

Revised Data Gap Investigation Report

Former Mall 99 Dry Cleaners
972 North Pacific Highway
Woodburn, Oregon

for

Khoury Development, LLC

March 13, 2025

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GEOENGINEERS 

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Woodburn, Oregon

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1.0 Introduction

This Revised Data Gap Investigation Report presents the results of a data gap investigation conducted at the former Mall 99 Dry Cleaner (Site) located at 972 North Pacific Highway, Woodburn, Oregon. GeoEngineers, Inc. (GeoEngineers) conducted this data gap investigation in general accordance with our proposal, dated February 28, 2024, the Oregon Department of Environmental Quality (DEQ) approved Data Gap Investigation Work Plan, dated March 6, 2024 and our proposal, dated January 21, 2025, which was prepared following discussions with DEQ. The Site location is shown in the Vicinity Map, Figure 1. Site features, sub-slab soil vapor, indoor air and boring/monitoring well locations are illustrated in the Site Plan and Exploration Locations, Figure 2.

2.0 Background Summary

GeoEngineers reviewed a Phase I Environmental Site Assessment (ESA) prepared by AEI Consultants (AEI) for the property at 954-1032 North Pacific Highway in Woodburn, Oregon (AEI Consultants 2020). The Phase I ESA identified one recognized environmental condition (REC) indicating that a former tenant (Mall 99 Cleaners) occupied unit 976 North Pacific Highway. However, street addresses have changed over the years and the current unit identified as 972 is the historical location of the Mall 99 Cleaners. Previous records indicated the tenant was limited to a coin operated laundry; however, the California HAZNET database reported one record during the timeframe of operation related to the transport of solvents, including tetrachloroethylene (PCE), which is a common dry-cleaning solvent. The Phase I ESA recommended a Phase II ESA subsurface investigation to evaluate the potential presence of dry-cleaning solvents in the subsurface.

Based on discussions with client representatives on February 11, 2021, GeoEngineers performed a sub-slab soil vapor sampling event inside the unit identified as 972. At the time of this sampling event, PCE was detected at concentrations less than DEQ's commercial vapor intrusion (VI) to indoor Risk-Based Concentrations (RBCsv) (GeoEngineers 2021a). In May 2021, GeoEngineers conducted additional Phase II ESA activities by advancing four soil borings outside the building which were completed as groundwater monitoring wells (MW-1 through MW-4). At the time of this sampling event, PCE was detected at concentrations less than DEQ's volatilization to indoor air RBCsv screening values in soil from MW-1 and MW-3. PCE was detected in groundwater from wells MW-1, MW-3 and MW-4 at concentrations less than DEQ's Groundwater Vapor Intrusion into Buildings RBCwi, Occupational receptor scenario (48,000 micrograms per liter [$\mu\text{g}/\text{L}$]) at the time. PCE was not detected in groundwater from well MW-2 (GeoEngineers 2021b).

In 2021, a VCP application was submitted to the DEQ, and a project manager was subsequently assigned in May of 2022. During the interim period of DEQ review, DEQ adopted new RBCs (June 2023), including a Commercial RBCwi for Groundwater Vapor Intrusion into Buildings (130 and 330 $\mu\text{g}/\text{L}$; Chronic and Acute, respectively) and RBCsv for Soil Vapor intrusion into Buildings (1,600 and 4,000 microgram per cubic meter [$\mu\text{g}/\text{m}^3$]; Chronic and Acute, respectively). As a result, the 2021 PCE concentrations in groundwater from wells MW-3 and MW-4 and sub-slab soil vapor from SV-01 and SV-02 exceed one or both of the newly established DEQ RBCs. During a February 16, 2024 meeting, DEQ requested additional assessment of the Site, including four quarters of groundwater monitoring and two rounds of the following: sub-slab soil vapor, indoor air and outdoor air monitoring before considering a No Further Action (NFA) determination. A Data Gap Investigation Work Plan was prepared and approved by DEQ (GeoEngineers 2024a).

Following completion of our data gap investigation activities, a Data Gaps Investigation report was prepared and submitted to DEQ for review (GeoEngineers 2024b). In a discussion with DEQ on January 13, 2025 and follow up email from DEQ on January 21, 2025, an additional round of indoor air, outdoor air and sub-slab soil vapor sampling was requested in conjunction with our planned January 2025 groundwater sampling event. Additional details regarding the additional sampling are provided in Section 3.0 below.

2.1 GEOLOGIC SETTING

The Site is located in the eastern Willamette Valley, which is a broad alluvial plain bounded on the west by Tertiary marine sedimentary and volcanic rocks of the Coast Range, and on the east by Tertiary and Quaternary volcanic rocks of the Cascade Range. The geology of the Woodburn area is not mapped at the quadrangle scale. The most recent geologic mapping of the region that includes the subject site is contained in the U.S. Geological Survey (USGS) Professional Paper 1424, Geologic Framework of the Willamette Lowland Aquifer System (Gannett and Caldwell 1998) as underlain by Willamette Silt, Plio-Pleistocene alluvium deposited by glacial outburst (“Missoula”) floods. Gannett and Caldwell (1998) note that as much as 130 feet of this unconsolidated silt and fine sand has been encountered in the central portions of the Willamette Valley in the Woodburn area.

Our review of the site geology, together with on-site observations, suggests that the site geology largely conforms to the published mapping. Specifically, fine sand with varying amounts of silt has generally been encountered below 1 to 3 feet of imported fill material in borings completed 18 to 20 feet below ground surface (bgs).

2.2 HYDROGEOLOGIC SETTING

Wells within a ¼-mile of the Site are installed in younger alluvium with static water levels reportedly ranging between 16 and 55 feet bgs. Groundwater monitoring conducted at the Site during this investigation (April, July and October 2024 and January 2025) encountered static water levels between depths of approximately 8 and 14 feet bgs.

3.0 Field Activities

The additional Phase II ESA activities were conducted in general accordance with the DEQ approved Data Gap Investigation Work Plan, dated March 6, 2024 and in follow up conversations with DEQ. Field activities were performed using the methods described in Appendix A. Prior to initiating subsurface explorations, the locations were marked in the field, public utility locates were notified and a private contractor performed utility locates with a GeoEngineers representative and adjusted subsurface exploration locations to avoid any buried utilities. Site features, sub-slab soil vapor, indoor air, boring and well locations are shown in Figure 2.

3.1 SUB-SLAB SOIL VAPOR PIN INSTALLATION AND SAMPLING

On April 21, 2024, six soil Vapor Pins® were installed; five locations were used to monitor sub-slab soil vapor quality and one location used to evaluate the pressure differential between the sub-slab and indoor air. On January 28, 2025, one additional soil Vapor Pin® was installed in the adjacent building. Each Vapor Pin® was completed using a silicone gasketed stainless-steel sample port inserted into a 5/8-inch diameter hole drilled through the concrete floor slab. The sample device was tightened to create a seal and then a flush mounted stainless-steel cover was placed over the sample point until the time of sampling. Additional installation details are provided in Appendix A.

Sub-slab soil vapor samples were collected from soil vapor sample locations SV-1 through SV-5 in April and November 2024. In consultation with DEQ soil vapor samples in January 2025 were limited to soil vapor sample locations SV-1, SV-2, SV-4 and newly installed SV-7. Pre-sampling quality control procedures (i.e., shut-in test and purging) were conducted prior to sample collection. The sub-slab samples were collected using laboratory provided evacuated 1-liter Summa canisters equipped with a flow regulator set to less than or equal to approximately 200 milliliters per minute. The Summa canisters were filled until a vacuum equivalent of approximately 2 to 3 inches of mercury remained in each canister, then the inlet valve was closed and the canister pressure and stop date and stop time were recorded. Additional details for sampling are presented in Appendix A. Sub-slab soil vapor samples were shipped to Eurofins Air Toxics in Folsom, California for analysis of select HVOCS (PCE, TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride) by EPA Method TO-15.

3.2 INDOOR AND OUTDOOR AIR SAMPLING

During each event, two indoor air samples and one outdoor air sample were collected using 6-liter evacuated summa canisters equipped with 8-hour flow controllers. The intake of each sample was placed in the breathing zone between 3 and 5 feet above the ground surface. The samples were deployed in open areas of the indoor workspace and the outdoor air sample was deployed in the dominant upwind location as observed on the day of sampling. In consultation with DEQ the January 2025 indoor air sample IA-1 was relocated from the previous sample location in the main space of the building to the hallway just outside the office where SV-1 is located. Air samples were shipped to Eurofins Air Toxics in Folsom, California for analysis of select HVOCS (PCE, TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride) by EPA Method TO-15-SIM.

During the indoor/outdoor air sampling event, soil vapor location SV-6 was monitored using an Omniguard differential pressure recorder. Pressures were recorded on 15-minute intervals and measured in inches of water column (inches WC).

3.2.1 April 2024 Sampling Event

On April 25, 2024, indoor and outdoor air sampling was performed in conjunction with sub-slab soil vapor sample collection.

Differential pressure readings ranged from -0.017 to 0.011 inches WC with the readings oscillating above and below zero during each recorded reading (recorder displays the high and low during the 15-minute period). The differential pressure recording did not indicate a significant measurable difference in pressure between the indoor air and sub-slab during the monitoring period. Indoor air temperature was 67 degrees Fahrenheit during the sampling event and were maintained by the building's HVAC system. The barometric pressure ranged from 29.61 to 29.79 with the pressure decreasing throughout the 24-hour period. Barometric pressures for the 3 days preceding sampling ranged from 29.7 to 30.1 and were decreasing during the 3-day period. Outdoor air temperature ranged from 45 to 50 degrees Fahrenheit during the 24-hour period on April 25, 2024.

3.2.2 November 2024 Sampling Event

On November 1, 2024, indoor and outdoor air sampling was performed in conjunction with sub-slab soil vapor sample collection.

Differential pressure readings ranged from -0.017 to 0.010 inches WC with the readings oscillating above and below zero (recorder displays the high and low during the 5-minute period). The differential pressure recording did not indicate a significant measurable difference in pressure between the indoor air and sub-slab during the monitoring period. Indoor air temperature was 72 degrees Fahrenheit during the sampling event and was maintained by the building's HVAC system. The barometric pressure ranged from 29.4 to 29.7 with the pressure decreasing throughout the 24-hour period on November 1, 2024. Barometric pressures for the 3 days preceding sampling ranged from 29.6 to 29.9 and were decreasing during the 3-day period. Outdoor air temperature ranged from 52 to 56 degrees Fahrenheit during the 24-hour period on November 1, 2024.

3.2.3 *January 2025 Sampling Event*

On January 28, 2025, indoor and outdoor air sampling was performed in conjunction with sub-slab soil vapor sample collection.

Differential pressure readings ranged from -0.010 to 0.001 inches WC with the readings oscillating above and below zero (recorder displays the high and low during the 5-minute period). The differential pressure recording did not indicate a significant measurable difference in pressure between the indoor air and sub-slab during the monitoring period. Indoor air temperature was 72 degrees Fahrenheit during the sampling event and was maintained by the building's HVAC system. The barometric pressure ranged from 29.9 to 30.0 with the pressure decreasing throughout the 24-hour period on January 28, 2025. Barometric pressures for the 3 days preceding sampling ranged from 29.9 to 30.1 and were decreasing during the 3-day period. Outdoor air temperature ranged from 26 to 54 degrees Fahrenheit during the 24-hour period on January 28, 2025.

3.3 **ADDITIONAL SOIL EXPLORATIONS**

On April 24, 2024, a GeoEngineers representative oversaw advancement of three soil boring explorations (MW-5 through MW-7) using a direct-push track-mounted drill rig operated by Xavier Environmental, LLC (Xavier). Soil borings were advanced to 18 feet bgs and were selected based on previous site use and assumed groundwater flow direction. Soil samples for analysis were collected based on field screening evidence or were collected just above the soil-water interface. Additionally, groundwater monitoring wells were constructed in each boring and groundwater samples were collected from the monitoring wells.

3.3.1 *Soil Sampling*

Soils encountered in the borings were generally gray base course gravel fill to approximately 1 to 3 feet bgs, underlain by native brown silt with varying amounts of sand and fine sand with varying amounts of silt to the termination of the borings at 18 feet bgs. Wet soil conditions were observed below depths 8 to 9 feet bgs in each boring. A log of soil conditions encountered in each boring is provided in Appendix A (Figures A-2 through A-4).

Soil was field screened using visual observations and headspace vapor measurements using a MiniRae 3000 PID to detect the presence of HVOCs. The soil samples were also checked for an oil sheen using a black pan containing water. PID readings for the samples were less than 1 parts per million (ppm) with minor exceptions in boring MW-5 ranging from 1.7 to 11 ppm. No oil sheens were observed in any of the samples. Additional details regarding field screening procedures are detailed in Appendix A.

Soil samples were transferred to the laboratory-prepared containers and stored in coolers with ice for transport to Apex Laboratories in Tigard, Oregon. A total of six soil samples were analyzed for select HVOCs (PCE, TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride) by EPA Method 8260D.

Soil generated during boring and monitoring well installation was drummed, labeled and temporarily stored on site pending waste profiling and off-site disposal.

3.3.2 *Monitoring Well Construction and Well Development*

A GeoEngineers' field representative observed and documented the installation of MW-5 through MW-7, and maintained a log of the well construction materials, depths of materials and depths of each well. Well construction details are included in Appendix A.

Each monitoring well was constructed using ¾-inch-diameter, schedule 40 PVC well casing and well screens. The wells were constructed with a 10-foot screened interval. Colorado silica sand or equivalent was placed in the annular space surrounding the pre-packed well screens and extended at least 2 feet above the screen. Monitoring wells were screened between approximately 8 to 18 feet bgs and completed with a bentonite seal and a flush-mounted steel monument. A concrete surface seal was placed around the monument at the ground surface and a lockable cap was installed at the top of the PVC well casing.

Wells MW-5 through MW-7 were developed after installation to remove water introduced into the borehole during drilling (if any), to stabilize the filter pack and formation materials surrounding the well screen and to restore the natural hydraulic connection between the well screen and the surrounding soil. Wells were developed using a two-stage submersible or peristaltic pump with disposable tubing until the water was relatively free of sediment. Water generated during development was drummed, labeled and temporarily stored on site.

3.4 GROUNDWATER MONITORING

Quarterly groundwater monitoring events were performed in April, July and October 2024 and January 2025. Top of casing elevations were used in conjunction with depth to groundwater measurements to determine the groundwater elevations and flow direction. The flow direction was observed to be relatively flat but trending slightly to the west northwest during all four groundwater monitoring events (Groundwater Results, Figure 3 through 6).

Wells MW-1 through MW-7 were purged and sampled on April 29, July 12 and October 31, 2024, and January 29, 2025. A peristaltic pump with disposable tubing was used to purge each monitoring well using low-flow sampling methodology (EPA, 2017). Groundwater quality parameters (temperature, pH, specific conductivity, oxidation-reduction potential, dissolved oxygen and turbidity) were measured during well purging. Field parameters are presented in Table 4. Groundwater samples were collected after water quality parameters stabilized, or in cases where the well was dewatered, the well was allowed to recharge while other work was performed. Purging and sampling were performed in general conformance with the criteria presented in Appendix A.

Groundwater samples were transferred to laboratory-prepared containers and stored in coolers with ice for transport to Apex Laboratories in Tigard, Oregon. Groundwater samples were analyzed for select HVOCs (PCE, TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride) by EPA Method 8260D.

Purge water generated during well development and sampling was drummed, labeled and temporarily stored on site pending waste profiling and off-site disposal.

4.0 Results

The following sections summarize the results of sub-slab soil vapor, indoor/outdoor air, soil and groundwater sampling. Laboratory reports are attached in Appendix B. Sample locations are shown in Figure 2.

