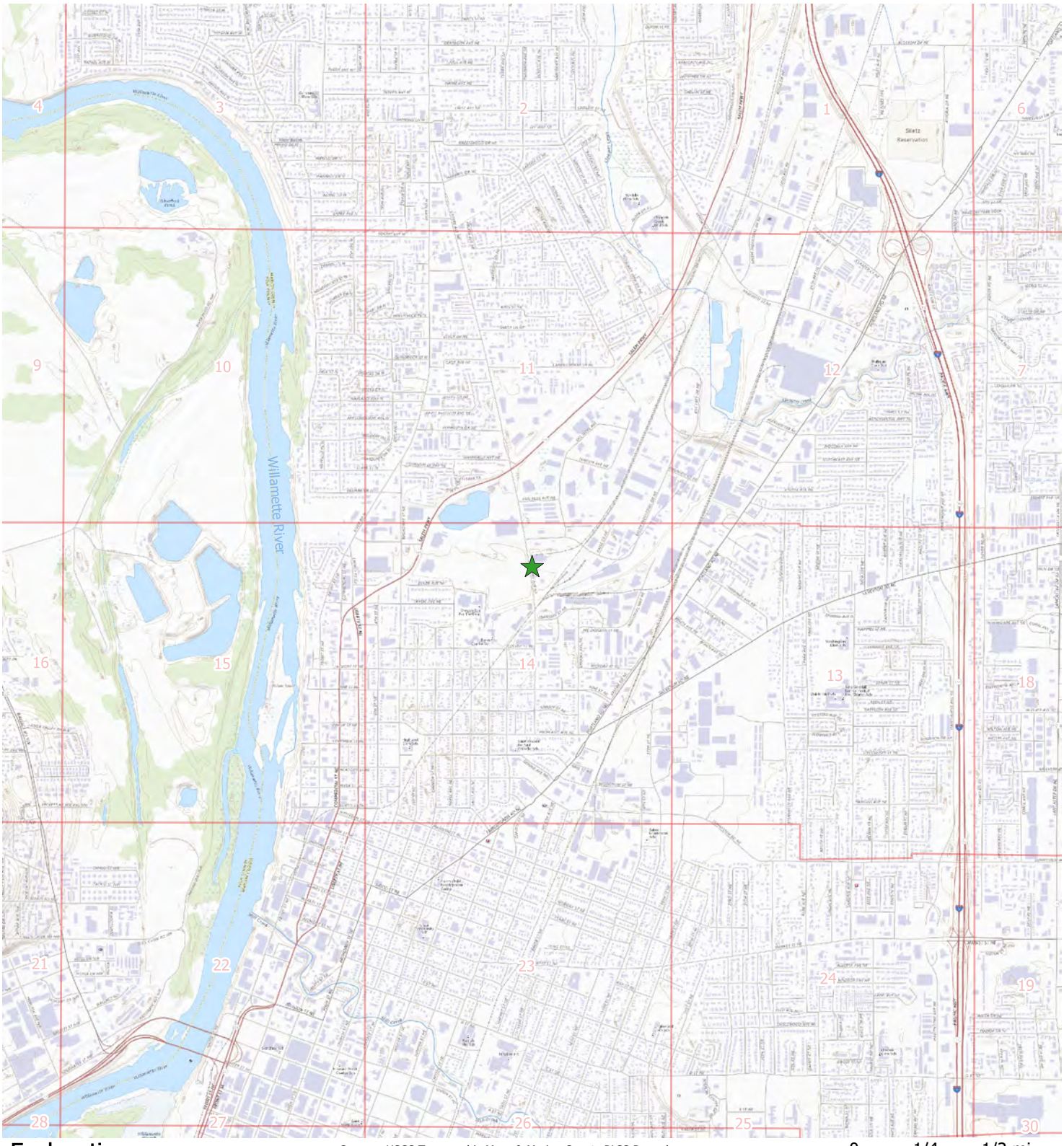
F-19 = results estimated due to the presence of multiple fuel products

>S = Per DEQ guidance (2009), the groundwater RBC is greater than the solubility limit for this constituent.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Volatile Organic Compounds[1], Polynuclear Aromatic Hydrocarbons[2] & Dissolved Lead[3]
2860 Cherry Avenue NE
Salem, Oregon