4.1 SUB-SLAB SOIL VAPOR CHEMICAL ANALYTICAL RESULTS

4.1.1 April 2024 Sampling Event

Five sub-slab soil vapor samples (SV-1 through SV-5) were collected for laboratory analysis. The sub-slab soil vapor sample results are summarized in Table 1 and below:

- TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride were not detected in the soil vapor samples submitted for analysis.
- PCE was detected at concentrations ranging from 110 to 22,000 $\mu\text{g}/\text{m}^3$ in sub-slab soil vapor samples SV-1, SV-2, SV-4 and SV-5.
- The detected concentration of PCE (22,000 $\mu\text{g}/\text{m}^3$) in sample SV-1, located in the southwestern portion of unit 972, exceeded the RBCsv for vapor intrusion into buildings pathway for a commercial receptor for chronic (1,600 $\mu\text{g}/\text{m}^3$) and acute (4,000 $\mu\text{g}/\text{m}^3$).

4.1.2 November 2024 Sampling Event

Five sub-slab soil vapor samples (SV-1 through SV-5) were collected for laboratory analysis. The sub-slab soil vapor sample results are summarized in Table 1 and below:

- TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride were not detected in the soil vapor samples submitted for analysis.
- PCE was detected at concentrations ranging from 26 to 14,000 $\mu\text{g}/\text{m}^3$ in sub-slab soil vapor samples SV-1, SV-2, SV-4 and SV-5.
- The detected concentration of PCE (14,000 $\mu\text{g}/\text{m}^3$) in sample SV-1, located in the southwestern portion of unit 972, exceeded the RBCsv for vapor intrusion into buildings pathway for a commercial receptor for chronic (1,600 $\mu\text{g}/\text{m}^3$) and acute (4,000 $\mu\text{g}/\text{m}^3$).

4.1.3 January 2025 Sampling Event

Four sub-slab soil vapor samples (SV-1, SV-2, SV-4 and SV-7) were collected for laboratory analysis. The sub-slab soil vapor sample results are summarized in Table 1 and below:

- TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride were not detected in the soil vapor samples submitted for analysis.
- PCE was detected at concentrations ranging from 13 to 8,200 $\mu\text{g}/\text{m}^3$ in sub-slab soil vapor samples SV-1, SV-2, SV-4 and SV-7.

- The detected concentration of PCE (8,200 $\mu\text{g}/\text{m}^3$) in sample SV-1, located in the southwestern portion of unit 972, exceeded the RBCsv for vapor intrusion into buildings pathway for a commercial receptor for chronic (1,600 $\mu\text{g}/\text{m}^3$) and acute (4,000 $\mu\text{g}/\text{m}^3$).

4.2 INDOOR AND OUTDOOR AIR CHEMICAL ANALYTICAL RESULTS

4.2.1 April 2024 Sampling Event

Two indoor air samples (IA-1 and IA-2) and one outdoor air sample (OA-1) were collected for laboratory analysis. The air sample results are summarized in Table 2 and below:

- 1,1-DCE, trans-1,2-DCE and vinyl chloride were not detected in the indoor air samples IA-1 or IA-2.
- PCE and trans-1,2-DCE were detected in the outdoor air sample and were used to adjust the indoor air sample results as appropriate.
- Cis-1,2-DCE, TCE and/or PCE were detected in indoor air samples IA-1 and IA-2. Detected concentrations of PCE in indoor air samples IA-1 and IA-2 were corrected by subtracting the outdoor air sample results. The detected concentrations HVOCs in the indoor air samples were less than the indoor air RBCs for commercial chronic and acute receptors.

4.2.2 November 2024 Sampling Event

Two indoor air samples (IA-1 and IA-2) and one outdoor air sample (OA-1) were collected for laboratory analysis. The air sample results are summarized in Table 2 and below:

- 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE and vinyl chloride were not detected in the indoor air samples IA-1 or IA-2.
- 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, PCE and vinyl chloride were not detected in the outdoor air sample.
- PCE was detected in indoor air samples IA-1 and IA-2. The detected concentrations HVOCs in the indoor air samples were less than the indoor air RBCs for commercial receptors (chronic and acute).

4.2.3 January 2025 Sampling Event

Two indoor air samples (IA-1 and IA-2) and one outdoor air sample (OA-1) were collected for laboratory analysis. The air sample results are summarized in Table 2 and below:

- 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, PCE and vinyl chloride were not detected in the indoor air samples IA-1 or IA-2 or outdoor air sample OA-1.

4.3 SOIL CHEMICAL ANALYTICAL RESULTS

Two soil samples were collected from each soil boring (MW-5 through MW-7) based on field screening and the observed soil/water interface. The soil sample depths and results are summarized in Table 3 and below:

- Select HVOCs (PCE, TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride) were not detected in the analyzed soil samples.

4.4 GROUNDWATER CHEMICAL ANALYTICAL RESULTS

Groundwater samples were collected from MW-1 through MW-7. The groundwater sample results are summarized in Table 4 and below for each event.

4.4.1 April 2024 Groundwater Sampling Event

- TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride were not detected in samples collected from wells MW-1 through MW-7.
- PCE was not detected in the samples collected from well MW-5.
- PCE was detected in wells MW-1, MW-2, MW-3, MW4, MW-6 and MW-7 at concentrations ranging from 2.20 µg/L to 855 µg/L.
- The detected concentrations of PCE in well MW-3 (159 µg/L) and MW-4 (855 µg/L) exceeded the RBCs for vapor intrusion into buildings pathway for commercial chronic and acute receptors (130 and 330, respectively).
- The detected concentrations of PCE in wells MW-3, MW-4 and MW-6 exceeded the groundwater ingestion and inhalation pathway for residential receptors (not applicable under current or future site use scenarios). Well MW-6, which was 15 feet north of the property boundary, had a detected concentration of PCE (14.3 µg/L) slightly exceeding the residential receptor for ingestion and inhalation from tap water (12 µg/L). A well could not be installed closer to the property boundary due to the presence of utilities; however, based on the upgradient location, distance from the property boundary and slight exceedance of the residential standard, it can be assumed that groundwater further upgradient and off the property is unlikely to be impacted exceeding the most restrictive RBCs.

4.4.2 July 2024 Groundwater Sampling Event

- TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride were not detected in samples collected from wells MW-1 through MW-7.
- PCE was not detected in the samples collected from wells MW-2 and MW-5.
- PCE was detected in wells MW-1, MW-3, MW4, MW-6 and MW-7 at concentrations ranging from 1.20 µg/L to 778 µg/L.
- The detected concentrations of PCE in well MW-3 (778 µg/L) and MW-4 (395 µg/L) exceeded the RBCs for vapor intrusion into buildings pathway for commercial chronic and acute receptors (130 and 330, respectively).
- The detected concentrations of PCE in wells MW-3, MW-4 and MW-6 exceeded residential tap water RBCs (not applicable under current site use scenarios). Well MW-6, which was 15 feet north of the property boundary, had a detected concentration of PCE (18.8 µg/L) slightly exceeding the residential receptor for ingestion and inhalation from tap water (12 µg/L). As mentioned above, concentrations of PCE in shallow groundwater upgradient and offsite of this location are expected to be below these residential RBCs.

4.4.3 October 2024 Groundwater Sampling Event

- TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride were not detected in samples collected from wells MW-1 through MW-7.

- PCE was not detected in the samples collected from well MW-5.
- PCE was detected in wells MW-1, MW-2, MW-3, MW4, MW-6 and MW-7 at concentrations ranging from 1.02 µg/L to 1,390 µg/L.
- The detected concentrations of PCE in well MW-3 (1,390 µg/L) and MW-4 (184 µg/L) exceeded the RBCs for vapor intrusion into buildings pathway for commercial chronic and/or acute receptors (130 and 330, respectively).
- The detected concentrations of PCE in wells MW-3, MW-4 and MW-6 exceeded residential tap water RBCs (not applicable under current site use scenarios). Well MW-6, which was 15 feet north of the property boundary, had a detected concentration of PCE (20.5 µg/L) slightly exceeding the residential receptor for ingestion and inhalation from tap water (12 µg/L). As mentioned above, concentrations of PCE in shallow groundwater upgradient and offsite of this location are expected to be below these residential RBCs.

4.4.4 January 2025 Groundwater Sampling Event

- TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride were not detected in samples collected from wells MW-1 through MW-7.
- PCE was not detected in the samples collected from well MW-5.
- PCE was detected in wells MW-1, MW-2, MW-3, MW4, MW-6 and MW-7 at concentrations ranging from 1.66 µg/L to 115 µg/L.
- The detected concentrations of PCE in wells MW-3, MW-4 and MW-6 exceeded tap water RBCs (not applicable under current site use scenarios). Well MW-6, which was 15 feet north of the property boundary, had a detected concentration of PCE (34.9 µg/L) slightly exceeding the residential receptor for ingestion and inhalation from tap water (12 µg/L). As mentioned above, concentrations of PCE in shallow groundwater upgradient and offsite of this location are expected to be below these residential RBCs.

5.0 Conclusions

As detailed above, GeoEngineers conducted a Data Gap Investigation at the former Mall 99 Dry Cleaner Site located at 972 North Pacific Highway, Woodburn, Oregon in accordance with the DEQ-approved work plan and with modifications discussed with DEQ in January 2025. The Data Gap Investigation included the installation of additional groundwater monitoring wells and sub-slab soil vapor monitoring points, as well as groundwater quality and vapor intrusion monitoring. The following conclusions were made based on the data collected to date.

- To date, the results of environmental sampling conducted at the Site (March and May of 2021 and April, July and October/November of 2024 and January 2025) have identified and/or confirmed the presence of select HVOCs in soil vapor, indoor air, outdoor air, soil and/or groundwater near the former dry-cleaning operation in unit 972.
- The results of a previous beneficial land and water use determination (GeoEngineers, 2021b) indicate that DEQ RBCs associated with vapor intrusion into commercial buildings (RBCwi and RBCsv) and/or direct contact by earth workers (RBCwe) are potentially applicable human health exposure scenarios at the Site.

- Regarding the vapor intrusion into commercial buildings exposure scenario, detected concentrations of PCE in some of the sub-slab soil vapor samples beneath unit 972 exceed the current RBCsv screening values (i.e., 1,600 $\mu\text{g}/\text{m}^3$ for chronic exposure and 4,000 $\mu\text{g}/\text{m}^3$ for acute exposure). However, the results of indoor and outdoor air sampling indicate that unit 972 building occupants are not being adversely impacted.
- The detected concentration of PCE in the soil vapor sample point SV-7 installed in January 2025 was two orders of magnitude less than the screening levels for vapor intrusion into buildings and only slightly above the method reporting limit. Soil vapor sample point SV-7 is located downgradient of the source and in the tenant space located adjacent to the 972 tenant space which had a coin operated laundry.
- Detected concentrations of PCE in groundwater exceed current RBCwi screening values (i.e., 130 $\mu\text{g}/\text{L}$ for chronic exposure and 330 $\mu\text{g}/\text{L}$ for acute exposure) during one or more events in monitoring wells MW-3 and MW-4 located southeast of unit 972. However, PCE was not detected or detected near the laboratory detection limit in downgradient and cross-gradient wells (MW-2, MW-5 and MW-7) indicating that the groundwater plume is relatively localized and confined to the southeastern portion of Site.
- The Site is devoid of sensitive ecological habitat as it is completely developed with buildings, asphalt-paved parking and drive lanes and landscaped areas. Subsequently, the Site data has not been compared to ecological screening values.

Based on the site assessment activities to date a no further action determination appears to be warranted and is formally requested.

6.0 Limitations

This report has been prepared for use by Khoury Development, LLC and their authorized agents. This report may be provided to regulatory agencies for review. No third parties should place legal reliance on this report. GeoEngineers has performed this data gap investigation in accordance with the scope and limitations of our proposal dated February 28, 2024 and January 21, 2025.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. The conclusions and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty, express or implied, applies to this report.

Please refer to Appendix C, Report Limitations and Guidelines for Use, for additional information pertaining to the use of this report.

7.0 References

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Tables

Table 1
Soil Vapor Chemical Analytical Results¹
Volatile Organic Compounds
Former Mall 99 Cleaners
Woodburn, Oregon

Sample Location	Sample Identification	Date	PID Screening Result (ppm)	ASTM 1946 (%)	VOCs ² (µg/m ³)					
				Helium	1,1-Dichloroethene	cis 1,2 Dichloroethene	trans 1,2 Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride
March 2021 Sampling Event										
SV-01	SV-01	3/5/2021	11.3	0.563	< 0.793	< 0.793	< 0.793	7,670	5.68	< 0.511
SV-02	SV-02	3/5/2021	<10	0.109	< 0.793	< 0.793	< 0.793	3,590	< 1.07	< 0.511
SV-03	SV-03	3/5/2021	<10	0.334	< 0.793	< 0.793	< 0.793	48.7	< 1.07	< 0.511
April and November 2024 Sampling Events										
SV-1	SV-1-042524	4/25/2024	<10	-- ³	< 51	< 51	< 51	22,000	< 69	< 33
	SV-1-042524 DUP	4/25/2024	<10	-- ³	< 52	< 52	< 52	22,000	< 70	< 33
	SV-1-11012024	11/1/2024	<10	ND	< 29	< 29	< 29	14,000	< 40	< 19
	SV-1-1101224 DUP	11/1/2024	<10	ND	< 29	< 29	< 29	14,000	< 40	< 19
	SV-1-01282025	1/28/2025	<10	ND	< 20	< 20	< 20	8,200	< 27	< 13
	DUP-01282025	1/28/2025	<10	ND	< 20	< 20	< 20	8,200	< 27	< 13
SV-2	SV-2-042524	4/25/2024	<10	-- ³	< 3.5	< 3.5	< 3.5	370	< 4.8	< 2.3
	SV-2-11012024	11/1/2024	<10	ND	< 4.1	< 4.1	< 4.1	400	< 5.5	< 2.6
	SV-2-01282025	1/28/2025	<10	ND	< 3.6	< 3.6	< 3.6	180	< 4.8	< 2.3
SV-3	SV-3-042524	4/25/2024	<10	-- ³	< 4.0	< 4.0	< 4.0	< 6.8	< 5.4	< 2.6
	SV-3-11012024	11/1/2024	<10	ND	< 4.0	< 4.0	< 4.0	< 6.8	< 5.4	< 2.6
SV-4	SV-4-042524	4/25/2024	<10	-- ³	< 3.9	< 3.9	< 3.9	200	< 5.3	< 2.5
	SV-4-11012024	11/1/2024	<10	ND	< 3.9	< 3.9	< 3.9	40	< 5.3	< 2.5
	SV-4-01282025	1/28/2025	<10	ND	< 3.6	< 3.6	< 3.6	30	< 4.9	< 2.3
SV-5	SV-5-042524	4/25/2024	<10	-- ³	< 4.0	< 4.0	< 4.0	110	< 5.4	< 2.6
	SV-5-11012024	11/1/2024	<10	0.18	< 4.8	< 4.8	< 4.8	26	< 6.4	< 3.1
SV-6	-- ⁴	--	--	--	--	--	--	--	--	
SV-7	SV-7-01282025	1/28/2025	<10	ND	< 3.7	< 3.7	< 3.7	13	< 5.0	< 2.4
Potentially Applicable DEQ Risk-Based Concentrations⁵										
Vapor Intrusion into Buildings										
Commercial Chronic					29,000	5,800	5,800	1,600	100	93
Commercial Acute					20,000	NE	80,000	4,000	210	130,000

Notes:

¹ Chemical analyses were performed by Pace National Analytical, Mt. Juliet, Tennessee in 2021 and Eurofins Air Toxics, Folsom, California in 2024 and 2025.

² Select Volatile Organic Compounds analyzed by U.S. Environmental Protection Agency (EPA) Method TO-15

³ The laboratory recirculated the Summa canisters prior to analyzing helium, but field leak detection did not indicate the potential for breakthrough.

⁴ SV-6 was used for differential pressure monitoring purposes and no soil vapor sampling was performed.

⁵ Oregon Department of Environmental Quality (DEQ) Risk Based Decision Making for the Remediation of Petroleum-Contaminated Sites, revised March 2024

ASTM = ASTM International Standard Practices; µg/m³ = micrograms per cubic meter; -- = Not Analyzed, PID = photoionization detector

VOCs = volatile organic compounds; NE = Not Established; ppm = parts per million; % = percent

<0.200 indicates analyte not detected above the method reporting limit presented.

Bold indicates the analyte was detected above laboratory reporting limit.

Gray Shading indicates that the detected analyte concentration was greater than one or more DEQ RBCs soil vapor.

Table 2
Air Chemical Analytical Results¹
Volatile Organic Compounds
Former Mall 99 Cleaners
Woodburn, Oregon

Sample Location	Sample Identification	Date	VOCs ² (µg/m ³)					
			1,1-Dichloroethene	cis 1,2 Dichloroethene	trans 1,2 Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride
Indoor Air								
IA-1	IA-1-042524	4/25/2024	< 0.085	0.29	< 0.85	47	0.46	< 0.055
	Corrected ³		-	-	-	46.06	-	-
	IA-1-11012024	11/1/2024	< 0.053	< 0.11	< 0.53	0.18 J	< 0.14	< 0.034
	IA-1-01282025	1/28/2025	< 0.094	< 0.19	< 0.94	< 0.32	< 0.26	< 0.061
IA-2	IA-2-042524	4/25/2024	< 0.053	< 0.11	< 0.53	0.24	< 0.14	< 0.034
	Corrected ³		-	-	-	< 0.00	-	-
	IA-2-11012024	11/1/2024	< 0.052	< 0.10	< 0.52	0.21	< 0.14	< 0.033
	IA-2-01282025	1/28/2025	< 0.055	< 0.11	< 0.55	< 0.19	< 0.15	< 0.036
Outdoor Air								
OA-1	OA-1-042524	4/25/2024	< 0.052	< 0.10	3.9	0.94	< 0.14	< 0.033
	OA-1-11012024	11/1/2024	< 0.049	< 0.10	< 0.49	< 0.17	< 0.13	< 0.032
	OA-1-01282025	1/28/2025	< 0.045	< 0.090	< 0.45	< 0.15	< 0.12	< 0.029
Potentially Applicable DEQ Risk-Based Concentrations³								
Vapor Intrusion into Buildings								
Commercial Chronic			880	180	180	47	3.0	2.8
Commercial Acute			600	NE	2,400	120	6.3	3,900

Notes:

¹ Chemical analyses were performed by Eurofins Air Toxics, Folsom, California.

² Select Volatile Organic Compounds analyzed by U.S. Environmental Protection Agency (EPA) Method TO-15-SIM

³ Per guidance the detected concentrations of VOCs in outdoor air were subtracted from the detected concentrations of VOCs in indoor air.

⁴ Oregon Department of Environmental Quality (DEQ) Risk Based Decision Making for the Remediation of Petroleum-Contaminated Sites, revised March 2024

µg/m³ = micrograms per cubic meter; - = Not Applicable

VOCs = volatile organic compounds; NE = Not Established

<0.200 indicates analyte not detected above the method reporting limit presented.

Bold indicates the analyte was detected above laboratory reporting limit.

Table 3
Soil Chemical Analytical Results¹
Volatile Organic Compounds
Former Mall 99 Cleaners
Woodburn, Oregon

Sample Location	Sample Identification	Date	Sample Depth (feet bgs)	PID Screening Result (ppm)	Sheen	VOCs ² (mg/kg)						
						1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride	
2021 Sampling Event												
MW-1	MW-1 (3-4')	5/10/2021	3 - 4	0.7	NS	< 0.00102	< 0.00123	< 0.00175	0.0287	< 0.00098	< 0.00195	C3 J3
	MW-1 (5-6')	5/10/2021	5 - 6	0.4	NS	< 0.00105	< 0.00127	< 0.0018	0.00976	< 0.00101	< 0.00201	C3 J3
	MW-1 (9-10')	5/10/2021	9 - 10	0.2	NS	< 0.00107	< 0.0013	< 0.00184	0.0265	< 0.00103	< 0.00205	C3 J3
MW-2	MW-2 (3-4')	5/11/2021	3 - 4	0.5	NS	< 0.00096	< 0.00116	< 0.00165	< 0.00142	< 0.00093	< 0.00184	C3 J3
	MW-2 (6-7')	5/11/2021	6 - 7	0.1	NS	< 0.00095	< 0.00115	< 0.00163	< 0.0014	< 0.00092	< 0.00182	C3 J3
	MW-2 (10-11')	5/11/2021	10 - 11	1.0	NS	< 0.00097	< 0.00118	< 0.00167	< 0.00143	< 0.00094	< 0.00186	C3 J3
MW-3	MW-3 (2-3')	5/10/2021	2 - 3	2.5	NS	< 0.00098	< 0.00119	< 0.00169	0.0250	< 0.00095	< 0.00188	C3 J3
	MW-3 (5-6')	5/10/2021	5 - 6	0.9	NS	< 0.00102	< 0.00123	< 0.00175	< 0.00151	< 0.00098	< 0.00195	C3 J3
	MW-3 (9-10')	5/10/2021	9 - 10	0.5	NS	< 0.00099	< 0.0012	< 0.00171	0.00423	< 0.00096	< 0.0019	C3 J3
MW-4	MW-4 (4-5')	5/10/2021	4 - 5	0.8	NS	< 0.00104	< 0.00126	< 0.00179	< 0.00154	< 0.00101	< 0.002	C3 J3
	MW-4 (7-8')	5/10/2021	7 - 8	1.0	NS	< 0.00104	< 0.00127	< 0.00179	< 0.00154	< 0.00101	< 0.002	C3 J3
	MW-4 (9-10')	5/10/2021	9 - 10	1.2	NS	< 0.00095	< 0.00115	< 0.00162	< 0.0014	< 0.00091	< 0.00181	C3 J3
2024 Sampling Event												
MW-5	MW-5 (4-5)	4/24/2024	4-5	<1.0	NS	< 0.0375	< 0.0375	< 0.0375	< 0.0375	< 0.0375	< 0.0375	
	MW-5 (7.5-8.5)	4/24/2024	7.5-8.5	<1.0	NS	< 0.0392	< 0.0392	< 0.0392	< 0.0392	< 0.0392	< 0.0392	
MW-6	MW-6 (4-5)	4/24/2024	4-5	<1.0	NS	< 0.0365	< 0.0365	< 0.0365	< 0.0365	< 0.0365	< 0.0365	
	MW-6 (8.5-9.5)	4/24/2024	8.5-9.5	<1.0	NS	< 0.0378	< 0.0378	< 0.0378	< 0.0378	< 0.0378	< 0.0378	
MW-7	MW-7 (3-4)	4/24/2024	3-4	<1.0	NS	< 0.0342	< 0.0342	< 0.0342	< 0.0342	< 0.0342	< 0.0342	
	MW-7 (8.5-9.5)	4/24/2024	8.5-9.5	<1.0	NS	< 0.0388	< 0.0388	< 0.0388	< 0.0388	< 0.0388	< 0.0388	
Potentially Applicable DEQ Risk-Based Concentrations³												
Soil Ingestion, Dermal Contact and Inhalation												
Residential (Pathway Not Applicable)						1,800	160	1,600	220	6.7	0.36	
Urban Residential (Pathway Not Applicable)						3,500	310	3,100	540	17	0.8	
Occupational (Pathway Not Applicable)						29,000	2,300	23,000	1,000	51	4.4	
Construction Worker						13,000	710	7,100	1,800	130	34	
Excavation Worker						370,000	20,000	200,000	50,000	3,700	950	
Soil Volatilization to Outdoor Air												
Residential (Pathway Not Applicable)						NE	NE	NE	NE	15	5.3	
Urban Residential (Pathway Not Applicable)						NE	NE	NE	NE	33	6.5	
Occupational						NE	NE	NE	NE	96	89	
Soil Leaching to Groundwater												
Residential (Pathway Not Applicable)						6.7	0.63	7	0.46	0.013	0.00057	
Urban Residential (Pathway Not Applicable)						25	2.4	27	1.9	0.053	0.0014	
Occupational						32	4.5	51	1.9	0.087	0.01	

Notes:

¹ Chemical analyses were performed by Pace Analytical, Mt. Juliet, Tennessee in 2021 and Apex Labs, Tigard, Oregon in 2024.

² Volatile organic compounds analysis by EPA 8260D.

³ Oregon Department of Environmental Quality (DEQ) Risk Based Decision Making for the Remediation of Petroleum-Contaminated Sites, revised August 2023.

mg/kg = milligrams per kilogram, bgs = below ground surface; NE = Not Established; ppm = parts per million

C3: The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable; J3: The associated batch QC was outside the established quality control range for precision.

<0.00102 indicates analyte not detected above the method reporting limit.

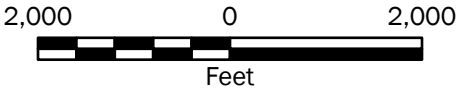
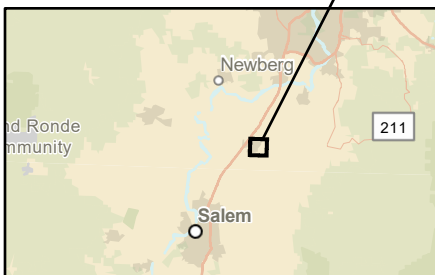
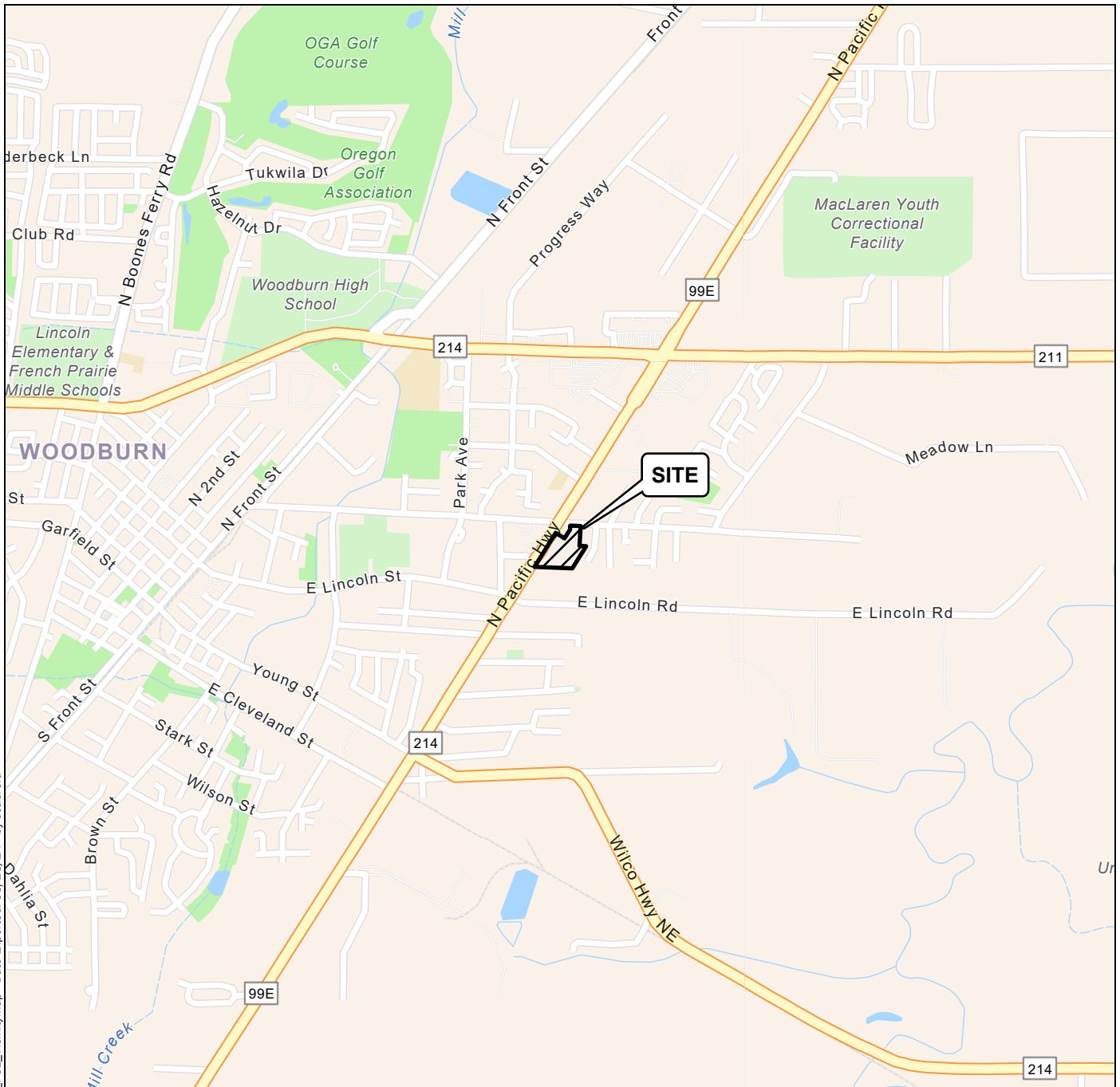
Bold indicates the analyte was detected above laboratory detection limit (MDL).

Table 4
Groundwater Chemical Analytical Results¹
Field Parameters and Volatile Organic Compounds
Former Mall 99 Cleaners
Woodburn, Oregon