| | Sample ID | Depth to Water (feet) | Date | Benzene[1] (µg/L) | Toluene[1] (µg/L) | Ethylbenzene[1] (µg/L) | Xylenes, total[1] (µg/L) | Naphthalene[1] (µg/L) | 1,2-Dibromoethane (EDB)[1] (µg/L) | Isopropylbenzene[1] (µg/L) | Acenaphthene[2] (µg/L) | Acenaphthylene[2] (µg/L) | Anthracene[2] (µg/L) | Benz(a) anthracene[2] (µg/L) | Benzo(a) pyrene[2] (µg/L) | Benzo(b) fluoranthene[2] (µg/L) | Benzo(k) fluoranthene[2] (µg/L) | Benzo(g,h,i) perylene[2] (µg/L) | Chrysene[2] (µg/L) | Dibenz(a,h) anthracene[2] (µg/L) | Fluoranthene[2] (µg/L) | Fluorene[2] (µg/L) | Indeno(1,2,3-cd) pyrene[2] (µg/L) | 1-Methyl Naphthalene (µg/L) | 2-Methyl Naphthalene (µg/L) | Naphthalene[2] (µg/L) | Phenanthrene[2] (µg/L) | Pyrene[2] (µg/L) | Dibenzofuran (µg/L) | Dissolved Lead[3] (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Temporary Wells | TW1 | 2.5 – 3.0 | 3/3/2022 | 0.400 U | 2.00 U | **2.32** | 3.00 U | 4.00 U | **1.22** | 5.76 | 0.413 U | 0.111 U | 0.111 U | 0.0254 U | 0.0254 U * | 0.0254 U | 0.0254 U | 0.0508 U | 0.0254 U | 0.0254 U * | 0.0508 U | 0.553 | 0.0254 U | 7.05 | 3.17 | 3.49 U * | 0.200 | 0.0508 U | 0.174 | **33.4** |
| | TW2 | 5.0 | 3/3/2022 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| | TW3 | 5.0 | 3/3/2022 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| | TW4 | 4.5 -5.0 | 3/3/2022 | **1.11** | 1.00 U | 0.500 U | 2.68 | 2.00 U | 0.500 U * | 1.07 | 0.0499 | 0.137 | 0.0973 | **0.0830** | **0.368** | **0.383** | 0.114 | 0.678 | 0.115 | 0.0476 U * | 0.210 | 0.0742 | 0.570 | 0.0952 U | 0.0952 U | **0.227** | 0.206 | 0.384 | 0.0476 U | 0.200 U |
| | TW5 | 2.0 - 2.5 | 3/3/2022 | 0.400 U | 2.80 | **52.1** | 12.9 | **30.8** | 1.00 U * | 9.94 | 0.0750 U | 0.0750 U | 0.118 | 0.0375 U | **0.0488** | 0.0535 | 0.0375 U | 0.127 | 0.0375 U | 0.0375 U | 0.0750 U | 0.0797 | 0.0835 | 1.97 | 4.45 | **21.9** | 0.150 | 0.0750 U | 0.0750 U | 14.2 |
| | **DEQ Generic Risk-Based Concentrations (RBCs)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Groundwater Ingestion & Inhalation from Tapwater | Residential $RBC_{tw}$ (µg/L) | | | **0.46** | 1,100 | **1.5** | 190 | **0.17** | **0.0075** * | 440 | 510 | — | — | **0.030** | **0.025** * | **0.25** | — | — | — | 0.025 * | — | 280 | — | — | — | **0.17** * | — | 110 | — | **15** |
| | Occupational $RBC_{tw}$ (µg/L) | | | 2.1 | 6,300 | **6.4** | 830 | **0.72** | **0.034** * | 2,000 | 2,500 | — | — | 0.38 | 0.47 | — | — | — | — | 0.47 | — | 1,300 | — | — | — | **0.72** * | — | — | — | **15** |
| Groundwater Volatilization to Outdoor Air | Residential $RBC_{wo}$ (µg/L) | | | 3,100 | — | 9,900 | — | 3,600 | 180 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 3,600 | — | — | — | — |
| | Occupational $RBC_{wo}$ (µg/L) | | | 14,000 | — | 43,000 | — | 16,000 | 790 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 16,000 | — | — | — | — |
| Groundwater Volatilization into Buildings | Residential $RBC_{iw}$ (µg/L) | | | 210 | — | 620 | 86,000 | 840 | 45 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 840 | — | — | — | — |
| | Occupational $RBC_{iw}$ (µg/L) | | | 2,800 | — | 8,200 | — | 11,000 | 110 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 11,000 | — | — | — | — |
| Groundwater in Excavation | Construction & Excavation Worker $RBC_{ew}$ (µg/L) | | | 1,800 | 220,000 | 4,500 | 23,000 | 500 | 27 | 51,000 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 500 | — | — | — | — |

Notes:
Those compounds and **RBCs bolded** were detected at a concentration greater than corresponding RBCs. RBCs were updated by DEQ in May 2018.
[1] = RBDM volatile organic compounds analyses via Method EPA 8260D
[2] = RBDM polynuclear aromatic hydrocarbons via Method EPA 8270E SIM
[3] = Dissolved Lead (Pb) via Method EPA 6020B
U = not detected at the method reporting limit
— = not applicable
* = DEQ RBC is less than MRL




Explanation

★ Site Location

Source: USGS Topographic Maps & Marion County PLSS Records.

0 1/4 1/2 mi

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**FIGURE 1**
**SITE LOCATION**
**2860 Cherry Avenue NE**
**Salem, Oregon**


0 150 300 ft.

Explanation

Site Location
Parcels
PLSS
Railroad

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**FIGURE 2**
**SITE VICINITY**
**2860 Cherry Avenue NE**
**Salem, Oregon**


Explanation

Building

Former Fuel UST Excavation System Location (550 gallon)

Previous Sample Locations (1990)

Sample Locations (2022)

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**FIGURE 3**
**SOIL BORING & TEMPORARY WELL LOCATIONS**
**2860 Cherry Avenue NE**
**Salem, Oregon**