Monitoring Well	Sample Identification	Date	Top of Casing Elevation ³	Depth to Water	Groundwater Elevation	Field Measured Parameters						VOCs ² (µg/L)					
						Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	pH	Oxidation Reduction Potential (mV)	Turbidity (NTU)	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride
MW-1	MW-1-051121	5/11/2021	100.28	10.82	89.46	16.4	6.37	188.6	6.89	-76.2	6.78	< 0.188	< 0.126	< 0.149	19.6	< 0.19	< 0.234
	MW-1	4/29/2024		8.60	91.68	14.3	8.78	136.8	6.92	182.1	21.91	< 0.400	< 0.400	< 0.400	5.45	< 0.400	< 0.200
	MW-1	7/12/2024		11.72	88.56	17.1	6.67	153.6	6.63	156.9	59.36	< 0.400	< 0.400	< 0.400	4.19	< 0.400	< 0.200
	MW-1	10/31/2024		13.89	86.39	15.9	7.77	110.0	6.69	113.0	57.44	< 0.400	< 0.400	< 0.400	3.80	< 0.400	< 0.200
	MW-1-01292025	1/29/2025		9.23	91.05	14.8	7.46	147.0	6.31	151.8	12.01	< 0.400	< 0.400	< 0.400	5.73	< 0.400	< 0.200
MW-2	MW-2-051121	5/11/2021	100.18	10.68	89.50	17.0	6.75	292.4	6.75	-61.8	21.05	< 0.188	< 0.126	< 0.149	< 0.3	< 0.19	< 0.234
	MW-2	4/29/2024		8.77	91.41	14.8	7.79	190.1	6.77	173.5	22.06	< 0.400	< 0.400	< 0.400	< 0.400	< 0.400	< 0.200
	MW-2	7/12/2024		11.62	88.56	17.8	1.83	288.1	6.30	132.2	9.91	< 0.400	< 0.400	< 0.400	1.02	< 0.400	< 0.200
	MW-2	10/31/2024		13.81	86.37	15.3	1.83	153.1	6.66	73.8	12.33	< 0.400	< 0.400	< 0.400	< 0.400	< 0.400	< 0.200
	MW-2-01292025	1/29/2025		9.55	90.63	14.4	4.84	231.0	6.31	151.7	9.90	< 0.400	< 0.400	< 0.400	1.66	< 0.400	< 0.200
MW-3	MW-3-051121	5/11/2021	100.21	10.66	89.55	16.9	7.26	122.0	7.29	-103.1	108.44	< 0.188	< 0.126	< 0.149	1,630	< 0.19	< 0.234
	MW-3	4/29/2024		8.64	91.57	14.7	8.64	109.3	6.91	216.1	22.61	< 0.800	< 0.800	< 0.800	159	< 0.800	< 0.400
	MW-3 Dup			11.59	88.62	20.4	8.19	110.8	6.67	132.0	42.44	< 0.800	< 0.800	< 0.800	778	< 0.800	< 0.400
	MW-3	7/12/2024		13.77	86.44	16.2	1.04	144.3	6.79	12.8	13.91	< 2.00	< 2.00	< 2.00	1,390	< 2.00	< 1.00
	MW-3 DUP	10/31/2024		9.30	90.91	16.4	7.18	138.4	6.60	152.7	36.11	< 0.800	< 0.800	< 0.800	92.9	< 0.800	< 0.400
	MW-3	1/29/2025		11.55	88.63	18.2	6.93	133.9	6.38	161.0	54.17	< 0.400	< 0.400	< 0.400	15.8	< 0.400	< 0.200
	DUP-1-01292025			13.71	86.47	-	-	-	-	-	-	< 0.400	< 0.400	< 0.400	20.5	< 0.400	< 0.200
MW-4	MW-4-051121	5/11/2021	99.84	10.28	89.56	16.8	4.85	185.0	7.09	-130.2	26.38	< 0.188	< 0.126	< 0.149	158	< 0.19	< 0.234
MW-4	4/29/2024	8.29		91.55	14.1	7.11	185.2	7.27	204.2	1.40	< 0.400	< 0.400	< 0.400	855	< 0.400	< 0.200	
MW-4	7/12/2024	11.24		88.60	19.5	6.95	207.1	7.05	134.9	128.55	< 0.800	< 0.800	< 0.800	384	< 0.800	< 0.400	
MW-4 DUP		13.46		86.38	15.7	7.42	220.2	6.99	88.9	8.84	< 0.400	< 0.400	< 0.400	184	< 0.400	< 0.200	
MW-4	10/31/2024	8.95		90.89	15.9	7.38	256.4	6.82	164.7	11.96	< 0.400	< 0.400	< 0.400	73.5	< 0.400	< 0.200	
MW-5	MW-5	4/29/2024	99.90	8.24	91.66	14.0	6.98	105.0	6.76	216.7	14.82	< 0.400	< 0.400	< 0.400	< 0.400	< 0.400	< 0.200
MW-5	7/12/2024	11.30		88.60	20.5	5.96	114.6	6.49	173.7	22.01	< 0.400	< 0.400	< 0.400	< 0.400	< 0.400	< 0.200	
MW-5	10/31/2024	13.56		86.34	17.7	5.73	132.3	6.75	106.7	13.91	< 0.400	< 0.400	< 0.400	< 0.400	< 0.400	< 0.200	
MW-5-01292025	1/29/2025	9.08		90.82	15.9	6.13	124.0	6.40	164.2	11.96	< 0.400	< 0.400	< 0.400	< 0.400	< 0.400	< 0.200	
MW-6	MW-6	4/29/2024	100.18	8.34	91.84	14.4	7.63	115.4	6.59	92.2	5.82	< 0.400	< 0.400	< 0.400	14.3	< 0.400	< 0.200
	MW-6	7/12/2024		11.55	88.63	18.2	6.93	133.9	6.38	161.0	54.17	< 0.400	< 0.400	< 0.400	15.8	< 0.400	< 0.200
	MW-6	10/31/2024		13.71	86.47	-	-	-	-	-	-	< 0.400	< 0.400	< 0.400	20.5	< 0.400	< 0.200
	MW-6-01292025	1/29/2025		8.97	91.21	14.1	7.82	120.7	6.23	132.6	58.81	< 0.400	< 0.400	< 0.400	34.9	< 0.400	< 0.200
MW-7	MW-7	4/29/2024	100.74	9.22	91.52	13.2	8.60	186.6	6.77	215.7	2.77	< 0.400	< 0.400	< 0.400	2.20	< 0.400	< 0.200
	MW-7	7/12/2024		12.09	88.65	17.1	6.89	205.4	6.46	171.7	7.28	< 0.400	< 0.400	< 0.400	3.44	< 0.400	< 0.200
	MW-7	10/31/2024		14.32	86.42	-	-	-	-	-	-	< 0.400	< 0.400	< 0.400	9.39	< 0.400	< 0.200
	MW-7-01292025	1/29/2025		9.82	90.92	13.5	8.62	216.9	6.40	171.1	13.78	< 0.400	< 0.400	< 0.400	3.87	< 0.400	< 0.200
Potentially Applicable DEQ Risk-Based Concentrations⁴																	
Groundwater Ingestion and Inhalation from Tap Water																	
Residential (Pathway Not Applicable)						-	-	-	-	-	-	280	36	360	12	0.49	0.027
Urban Residential (Pathway Not Applicable)						-	-	-	-	-	-	1,100	140	1,400	49	2.0	0.066
Occupational (Pathway Not Applicable)						-	-	-	-	-	-	1,400	260	2,600	48	3.3	0.49
Groundwater Volatilization to Outdoor Air																	
Residential (Pathway Not Applicable)						-	-	-	-	-	-	570,000	NE	NE	64,000	3,300	350
Urban Residential (Pathway Not Applicable)						-	-	-	-	-	-	570,000	NE	NE	150,000	6,900	430
Occupational						-	-	-	-	-	-	2,400,000	NE	NE	NE	20,000	5,900
Groundwater Vapor Intrusion into Buildings																	
Commercial Chronic						-	-	-	-	-	-	1,300	1,800	750	130	13	3.3
Commercial Acute						-	-	-	-	-	-	890	NE	10,000	330	27	4,600
Groundwater in Excavation																	
Construction and Excavation Worker						-	-	-	-	-	-	44,000	18,000	180,000	5,600	430	960

Notes:
¹ Chemical analyses were performed by Pace Analytical, Mt. Juliet, Tennessee in 2021 and Apex Labs, Tigard, Oregon in 2024 and 2025.
² Volatile organic compounds analysis by EPA 8260D.
³ The elevations are referenced to a fixed point with an arbitrary surface elevation of 100.00 feet.
⁴ Oregon Department of Environmental Quality (DEQ) Risk Based Decision Making for the Remediation of Petroleum-Contaminated Sites, revised August 2023 and March 2024 (for vapor intrusion only).
°C = degrees Celsius; mg/L = milligrams per liter; µS/cm = microsiemens per centimeter; mV = millivolts; NTU = nephelometric turbidity unit
µg/L = micrograms per liter; depth and elevations reported in feet; NE = Not Established
<0.188 indicates analyte not detected above the method reporting limit.
Bold indicates the analyte was detected above laboratory detection limit (MDL).
Gray Shading indicates that the detected analyte concentration was greater than one or more DEQ RBCs for groundwater.

Figures



Vicinity Map

Former Mall 99 Cleaners
 976 North Pacific Highway
 Woodburn, Oregon 97301



Figure 1

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

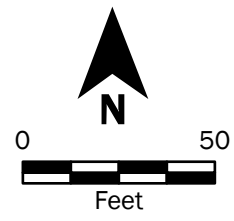
Data Source: ESRI
 Projection: NAD 1983 UTM Zone 10N

P:\24\24986001\GIS\24986001_Project\aprx\24986001_F01_VicinityMap Date Exported: 05/23/24 by coabrera



- Legend**
- MW-1 Monitoring Well Number
 - SV-1 Sub-Slab Soil Vapor Location
 - IA-1/OA-1 Indoor/Outdoor Air Sample Location

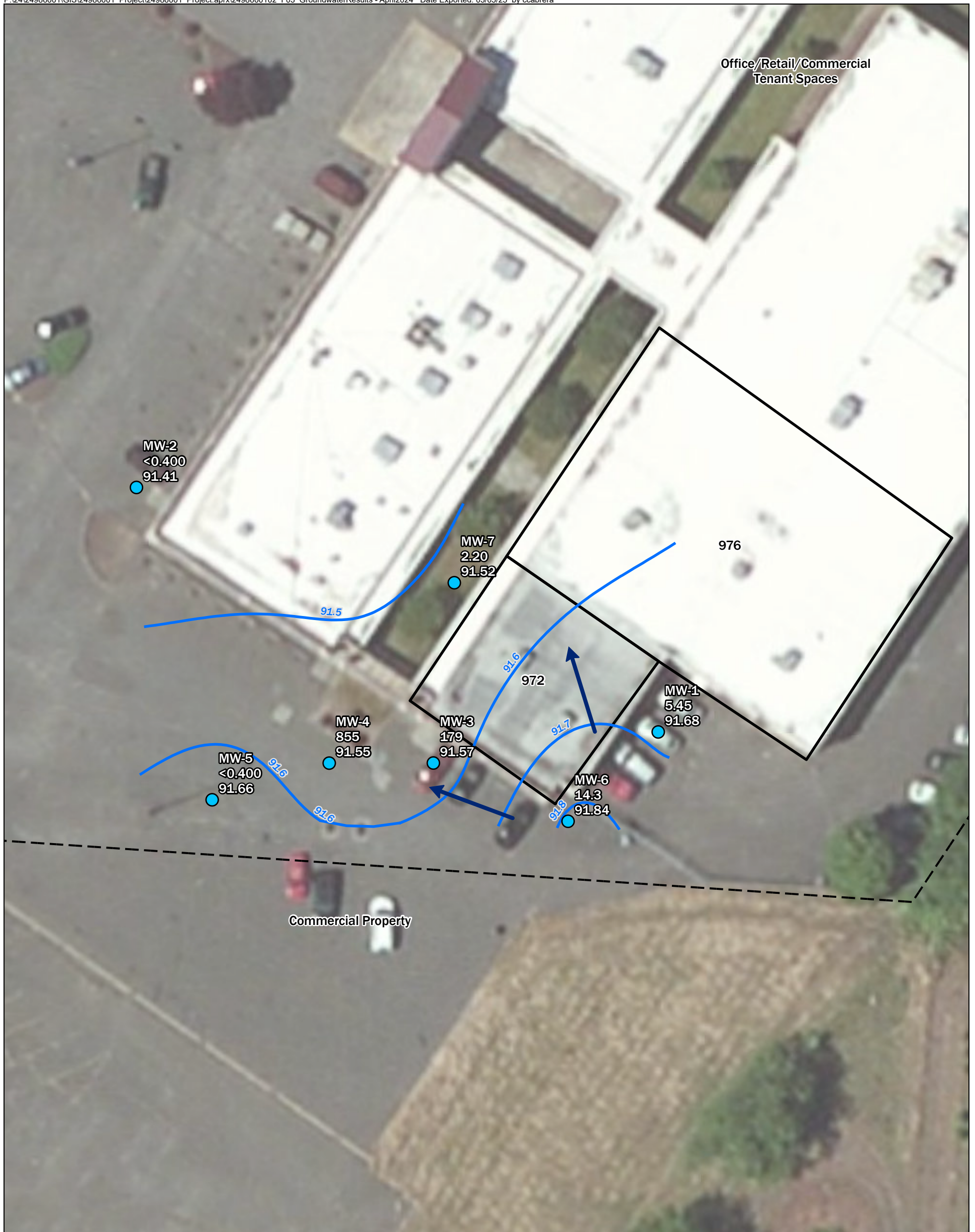
Approximate Property Boundary



* = IA-1 was moved during the January 2025 event only

Notes:
 1. The locations of all features shown are approximate.
 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
 Data Source: ESRI Clarity, Streets from Marion County GIS.
 Contours generated by Surfer using Kriging Interpolation method.
 Projection: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl




Site Plan and Exploration Locations	
Former Mall 99 Cleaners 976 North Pacific Highway Woodburn, Oregon 97301	
	Figure 2



Legend

MW-1
5.45
91.68

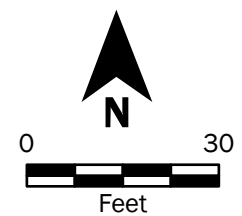
Monitoring Well Number with PCE Concentration and Groundwater Elevation (April 2024)

-  Inferred Groundwater Contour (0.10 foot)
-  Groundwater Flow Direction
-  Approximate Property Boundary

Tetrachloroethene (PCE) concentration in micrograms per Liter

Groundwater elevation in feet.

NM = not measured



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: ESRI Clarity, Streets from Marion County GIS.
Contours generated by Surfer using Kriging Interpolation method.

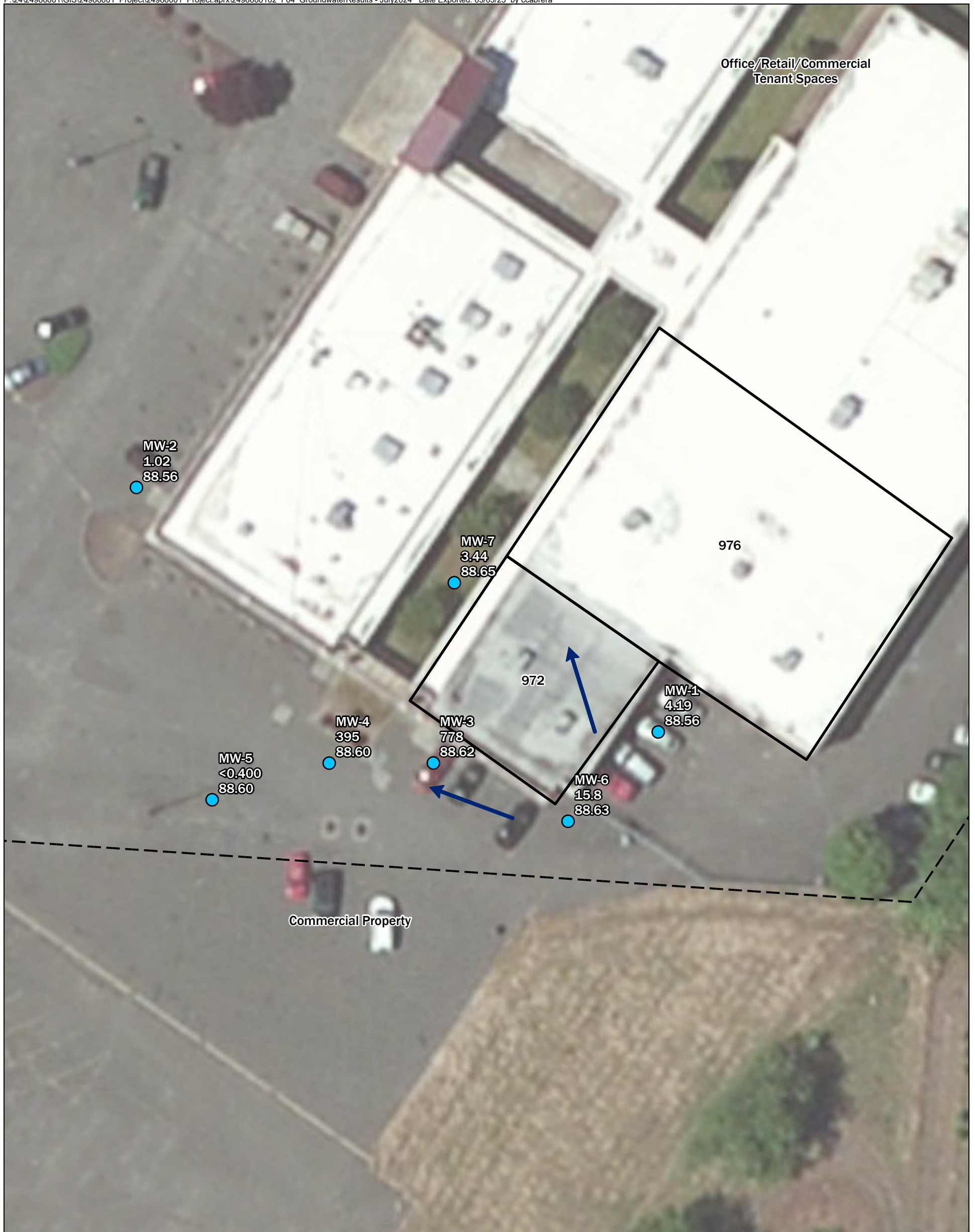
Projection: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Groundwater Results - April 2024

Former Mall 99 Cleaners
976 North Pacific Highway
Woodburn, Oregon 97301



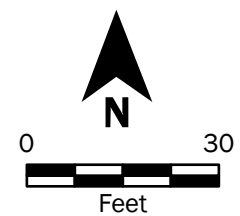
Figure 3



Legend

- MW-1
4.19
88.56
 Monitoring Well Number with PCE Concentration and Groundwater Elevation (July 2024)
- Groundwater Flow Direction
- Approximate Property Boundary

- Tetrachloroethene (PCE) concentration in micrograms per Liter
- Groundwater elevation in feet.
- NM = not measured



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: ESRI Clarity, Streets from Marion County GIS.
Contours generated by Surfer using Kriging Interpolation method.

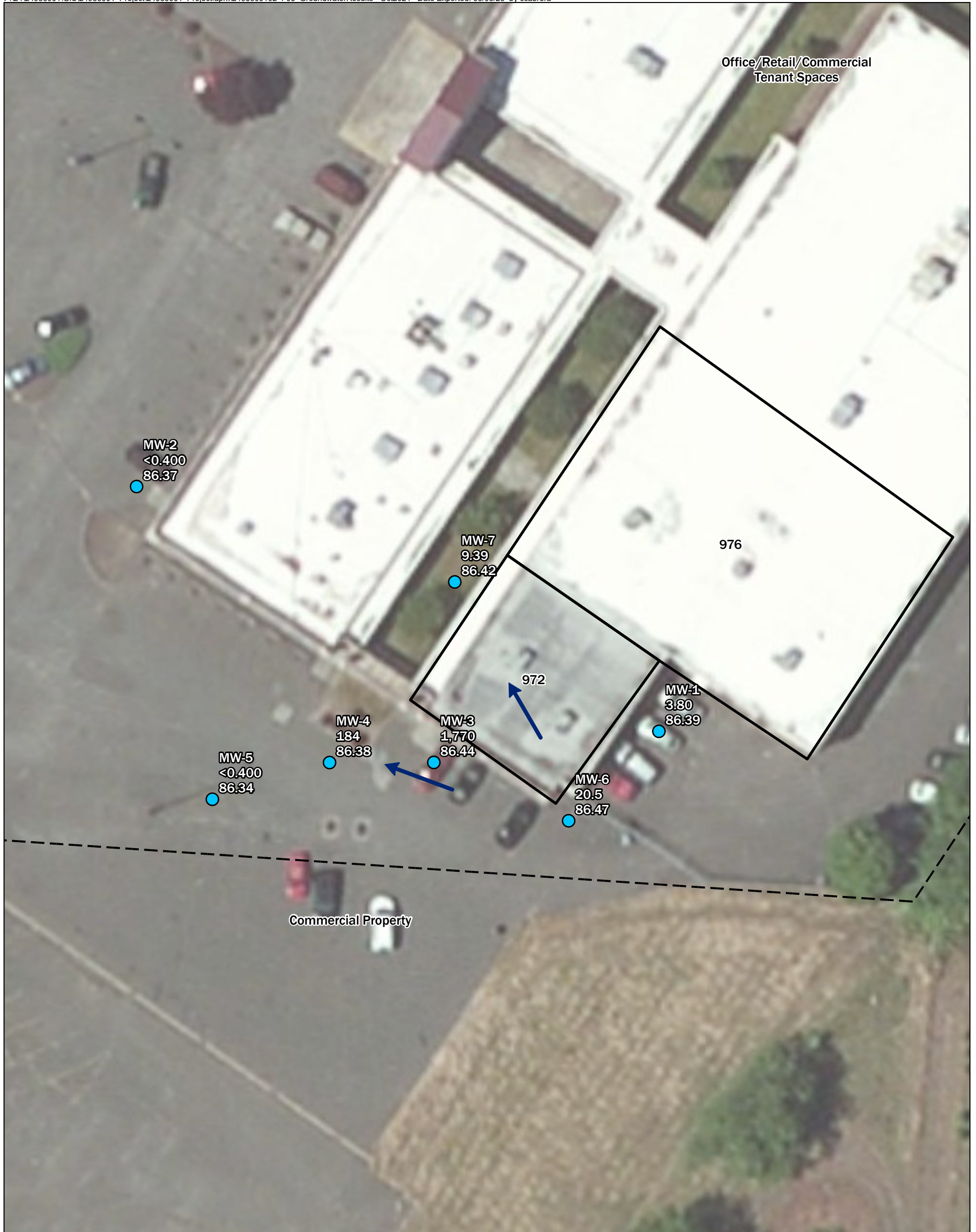
Projection: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Groundwater Results - July 2024

Former Mall 99 Cleaners
976 North Pacific Highway
Woodburn, Oregon 97301



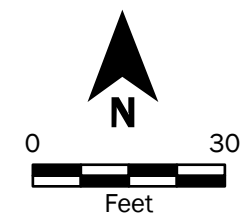
Figure 4



Legend

- MW-1
3.80
86.39
- Monitoring Well Number with PCE Concentration and Groundwater Elevation (October 2024)
- Groundwater Flow Direction
- Approximate Property Boundary

Tetrachloroethene (PCE) concentration in micrograms per Liter
 Groundwater elevation in feet.
 NM = not measured



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: ESRI Clarity, Streets from Marion County GIS.
 Contours generated by Surfer using Kriging Interpolation method.

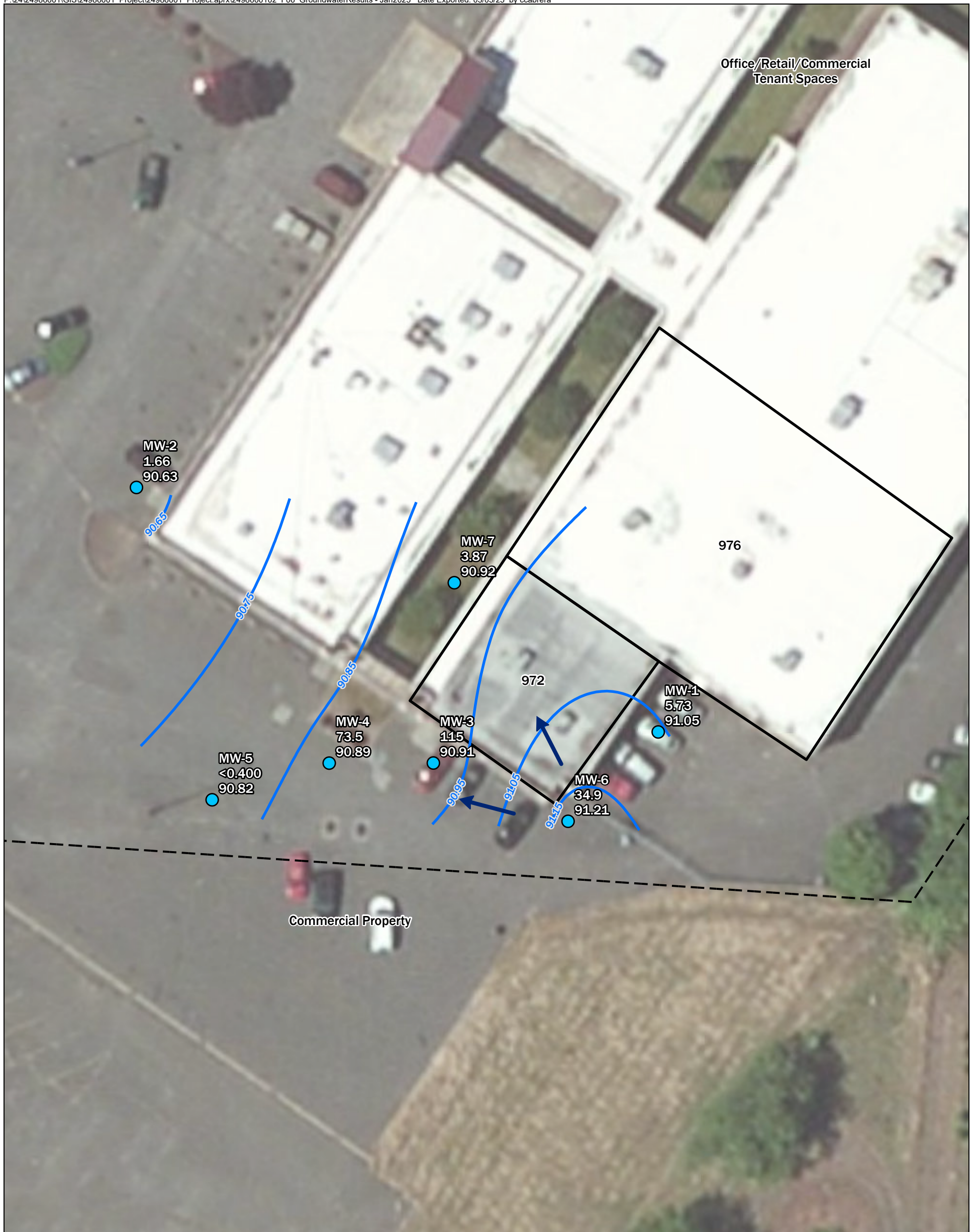
Projection: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Groundwater Results - October 2024

Former Mall 99 Cleaners
 976 North Pacific Highway
 Woodburn, Oregon 97301



Figure 5



Legend

MW-1
3.80
86.39

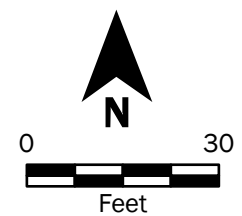
Monitoring Well Number with PCE Concentration and Groundwater Elevation (January 2025)

- Inferred Groundwater Contour (0.10 foot)
- Groundwater Flow Direction
- Approximate Property Boundary

Tetrachloroethene (PCE) concentration in micrograms per Liter

Groundwater elevation in feet.

NM = not measured



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: ESRI Clarity, Streets from Marion County GIS.
Contours generated by Surfer using Kriging Interpolation method.

Projection: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Groundwater Results - January 2025

Former Mall 99 Cleaners
976 North Pacific Highway
Woodburn, Oregon 97301



Figure 6

Appendices

Appendix A

Field Procedures and Boring/Well Construction Logs

Appendix A

Field Procedures and Boring/Well Construction Logs

UNDERGROUND UTILITY LOCATE

Prior to drilling activities, a public utility notification service was contacted to mark the public utilities in the exploration area, rights-of-way and easements. In addition, a private underground utility locate service was contracted (APS Locates) to identify any subsurface utilities and/or potential underground physical hazards at the proposed boring locations.

SUB-SLAB SOIL VAPOR PROBE INSTALLATION

Sub-slab soil vapor samples were collected inside the building using Vapor Pin™ sampling devices. The Vapor Pins™ are installed following the manufacturers' standard operating procedures (SOPs).

General installation procedures for the sub-slab sampling device were as follows:

- Check for buried obstacles (pipes, electrical lines, etc.) prior to proceeding. A subcontractor performed a private utility locate to clear the sub-slab soil vapor sample locations.
- Set up vacuum to collect drill cuttings.
- Drill a 5/8-inch-diameter hole through the slab and approximately 1 inch into the underlying soil to form a void.
- Remove the drill bit, brush the hole with the bottle brush and remove the loose cuttings with the vacuum.
- Place the lower end of the sampling device assembly into the drilled hole. Place the small hole located in the handle of the extraction/installation tool over the sampling device to protect the barb fitting and cap and tapped the sampling device into place using a dead blow hammer. Make sure the extraction/installation tool is aligned parallel to the sampling device to avoid damaging the barb fitting.
- During installation, the silicone sleeve forms a slight bulge between the slab and the sample device shoulder creating a seal. Place a protective cap on sampling device to prevent vapor loss prior to sampling.
- Allow at least 2 hours for the sub-slab soil vapor conditions to equilibrate prior to sampling.

SUB-SLAB SOIL VAPOR SAMPLING PROCEDURE

The following procedure was followed to collect sub-slab soil vapor samples:

- Connect new fluoropolymer (Teflon®) tubing to the sub-slab soil vapor probe, using the barb fitting on the top of the sampling device.
- Connect the tubing (aboveground) to a sampling manifold.
- Vacuum test the sampling manifold (shut-in test) by briefly introducing a vacuum to the aboveground portion of the sampling train and checking for loss of vacuum. If vacuum loss is observed, connections and fittings in the sample train are checked and adjusted, then vacuum-tested again. This test is repeated until the sampling train has demonstrated that tightness is achieved.

- The sampling train (aboveground and belowground components) is enshrouded in a helium rich environment and then purged using a graduated syringe. Purge volumes are calculated based on the graduations on the syringe and the volume of the soil vapor probe and sample train.
- The soil vapor sample is obtained using a laboratory provided 1-liter evacuated Summa canister (with approximately 30 inches of mercury vacuum set by the laboratory) with a regulated flow rate of less than or equal to approximately 200 milliliters per minute (mL/min). The canister is filled with soil vapor for approximately 5 minutes or until a vacuum equivalent of approximately 5 inches of mercury remains in the Summa canister, whichever comes first. The initial and final canister vacuums are recorded in the field notebook/report.

SOIL SAMPLING

Exploratory borings were advanced using a track-mounted, direct-push drill rig operated by Xavier Environmental (Xavier) of Portland, Oregon. Soil samples were obtained continuously from each direct-push exploration using a 5-foot-long, 2-inch-diameter piston sampler lined with acrylic sleeves. The sealed piston sampler allows for the collection of soil samples from discrete depth intervals without interference from overlying soil.

A GeoEngineers representative visually classified the soil encountered in each boring in general accordance with ASTM International (ASTM) Standard Practices Test Method D 2488-17. Boring logs are included in this appendix, as shown in Figures A-1 through A-4.

The sampling equipment was decontaminated before each boring using a Liqui-Nox® solution wash and a distilled water rinse. Soil samples were obtained for field screening and potential chemical analysis from the sampler using new nitrile gloves. A portion of each sample was placed in laboratory-prepared sample jars for potential chemical analysis. The remaining portion of each sample was used for field screening. Samples submitted for chemical analysis are shown on the boring logs (indicated by CA = Chemical Analysis). The soil samples were placed in a cooler with ice for transport to the laboratory. Standard chain-of-custody procedures were followed in transporting the soil samples to the laboratory.

FIELD SCREENING OF SOIL SAMPLES

Soil samples obtained from the borings were screened in the field for evidence of contamination using: (1) visual examination; (2) sheen screening; and/or (3) photoionization detector (PID). The results of headspace and sheen screening are included in the boring logs and in Table 1 for soil samples tested by chemical analysis.

Visual screening consists of inspecting the soil for stains indicative of petroleum-related contamination. Visual screening is generally more effective when contamination is related to heavy petroleum hydrocarbons, such as motor oil or hydraulic oil, or when hydrocarbon concentrations are high. Sheen screening and headspace vapor screening are more sensitive methods that have been effective in detecting contamination at concentrations less than regulatory cleanup guidelines. Sheen screening involves placing soil in a pan of water and observing the water surface for signs of sheen. Sheen classifications are as follows:

No Sheen (NS)	No visible sheen on water surface.
Slight Sheen (SS)	Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly.
Moderate Sheen (MS)	Light to heavy sheen, may have some color/iridescence; spread is irregular to flowing; few remaining areas of no sheen on water surface.
Heavy Sheen (HS)	Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

Headspace vapor screening involves placing a soil sample in a plastic sample 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 in the bag and the instrument measures the concentration of combustible vapor in the air removed from the sample headspace. The PID measures concentrations in ppm (parts per million) and is calibrated to isobutylene. The PID is designed to quantify combustible gas and organic vapor concentrations up to 15,000 ppm. Field screening results are site-specific and vary with soil type, soil moisture content, temperature and type of contaminant.

MONITORING WELL CONSTRUCTION, DEVELOPMENT AND SURVEYING

The monitoring wells were constructed in accordance with Oregon Department of Environmental Quality – Groundwater Monitoring Well Drilling, Construction and Decommissioning guidance document. All monitoring well records were submitted in accordance with Oregon DEQ monitoring well construction standards. Monitoring well installations were observed and documented by a GeoEngineers field representative on a monitoring well construction record form.

The monitoring wells were installed using direct-push drilling equipment and were constructed of 2-inch-diameter, Schedule 40 polyvinyl chloride (PVC) casing and 0.01-inch slot width well screens. Well screen depths were based on groundwater conditions observed in the field such that the top of the shallow water table intercepted the well screen. A silica-sand filter pack was installed around the well screen from the base of the well to approximately 2 feet above the top of the well screen. Each well was completed with a bentonite seal and a flush-mount surface monument. A lockable cap was installed in the top of the PVC well casing. A concrete surface seal was placed around the monument at the ground surface.

Each monitoring well was developed to remove water introduced into the well during drilling (if any), to stabilize the filter pack and formation materials surrounding the well screen and restore the hydraulic connection between the well screen and the surrounding soil. Each well was developed using surging and pumping techniques; wells were surged and then pumped until the development water was relatively clear and free from suspended solids. Two to five gallons of water were purged from each monitoring well (MW-1 through MW-4). The total depth of the well was measured and recorded prior to and after development. Development purge water was collected and stored on site in drums.

The locations of the monitoring wells were established in the field using a hand-held iPad with global positioning system (GPS) software and subsequently surveyed with a laser-level referencing an arbitrary 100-foot point located on site.

GROUNDWATER MONITORING

Depth to Groundwater

The depths to the groundwater table relative to ground surface were measured using an oil-water interface probe. The interface probe was cleaned with a Liqui-Nox® solution wash and a distilled water rinse prior to use in each well.

Groundwater Sampling

Following depth to groundwater measurements, groundwater samples were collected from the installed monitoring wells consistent with the U.S. Environmental Protection Agency's (EPA) low-flow groundwater sampling procedure, as described in EPA (2017) and Puls and Barcelona (1996). Groundwater purging and sampling was performed using a peristaltic pump with new polyethylene tubing connected to a flow-through cell on wells MW-1 through MW-7. During purging activities, water quality parameters, including pH, specific conductivity, oxidation reduction potential, dissolved oxygen (DO), turbidity and temperature were measured using a calibrated multi-parameter meter attached to the flow-through cell. Water quality parameters were recorded on a groundwater sampling form. Groundwater samples were collected after: (1) water quality parameters stabilized; or (2) a maximum purge time of 30 minutes was achieved. During purging and sampling, the purge rate did not exceed approximately 500 milliliters per minute. Water quality parameter stabilization criteria included the following:

- Turbidity: ± 10 percent for values greater than 5 nephelometric turbidity units (NTUs)
- Conductivity: ± 3 percent
- pH: ± 0.1 unit
- Temperature: ± 3 percent
- DO: ± 10 percent

Groundwater samples were transferred in the field to laboratory-prepared sample containers and kept cool in an ice-chilled cooler during transport to the testing laboratory. Chain-of-custody procedures were observed from the time of sample collection to delivery to the testing laboratory.

INVESTIGATIVE WASTE DISPOSAL

Drill cuttings and decontamination/purge water generated during drilling and sampling activities were temporarily stored on site in labeled 55-gallon drums. A subcontractor disposed of the drums as an F-listed hazardous waste.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS <small>(LITTLE OR NO FINES)</small>		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
		GRAVELS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	SAND AND SANDY SOILS	CLEAN SANDS <small>(LITTLE OR NO FINES)</small>		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
		SANDS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

Sampler Symbol Descriptions

	Modified California Sampler (6-inch sleeve) or Dames & Moore
	Standard Penetration Test (SPT)
	Shelby tube
	Piston
	Direct-Push
	Bulk or grab
	Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

"P" indicates sampler pushed using the weight of the drill rig.

"WOH" indicates sampler pushed using the weight of the hammer.

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS		TYPICAL DESCRIPTIONS
GRAPH	LETTER	
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/Quarry Spalls
	SOD	Sod/Forest Duff
	TS	Topsoil

Groundwater Contact



Measured groundwater level in exploration, well, or piezometer



Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata

Approximate contact between soil strata

Material Description Contact

Contact between geologic units

Contact between soil of the same geologic unit

Laboratory / Field Tests

%F	Percent fines
%G	Percent gravel
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DD	Dry density
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
Mohs	Mohs hardness scale
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PL	Point load test
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
UU	Unconsolidated undrained triaxial compression
VS	Vane shear

Sheen Classification

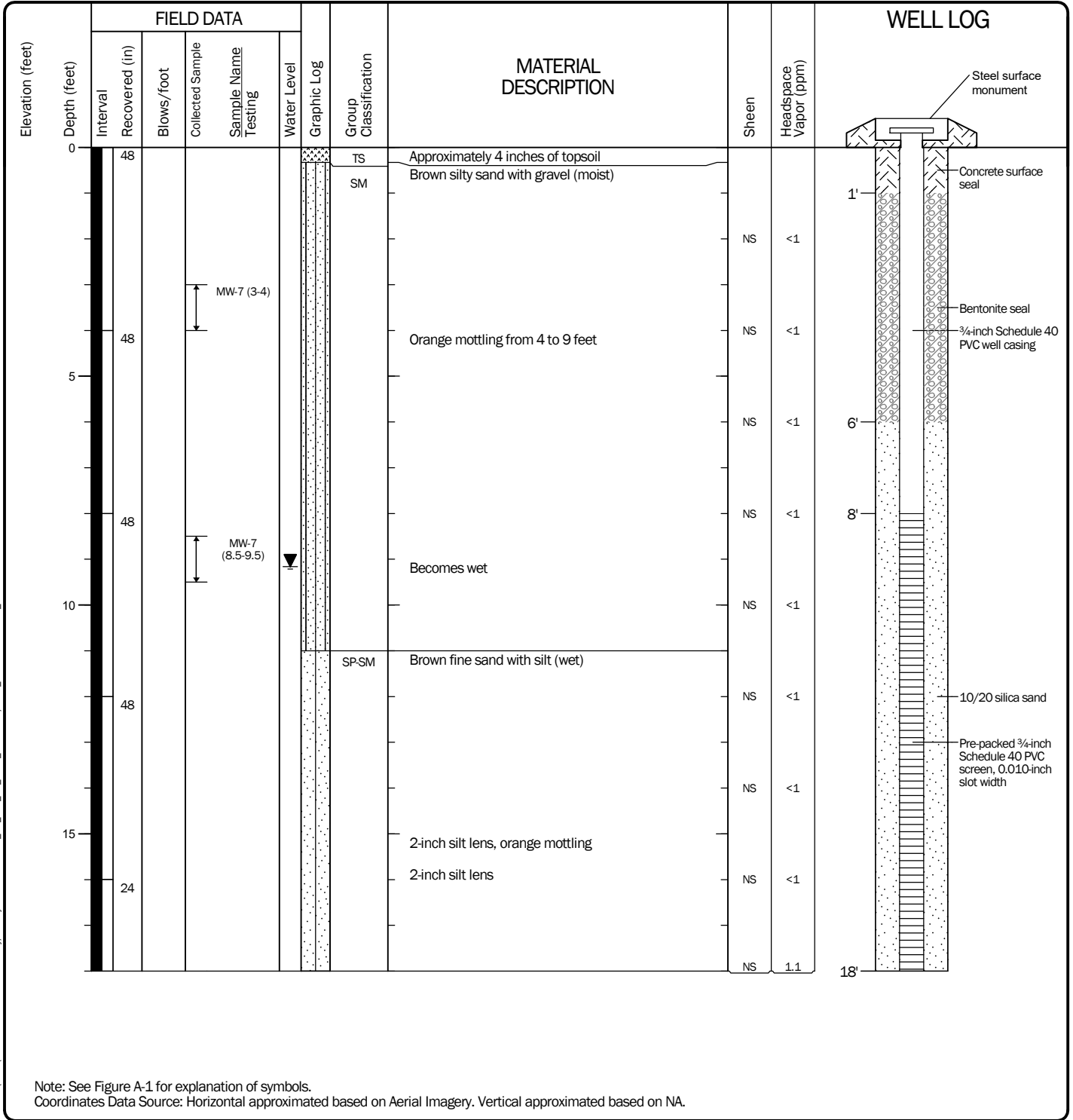
NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen

Key to Exploration Logs



Figure A-1

Start Drilled 4/24/2024	End 4/24/2024	Total Depth (ft) 18	Logged By Checked By CEW CJW	Driller Xavier Environmental	Drilling Method Direct-Push
Hammer Data N/A	Drilling Equipment Geoprobe 54LT		A 2-in well was installed on 4/24/2024 to a depth of 18 ft.		
Surface Elevation (ft) Vertical Datum Undetermined	Top of Casing Elevation (ft) Not Measured		Groundwater Date Measured 4/24/2024		
Latitude 45.143898 Longitude -122.836366	Horizontal Datum WGS84 (feet)		Depth to Water (ft) 9.16		Elevation (ft) Not Measured
Notes:					



Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery. Vertical approximated based on NA.

Log of Monitoring Well MW-7



Project: Former Mall 99 Cleaners
Project Location: Woodburn, Oregon
Project Number: 24986-001-02

Figure A-4
Sheet 1 of 1

Date: 6/24/24 Path: P:\24_24986001\GINT\24986001-02.GPJ DBLibrary\Library\GEOENGINEERS_DF_STD_US_JUNE_2017.GLB\GEB_ENVIRONMENTAL_WELL

Appendix B
Laboratory Reports and
Quality Assurance/Quality Control Review

Appendix B

Laboratory Reports and Quality Assurance/Quality Control Review

SAMPLE CUSTODY

Sample Containers and Storage

All samples obtained for chemical analysis were transferred in the field to laboratory-prepared sample containers and kept cool during transport to the testing laboratory. The sample containers were filled completely to eliminate headspace in the container. Chain-of-custody procedures were observed during transport of the samples to the testing laboratory.

Field Custody Procedures

All samples obtained for chemical analysis were transferred into clean sample containers supplied by the project analytical laboratory. Sufficient sample volume was obtained for the laboratory to complete the method-specific QC analyses. Possession of the samples were documented by the chain-of-custody. The chain-of-custody form was signed and dated in the appropriate places by parties involved with a transfer of custody.

Field Duplicates

Field duplicates for soil vapor and water samples were collected at a daily frequency of approximately 10 percent (not less than 1 duplicate per 10 samples). Field duplicates consisted of two samples collected sequentially from one sample location to assess data variability. The field duplicates were analyzed by the same analytical methods used for primary samples. Relative percent differences (RPDs) for field duplicates for samples were calculated to be within 3 to 11 percent, which is within the allowed range of variability.

Laboratory Custody Procedures

Upon receipt of the samples at the laboratory, whether delivered by GeoEngineers personnel or a courier service, the following procedures were followed.

The custody seals were broken, the chain-of-custody form was signed by the laboratory personnel, and the conditions of the samples were recorded on the form. The original chain-of-custody form remains with the laboratory and copies were returned to GeoEngineers.

LABORATORY QUALITY CONTROL

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods.

Very few flags for matrix spikes and batch QC precision and assurance were noted. For most samples with these flags other QC parameters (spikes, duplicates matrix spikes) were within control limits. As such, this data is considered usable and valid. GeoEngineers reviewed the laboratory reports for qualifiers. Very few flags for matrix spikes, laboratory control sample and batch QC precision and assurance were noted. For most samples with these flags other QC parameters (spikes, duplicates matrix spikes) were within control limits. As such, this data is considered usable and valid.

Analytical Report

2/14/2025

Mr. Cris Watkins
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5820 SW Kelly Ave
Unit B
Portland OR 97239

Project Name: Mall 99 Jan 2025

Project #: 24986-001-03

Workorder #: 2502086A

Dear Mr. Cris Watkins

The following report includes the data for the above referenced project for sample(s) received on 2/3/2025 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified TO-15 SIM are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Monica Tran
Project Manager

WORK ORDER #: 2502086A

Work Order Summary

CLIENT:	Mr. Cris Watkins GeoEngineers, Inc. 5820 SW Kelly Ave Unit B Portland, OR 97239	BILL TO:	CORP Accounts Payable GeoEngineers, Inc. 8410 154th Avenue NE Redmond, WA 98052
PHONE:	503-624-9274	P.O. #	
FAX:	503-620-5940	PROJECT #	24986-001-03 Mall 99 Jan 2025
DATE RECEIVED:	02/03/2025	CONTACT:	Monica Tran
DATE COMPLETED:	02/14/2025		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
06A	IA-1-01282025	Modified TO-15 SIM	6.3 "Hg	1.9 psi
07A	IA-2-01282025	Modified TO-15 SIM	5.7 "Hg	1.9 psi
08A	OA-1-01282025	Modified TO-15 SIM	0.4 "Hg	1.8 psi
09A	Lab Blank	Modified TO-15 SIM	NA	NA
10A	CCV	Modified TO-15 SIM	NA	NA
11A	LCS	Modified TO-15 SIM	NA	NA
11AA	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 02/14/25

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP-02089, MN NELAP-2836569, NH NELAP-209224-A, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-13180, WA NELAP-C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-21
 Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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 180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
 (916) 985-1000

**LABORATORY NARRATIVE
Modified TO-15 SIM
GeoEngineers, Inc.
Workorder# 2502086A**

Three 6 Liter Summa Canister (100% SIM Ambient) samples were received on February 03, 2025. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
ICAL %RSD acceptance criteria	$\leq 30\%$ RSD with 2 compounds allowed out to <math>< 40\%</math> RSD	Project specific; default criteria is $\leq 30\%$ RSD with 10% of compounds allowed out to <math>< 40\%</math> RSD
Daily Calibration	+/- 30% Difference	Project specific; default criteria is $\leq 30\%$ Difference with 10% of compounds allowed out up to $\leq 40\%$; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

A revised Chain of Custody (COC) was provided by the client on 2/7/2025.

Samples arrived at the laboratory in two shipments on 1/30/2025 and 2/3/2025. SV-1-01282025, SV-2-01282025, SV-4-01282025, SV-7-01282025, and DUP-01282025 were received by the laboratory on 1/30/2025. The remaining samples IA-1-01282025, IA-2-01282025, OA-1-01282025 and The Chain of Custody (COC) subsequently arrived at the laboratory on 2/3/2025.

Analytical Notes

Dilution was performed on sample IA-1-01282025 due to the presence of high level non-target species.

Definition of Data Qualifying Flags

The following qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN- See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM**

Client Sample ID: IA-1-01282025

Lab ID#: 2502086A-06A

No Detections Were Found.

Client Sample ID: IA-2-01282025

Lab ID#: 2502086A-07A

No Detections Were Found.

Client Sample ID: OA-1-01282025

Lab ID#: 2502086A-08A

No Detections Were Found.



Air Toxics

Client Sample ID: IA-1-01282025

Lab ID#: 2502086A-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	16021217sim	Date of Collection:	1/28/25 3:46:00 PM
Dil. Factor:	2.38	Date of Analysis:	2/13/25 12:51 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.024	Not Detected	0.061	Not Detected
1,1-Dichloroethene	0.024	Not Detected	0.094	Not Detected
cis-1,2-Dichloroethene	0.048	Not Detected	0.19	Not Detected
Trichloroethene	0.048	Not Detected	0.26	Not Detected
Tetrachloroethene	0.048	Not Detected	0.32	Not Detected
trans-1,2-Dichloroethene	0.24	Not Detected	0.94	Not Detected

Container Type: 6 Liter Summa Canister (100% SIM Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	106	70-130



Air Toxics

Client Sample ID: IA-2-01282025

Lab ID#: 2502086A-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	16021215sim	Date of Collection: 1/28/25 3:58:00 PM
Dil. Factor:	1.39	Date of Analysis: 2/12/25 11:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.014	Not Detected	0.036	Not Detected
1,1-Dichloroethene	0.014	Not Detected	0.055	Not Detected
cis-1,2-Dichloroethene	0.028	Not Detected	0.11	Not Detected
Trichloroethene	0.028	Not Detected	0.15	Not Detected
Tetrachloroethene	0.028	Not Detected	0.19	Not Detected
trans-1,2-Dichloroethene	0.14	Not Detected	0.55	Not Detected

Container Type: 6 Liter Summa Canister (100% SIM Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: OA-1-01282025

Lab ID#: 2502086A-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	16021216sim	Date of Collection: 1/28/25 2:10:00 PM
Dil. Factor:	1.14	Date of Analysis: 2/13/25 12:07 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.011	Not Detected	0.029	Not Detected
1,1-Dichloroethene	0.011	Not Detected	0.045	Not Detected
cis-1,2-Dichloroethene	0.023	Not Detected	0.090	Not Detected
Trichloroethene	0.023	Not Detected	0.12	Not Detected
Tetrachloroethene	0.023	Not Detected	0.15	Not Detected
trans-1,2-Dichloroethene	0.11	Not Detected	0.45	Not Detected

Container Type: 6 Liter Summa Canister (100% SIM Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: Lab Blank

Lab ID#: 2502086A-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	16021209simd	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/12/25 04:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: CCV

Lab ID#: 2502086A-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	16021202sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/12/25 10:47 AM

Compound	%Recovery
Vinyl Chloride	77
1,1-Dichloroethene	74
cis-1,2-Dichloroethene	72
Trichloroethene	90
Tetrachloroethene	94
trans-1,2-Dichloroethene	78

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: LCS

Lab ID#: 2502086A-11A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	16021206sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/12/25 02:00 PM

Compound	%Recovery	Method Limits
Vinyl Chloride	82	70-130
1,1-Dichloroethene	73	70-130
cis-1,2-Dichloroethene	73	70-130
Trichloroethene	86	70-130
Tetrachloroethene	89	70-130
trans-1,2-Dichloroethene	78	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: LCSD

Lab ID#: 2502086A-11AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	16021207sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/12/25 02:38 PM

Compound	%Recovery	Method Limits
Vinyl Chloride	80	70-130
1,1-Dichloroethene	71	70-130
cis-1,2-Dichloroethene	71	70-130
Trichloroethene	86	70-130
Tetrachloroethene	90	70-130
trans-1,2-Dichloroethene	76	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	101	70-130

Method : Modified TO-15 SIM (Sh)-1,1-DCE, c/t-1,2 DCE, PCE, TCE & VC

CAS Number	Compound	Rpt. Limit (ppbv)
75-01-4	Vinyl Chloride	0.010
75-35-4	1,1-Dichloroethene	0.010
156-59-2	cis-1,2-Dichloroethene	0.020
79-01-6	Trichloroethene	0.020
127-18-4	Tetrachloroethene	0.020
156-60-5	trans-1,2-Dichloroethene	0.10

	Surrogate	Method Limits
17060-07-0	1,2-Dichloroethane-d4	70-130
2037-26-5	Toluene-d8	70-130
460-00-4	4-Bromofluorobenzene	70-130

Analytical Report

2/14/2025

Mr. Cris Watkins
GeoEngineers, Inc.
5820 SW Kelly Ave
Unit B
Portland OR 97239

Project Name: Mall 99 Jan 2025

Project #: 24986-001-03

Workorder #: 2502086B

Dear Mr. Cris Watkins

The following report includes the data for the above referenced project for sample(s) received on 2/3/2025 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Monica Tran
Project Manager

WORK ORDER #: 2502086B

Work Order Summary

CLIENT:	Mr. Cris Watkins GeoEngineers, Inc. 5820 SW Kelly Ave Unit B Portland, OR 97239	BILL TO:	CORP Accounts Payable GeoEngineers, Inc. 8410 154th Avenue NE Redmond, WA 98052
PHONE:	503-624-9274	P.O. #	
FAX:	503-620-5940	PROJECT #	24986-001-03 Mall 99 Jan 2025
DATE RECEIVED:	02/03/2025	CONTACT:	Monica Tran
DATE COMPLETED:	02/14/2025		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SV-1-01282025	TO-15	1 "Hg	10 psi
02A	SV-2-01282025	TO-15	2 "Hg	10 psi
03A	SV-4-01282025	TO-15	2.2 "Hg	10 psi
04A	SV-7-01282025	TO-15	3.1 "Hg	10.1 psi
05A	DUP-01282025	TO-15	1 "Hg	10.1 psi
06A	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 02/14/25

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP-02089, MN NELAP-2836569, NH NELAP-209224-A, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-13180, WA NELAP-C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-21
 Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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 180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
 (916) 985-1000

LABORATORY NARRATIVE
EPA Method TO-15
GeoEngineers, Inc.
Workorder# 2502086B

Five 1 Liter Summa Canister samples were received on February 03, 2025. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

A revised Chain of Custody (COC) was provided by the client on 2/7/2025.

Samples arrived at the laboratory in two shipments on 1/30/2025 and 2/3/2025. SV-1-01282025, SV-2-01282025, SV-4-01282025, SV-7-01282025, and DUP-01282025 were received by the laboratory on 1/30/2025. The remaining samples IA-1-01282025, IA-2-01282025, OA-1-01282025 and The Chain of Custody (COC) subsequently arrived at the laboratory on 2/3/2025.

Analytical Notes

Dilution was performed on samples SV-1-01282025 and DUP-01282025 due to the presence of high level target species.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN**

Client Sample ID: SV-1-01282025

Lab ID#: 2502086B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	5.0	1200	34	8200

Client Sample ID: SV-2-01282025

Lab ID#: 2502086B-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.90	27	6.1	180

Client Sample ID: SV-4-01282025

Lab ID#: 2502086B-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.90	4.4	6.1	30

Client Sample ID: SV-7-01282025

Lab ID#: 2502086B-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.94	1.9	6.4	13

Client Sample ID: DUP-01282025

Lab ID#: 2502086B-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	5.0	1200	34	8200



Air Toxics

Client Sample ID: SV-1-01282025

Lab ID#: 2502086B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	60021207	Date of Collection:	1/28/25 2:25:00 PM
Dil. Factor:	9.93	Date of Analysis:	2/12/25 12:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Tetrachloroethene	5.0	1200	34	8200

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	80	70-130



Air Toxics

Client Sample ID: SV-2-01282025

Lab ID#: 2502086B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	60021208	Date of Collection: 1/28/25 2:47:00 PM
Dil. Factor:	1.80	Date of Analysis: 2/12/25 01:19 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.90	Not Detected	2.3	Not Detected
1,1-Dichloroethene	0.90	Not Detected	3.6	Not Detected
cis-1,2-Dichloroethene	0.90	Not Detected	3.6	Not Detected
Trichloroethene	0.90	Not Detected	4.8	Not Detected
trans-1,2-Dichloroethene	0.90	Not Detected	3.6	Not Detected
Tetrachloroethene	0.90	27	6.1	180

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	81	70-130



Air Toxics

Client Sample ID: SV-4-01282025

Lab ID#: 2502086B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	60021209	Date of Collection:	1/28/25 3:14:00 PM
Dil. Factor:	1.81	Date of Analysis:	2/12/25 01:48 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.90	Not Detected	2.3	Not Detected
1,1-Dichloroethene	0.90	Not Detected	3.6	Not Detected
cis-1,2-Dichloroethene	0.90	Not Detected	3.6	Not Detected
Trichloroethene	0.90	Not Detected	4.9	Not Detected
trans-1,2-Dichloroethene	0.90	Not Detected	3.6	Not Detected
Tetrachloroethene	0.90	4.4	6.1	30

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	82	70-130

Client Sample ID: SV-7-01282025

Lab ID#: 2502086B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	60021210	Date of Collection: 1/28/25 4:41:00 PM
Dil. Factor:	1.88	Date of Analysis: 2/12/25 02:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.94	Not Detected	2.4	Not Detected
1,1-Dichloroethene	0.94	Not Detected	3.7	Not Detected
cis-1,2-Dichloroethene	0.94	Not Detected	3.7	Not Detected
Trichloroethene	0.94	Not Detected	5.0	Not Detected
trans-1,2-Dichloroethene	0.94	Not Detected	3.7	Not Detected
Tetrachloroethene	0.94	1.9	6.4	13

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	107	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	84	70-130



Air Toxics

Client Sample ID: DUP-01282025

Lab ID#: 2502086B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	60021211	Date of Collection:	1/28/25 2:25:00 PM
Dil. Factor:	9.97	Date of Analysis:	2/12/25 02:44 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Tetrachloroethene	5.0	1200	34	8200

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	108	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	77	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2502086B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	60021206c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	2/12/25 11:19 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	78	70-130

Client Sample ID: CCV

Lab ID#: 2502086B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	60021203	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/12/25 09:54 AM

Compound	%Recovery
Vinyl Chloride	109
1,1-Dichloroethene	104
cis-1,2-Dichloroethene	102
Trichloroethene	105
trans-1,2-Dichloroethene	110
Tetrachloroethene	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	90	70-130

Client Sample ID: LCS

Lab ID#: 2502086B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	60021204	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/12/25 10:22 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	112	70-130
1,1-Dichloroethene	104	70-130
cis-1,2-Dichloroethene	102	70-130
Trichloroethene	103	70-130
trans-1,2-Dichloroethene	110	70-130
Tetrachloroethene	95	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	86	70-130

Client Sample ID: LCSD

Lab ID#: 2502086B-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	60021205	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/12/25 10:49 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	112	70-130
1,1-Dichloroethene	103	70-130
cis-1,2-Dichloroethene	104	70-130
Trichloroethene	102	70-130
trans-1,2-Dichloroethene	109	70-130
Tetrachloroethene	93	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	93	70-130

Method : TO-15 (Sh)-1,1-DCE, c/t-1,2-DCE, PCE, TCE & VC

CAS Number	Compound	Rpt. Limit (ppbv)
75-01-4	Vinyl Chloride	0.50
75-35-4	1,1-Dichloroethene	0.50
156-59-2	cis-1,2-Dichloroethene	0.50
79-01-6	Trichloroethene	0.50
156-60-5	trans-1,2-Dichloroethene	0.50
127-18-4	Tetrachloroethene	0.50

	Surrogate	Method Limits
2037-26-5	Toluene-d8	70-130
17060-07-0	1,2-Dichloroethane-d4	70-130
460-00-4	4-Bromofluorobenzene	70-130

Analytical Report

2/14/2025

Mr. Cris Watkins
GeoEngineers, Inc.
5820 SW Kelly Ave
Unit B
Portland OR 97239

Project Name: Mall 99 Jan 2025

Project #: 24986-001-03

Workorder #: 2502086C

Dear Mr. Cris Watkins

The following report includes the data for the above referenced project for sample(s) received on 2/3/2025 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Monica Tran
Project Manager

WORK ORDER #: 2502086C

Work Order Summary

CLIENT:	Mr. Cris Watkins GeoEngineers, Inc. 5820 SW Kelly Ave Unit B Portland, OR 97239	BILL TO:	CORP Accounts Payable GeoEngineers, Inc. 8410 154th Avenue NE Redmond, WA 98052
PHONE:	503-624-9274	P.O. #	
FAX:	503-620-5940	PROJECT #	24986-001-03 Mall 99 Jan 2025
DATE RECEIVED:	02/03/2025	CONTACT:	Monica Tran
DATE COMPLETED:	02/14/2025		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SV-1-01282025	Modified ASTM D-1946	1 "Hg	10 psi
02A	SV-2-01282025	Modified ASTM D-1946	2 "Hg	10 psi
03A	SV-4-01282025	Modified ASTM D-1946	2.2 "Hg	10 psi
04A	SV-7-01282025	Modified ASTM D-1946	3.1 "Hg	10.1 psi
05A	DUP-01282025	Modified ASTM D-1946	1 "Hg	10.1 psi
06A	Lab Blank	Modified ASTM D-1946	NA	NA
07A	CCV	Modified ASTM D-1946	NA	NA
08A	LCS	Modified ASTM D-1946	NA	NA
08AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 02/14/25

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP-02089, MN NELAP-2836569, NH NELAP-209224-A, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-13180, WA NELAP-C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-21

Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
 (916) 985-1000

LABORATORY NARRATIVE
Modified ASTM D-1946
GeoEngineers, Inc.
Workorder# 2502086C

Five 1 Liter Summa Canister samples were received on February 03, 2025. The laboratory performed analysis via Modified ASTM Method D-1946 for Helium in air using GC/TCD. The method involves direct injection of 1.0 mL of sample.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

<i>Requirement</i>	<i>ASTM D-1946</i>	<i>ATL Modifications</i>
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a $\geq 95\%$ accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

A revised Chain of Custody (COC) was provided by the client on 2/7/2025.

The samples arrived at the laboratory without a Chain of Custody (COC). The client subsequently provided the COC by on 2/03/2025.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit.

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: SV-1-01282025

Lab ID#: 2502086C-01A

No Detections Were Found.

Client Sample ID: SV-2-01282025

Lab ID#: 2502086C-02A

No Detections Were Found.

Client Sample ID: SV-4-01282025

Lab ID#: 2502086C-03A

No Detections Were Found.

Client Sample ID: SV-7-01282025

Lab ID#: 2502086C-04A

No Detections Were Found.

Client Sample ID: DUP-01282025

Lab ID#: 2502086C-05A

No Detections Were Found.



Air Toxics

Client Sample ID: SV-1-01282025

Lab ID#: 2502086C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10021215c	Date of Collection:	1/28/25 2:25:00 PM
Dil. Factor:	1.74	Date of Analysis:	2/13/25 07:53 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.087	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: SV-2-01282025

Lab ID#: 2502086C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10021216c	Date of Collection:	1/28/25 2:47:00 PM
Dil. Factor:	1.80	Date of Analysis:	2/13/25 08:07 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.090	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: SV-4-01282025

Lab ID#: 2502086C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10021217c	Date of Collection:	1/28/25 3:14:00 PM
Dil. Factor:	1.82	Date of Analysis:	2/13/25 08:18 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.091	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: SV-7-01282025

Lab ID#: 2502086C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10021218c	Date of Collection:	1/28/25 4:41:00 PM
Dil. Factor:	1.88	Date of Analysis:	2/13/25 08:30 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.094	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: DUP-01282025

Lab ID#: 2502086C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10021219c	Date of Collection:	1/28/25 2:25:00 PM
Dil. Factor:	1.75	Date of Analysis:	2/13/25 08:43 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.088	Not Detected

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2502086C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10021203c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	2/12/25 12:04 PM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: CCV

Lab ID#: 2502086C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10021201c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/12/25 11:34 AM

Compound	%Recovery
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Helium	98
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Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 2502086C-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10021202c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/12/25 11:46 AM

Compound	%Recovery	Method Limits
Helium	102	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2502086C-08AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10021224c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	2/13/25 10:00 AM

Compound	%Recovery	Method Limits
Helium	100	85-115

Container Type: NA - Not Applicable

Method : Modified ASTM D-1946 (Sh)-He only

CAS Number	Compound	Rpt. Limit (%)
7440-59-7	Helium	0.050



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Tuesday, February 11, 2025

Cris Watkins
GeoEngineers
4000 Kruse Way Place, Bldg 3 Suite 200
Lake Oswego, OR 97035

RE: A5A1655 - Mall 99 - Woodburn - 24986-001-03

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A5A1655, which was received by the laboratory on 1/29/2025 at 4:34:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Table with 1 column and 1 row: Cooler Receipt Information. Content includes: Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling. (See Cooler Receipt Form for details). Default Cooler 5.6 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report. All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

Handwritten signature of Darrell Auvil

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers 4000 Kruse Way Place, Bldg 3 Suite 200 Lake Oswego, OR 97035	Project: Mall 99 - Woodburn Project Number: 24986-001-03 Project Manager: Cris Watkins	Report ID: A5A1655 - 02 11 25 1609
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ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1-01292025	A5A1655-01	Water	01/29/25 11:11	01/29/25 16:34
MW-2-01292025	A5A1655-02	Water	01/29/25 10:37	01/29/25 16:34
MW-3-01292025	A5A1655-03	Water	01/29/25 15:48	01/29/25 16:34
MW-4-01292025	A5A1655-04	Water	01/29/25 14:05	01/29/25 16:34
MW-5-01292025	A5A1655-05	Water	01/29/25 13:31	01/29/25 16:34
MW-6-01292025	A5A1655-06	Water	01/29/25 09:57	01/29/25 16:34
MW-7-01292025	A5A1655-07	Water	01/29/25 12:45	01/29/25 16:34
DUP-1-01292025	A5A1655-08	Water	01/29/25 16:00	01/29/25 16:34

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers 4000 Kruse Way Place, Bldg 3 Suite 200 Lake Oswego, OR 97035	Project: Mall 99 - Woodburn Project Number: 24986-001-03 Project Manager: Cris Watkins	Report ID: A5A1655 - 02 11 25 1609
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ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
			Matrix: Water			Batch: 25A1021		
1,1-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 17:43	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 17:43	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 17:43	EPA 8260D	
Tetrachloroethene (PCE)	5.73	---	0.400	ug/L	1	01/30/25 17:43	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	01/30/25 17:43	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	01/30/25 17:43	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>01/30/25 17:43</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/30/25 17:43</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>111 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/30/25 17:43</i>	<i>EPA 8260D</i>
			Matrix: Water			Batch: 25A1021		
1,1-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 18:10	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 18:10	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 18:10	EPA 8260D	
Tetrachloroethene (PCE)	1.66	---	0.400	ug/L	1	01/30/25 18:10	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	01/30/25 18:10	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	01/30/25 18:10	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 97 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>01/30/25 18:10</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>104 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/30/25 18:10</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>109 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/30/25 18:10</i>	<i>EPA 8260D</i>
			Matrix: Water			Batch: 25A1021		
1,1-Dichloroethene	ND	---	0.800	ug/L	2	01/30/25 22:18	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.800	ug/L	2	01/30/25 22:18	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.800	ug/L	2	01/30/25 22:18	EPA 8260D	
Tetrachloroethene (PCE)	92.9	---	0.800	ug/L	2	01/30/25 22:18	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.800	ug/L	2	01/30/25 22:18	EPA 8260D	
Vinyl chloride	ND	---	0.400	ug/L	2	01/30/25 22:18	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>01/30/25 22:18</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/30/25 22:18</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>112 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/30/25 22:18</i>	<i>EPA 8260D</i>
			Matrix: Water			Batch: 25A1072		
1,1-Dichloroethene	ND	---	0.400	ug/L	1	01/31/25 19:35	EPA 8260D	

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers 4000 Kruse Way Place, Bldg 3 Suite 200 Lake Oswego, OR 97035	Project: Mall 99 - Woodburn Project Number: 24986-001-03 Project Manager: Cris Watkins	Report ID: A5A1655 - 02 11 25 1609
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ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
			Matrix: Water			Batch: 25A1072		
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/31/25 19:35	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/31/25 19:35	EPA 8260D	
Tetrachloroethene (PCE)	73.5	---	0.400	ug/L	1	01/31/25 19:35	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	01/31/25 19:35	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	01/31/25 19:35	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 101 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>01/31/25 19:35</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/31/25 19:35</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/31/25 19:35</i>	<i>EPA 8260D</i>
			Matrix: Water			Batch: 25A1021		
1,1-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 18:38	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 18:38	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 18:38	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	01/30/25 18:38	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	01/30/25 18:38	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	01/30/25 18:38	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 97 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>01/30/25 18:38</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/30/25 18:38</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>110 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/30/25 18:38</i>	<i>EPA 8260D</i>
			Matrix: Water			Batch: 25A1021		
1,1-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 19:05	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 19:05	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 19:05	EPA 8260D	
Tetrachloroethene (PCE)	34.9	---	0.400	ug/L	1	01/30/25 19:05	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	01/30/25 19:05	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	01/30/25 19:05	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>01/30/25 19:05</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/30/25 19:05</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>111 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/30/25 19:05</i>	<i>EPA 8260D</i>
			Matrix: Water			Batch: 25A1021		
1,1-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 19:33	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 19:33	EPA 8260D	

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers 4000 Kruse Way Place, Bldg 3 Suite 200 Lake Oswego, OR 97035	Project: Mall 99 - Woodburn Project Number: 24986-001-03 Project Manager: Cris Watkins	Report ID: A5A1655 - 02 11 25 1609
--	---	---

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-7-01292025 (A5A1655-07)			Matrix: Water			Batch: 25A1021		
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/30/25 19:33	EPA 8260D	
Tetrachloroethene (PCE)	3.87	---	0.400	ug/L	1	01/30/25 19:33	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	01/30/25 19:33	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	01/30/25 19:33	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>01/30/25 19:33</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/30/25 19:33</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>109 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/30/25 19:33</i>	<i>EPA 8260D</i>
DUP-1-01292025 (A5A1655-08)			Matrix: Water			Batch: 25A1021		
1,1-Dichloroethene	ND	---	0.400	ug/L	1	01/31/25 01:03	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/31/25 01:03	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	01/31/25 01:03	EPA 8260D	
Tetrachloroethene (PCE)	115	---	0.400	ug/L	1	01/31/25 01:03	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	01/31/25 01:03	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	01/31/25 01:03	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>01/31/25 01:03</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/31/25 01:03</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>111 %</i>		<i>80-120 %</i>		<i>1</i>	<i>01/31/25 01:03</i>	<i>EPA 8260D</i>

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GeoEngineers	Project: Mall 99 - Woodburn	
4000 Kruse Way Place, Bldg 3 Suite 200	Project Number: 24986-001-03	Report ID:
Lake Oswego, OR 97035	Project Manager: Cris Watkins	A5A1655 - 02 11 25 1609

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 25A1021 - EPA 5030C						Water						
Blank (25A1021-BLK1)			Prepared: 01/30/25 12:01			Analyzed: 01/30/25 15:24						
EPA 8260D												
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>112 %</i>		<i>80-120 %</i>		<i>"</i>						
LCS (25A1021-BS1)						Prepared: 01/30/25 12:01 Analyzed: 01/30/25 14:20						
EPA 8260D												
1,1-Dichloroethene	17.7	---	0.400	ug/L	1	20.0	---	89	80-120%	---	---	
cis-1,2-Dichloroethene	16.8	---	0.400	ug/L	1	20.0	---	84	80-120%	---	---	
trans-1,2-Dichloroethene	16.3	---	0.400	ug/L	1	20.0	---	82	80-120%	---	---	
Tetrachloroethene (PCE)	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
Trichloroethene (TCE)	16.9	---	0.400	ug/L	1	20.0	---	84	80-120%	---	---	
Vinyl chloride	15.8	---	0.200	ug/L	1	20.0	---	79	80-120%	---	---	Q-55
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>						
Duplicate (25A1021-DUP1)						Prepared: 01/30/25 12:01 Analyzed: 01/30/25 20:55						
QC Source Sample: Non-SDG (A5A1605-01RE1)												
1,1-Dichloroethene	ND	---	80.0	ug/L	200	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	80.0	ug/L	200	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	80.0	ug/L	200	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	80.0	ug/L	200	---	78.0	---	---	***	30%	
Trichloroethene (TCE)	ND	---	80.0	ug/L	200	---	70.0	---	---	***	30%	
Vinyl chloride	ND	---	40.0	ug/L	200	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>"</i>						

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ORELAP ID: OR100062

GeoEngineers 4000 Kruse Way Place, Bldg 3 Suite 200 Lake Oswego, OR 97035	Project: Mall 99 - Woodburn Project Number: 24986-001-03 Project Manager: Cris Watkins	Report ID: A5A1655 - 02 11 25 1609
--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 25A1021 - EPA 5030C						Water						
Duplicate (25A1021-DUP1)						Prepared: 01/30/25 12:01 Analyzed: 01/30/25 20:55						
QC Source Sample: Non-SDG (A5A1605-01RE1)												
Surr: 4-Bromofluorobenzene (Surr)		Recovery: 111 %		Limits: 80-120 %		Dilution: 1x						
Matrix Spike (25A1021-MS1)						Prepared: 01/30/25 12:01 Analyzed: 01/30/25 23:13						
QC Source Sample: MW-4-01292025 (A5A1655-04)												
EPA 8260D												
1,1-Dichloroethene	205	---	4.00	ug/L	10	200	ND	102	71-131%	---	---	
cis-1,2-Dichloroethene	173	---	4.00	ug/L	10	200	ND	86	78-123%	---	---	
trans-1,2-Dichloroethene	169	---	4.00	ug/L	10	200	ND	85	75-124%	---	---	
Tetrachloroethene (PCE)	260	---	4.00	ug/L	10	200	64.9	98	74-129%	---	---	
Trichloroethene (TCE)	180	---	4.00	ug/L	10	200	ND	90	79-123%	---	---	
Vinyl chloride	158	---	2.00	ug/L	10	200	ND	79	58-137%	---	---	Q-54
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 94 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		94 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		96 %		80-120 %		"						

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4000 Kruse Way Place, Bldg 3 Suite 200	Project Number: 24986-001-03	Report ID:
Lake Oswego, OR 97035	Project Manager: Cris Watkins	A5A1655 - 02 11 25 1609

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 25A1072 - EPA 5030C						Water						
Blank (25A1072-BLK1)			Prepared: 01/31/25 13:28 Analyzed: 01/31/25 15:57									
EPA 8260D												
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	---
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	---
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	---
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	---
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 101 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>						
LCS (25A1072-BS1)						Prepared: 01/31/25 13:28 Analyzed: 01/31/25 14:51						
EPA 8260D												
1,1-Dichloroethene	18.0	---	0.400	ug/L	1	20.0	---	90	80-120%	---	---	---
cis-1,2-Dichloroethene	17.9	---	0.400	ug/L	1	20.0	---	89	80-120%	---	---	---
trans-1,2-Dichloroethene	18.2	---	0.400	ug/L	1	20.0	---	91	80-120%	---	---	---
Tetrachloroethene (PCE)	20.8	---	0.400	ug/L	1	20.0	---	104	80-120%	---	---	---
Trichloroethene (TCE)	18.4	---	0.400	ug/L	1	20.0	---	92	80-120%	---	---	---
Vinyl chloride	17.2	---	0.200	ug/L	1	20.0	---	86	80-120%	---	---	---
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>95 %</i>		<i>80-120 %</i>		<i>"</i>						
Duplicate (25A1072-DUP1)						Prepared: 01/31/25 13:28 Analyzed: 01/31/25 20:40						
QC Source Sample: Non-SDG (A5A1686-01)												
1,1-Dichloroethene	ND	---	20.0	ug/L	50	---	ND	---	---	---	---	30%
cis-1,2-Dichloroethene	ND	---	20.0	ug/L	50	---	ND	---	---	---	---	30%
trans-1,2-Dichloroethene	ND	---	20.0	ug/L	50	---	ND	---	---	---	---	30%
Tetrachloroethene (PCE)	ND	---	20.0	ug/L	50	---	ND	---	---	---	---	30%
Trichloroethene (TCE)	ND	---	20.0	ug/L	50	---	ND	---	---	---	---	30%
Vinyl chloride	ND	---	10.0	ug/L	50	---	ND	---	---	---	---	30%
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 101 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>"</i>						

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--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 25A1072 - EPA 5030C						Water						
Duplicate (25A1072-DUP1)						Prepared: 01/31/25 13:28 Analyzed: 01/31/25 20:40						
QC Source Sample: Non-SDG (A5A1686-01)												
<i>Surr: 4-Bromofluorobenzene (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
Matrix Spike (25A1072-MS1)						Prepared: 01/31/25 13:28 Analyzed: 01/31/25 17:23						
QC Source Sample: Non-SDG (A5A1723-06)												
EPA 8260D												
1,1-Dichloroethene	20.5	---	0.400	ug/L	1	20.0	ND	103	71-131%	---	---	
cis-1,2-Dichloroethene	18.9	---	0.400	ug/L	1	20.0	ND	94	78-123%	---	---	
trans-1,2-Dichloroethene	19.3	---	0.400	ug/L	1	20.0	ND	96	75-124%	---	---	
Tetrachloroethene (PCE)	22.9	---	0.400	ug/L	1	20.0	ND	115	74-129%	---	---	
Trichloroethene (TCE)	20.7	---	0.400	ug/L	1	20.0	ND	103	79-123%	---	---	
Vinyl chloride	19.4	---	0.200	ug/L	1	20.0	ND	97	58-137%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>95 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>"</i>						

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SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 25A1021</u>							
A5A1655-01	Water	EPA 8260D	01/29/25 11:11	01/30/25 12:01	5mL/5mL	5mL/5mL	1.00
A5A1655-02	Water	EPA 8260D	01/29/25 10:37	01/30/25 12:01	5mL/5mL	5mL/5mL	1.00
A5A1655-03	Water	EPA 8260D	01/29/25 15:48	01/30/25 12:01	5mL/5mL	5mL/5mL	1.00
A5A1655-05	Water	EPA 8260D	01/29/25 13:31	01/30/25 12:01	5mL/5mL	5mL/5mL	1.00
A5A1655-06	Water	EPA 8260D	01/29/25 09:57	01/30/25 12:01	5mL/5mL	5mL/5mL	1.00
A5A1655-07	Water	EPA 8260D	01/29/25 12:45	01/30/25 12:01	5mL/5mL	5mL/5mL	1.00
A5A1655-08	Water	EPA 8260D	01/29/25 16:00	01/30/25 12:01	5mL/5mL	5mL/5mL	1.00
<u>Batch: 25A1072</u>							
A5A1655-04RE1	Water	EPA 8260D	01/29/25 14:05	01/31/25 15:12	5mL/5mL	5mL/5mL	1.00

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Lake Oswego, OR 97035

Project: **Mall 99 - Woodburn**

Project Number: **24986-001-03**

Project Manager: **Cris Watkins**

Report ID:

A5A1655 - 02 11 25 1609

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

- Q-54** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -1%. The results are reported as Estimated Values.
- Q-55** Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

- DET Analyte DETECTED at or above the detection or reporting limit.
- ND Analyte NOT DETECTED at or above the detection or reporting limit.
- NR Result Not Reported
- RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Validated Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

- Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.
- " dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
 - " wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
 - " " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.
- Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

- " --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- " *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

GeoEngineers

4000 Kruse Way Place, Bldg 3 Suite 200
Lake Oswego, OR 97035

Project: **Mall 99 - Woodburn**

Project Number: **24986-001-03**
Project Manager: **Cris Watkins**

Report ID:
A5A1655 - 02 11 25 1609

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL). Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.

- For Blank hits falling between 1/2 the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
- For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

- Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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Darrell Auvil, Client Services Manager



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Decanted Samples:

Soils/Sediments:

Unless TCLP analysis is required or there is notification otherwise for a specific project, all Soil and Sediments containing excess water are decanted prior to analysis in order to provide the most representative sample for analysis.

Water Samples:

Water samples containing solids and sediment may need to be decanted in order to eliminate these particulates from the water extractions. In the case of organics extractions, a solvent rinse of the container will not be performed.

Volatiles Soils (5035s)

Samples that are field preserved by 5035 for volatiles are dry weight corrected using the same dry weight correction as for normal analyses. In the case of decanted samples, the dry weight may be performed on a decanted sample, while the aliquot for 5035 may not have been treated the same way. If this is a concern, please submit separate containers for dry weight analysis for volatiles can be provided.

All samples decanted in the laboratory are noted in this report with the DCNT qualifier indicating the sample was decanted.

Apex Laboratories

Darrell Auvil, Client Services Manager

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LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
--------	----------	--------	---------	--------	---------------

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation. Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Darrell Auvil, Client Services Manager

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APEX LABS COOLER RECEIPT FORM

Client: GeoEngineers Element WO#: A5 A1655

Project/Project #: Mall 99 Jan 2025 / 24986-001-03

Delivery Info:
 Date/time received: 1/29/25 @ 16:34 By: [Signature]
 Delivered by: Apex Client ESS FedEx UPS Radio Morgan SDS Evergreen Other
 From USDA Regulated Origin? Yes No

Cooler Inspection Date/time inspected: 1/29/25 @ 16:34 By: [Signature]
 Chain of Custody included? Yes No
 Signed/dated by client? Yes No
 Contains USDA Reg. Soils? Yes No Unsure (email RegSoils)

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>5.0</u>						
Custody seals? (Y/N)	<u>N</u>						
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Real</u>						
Condition (In/Out):	<u>IN</u>						

Cooler out of temp? (Y/N) Possible reason why: _____
 Green dots applied to out of temperature samples? Yes No
 Out of temperature samples form initiated? Yes No
Sample Inspection: Date/time inspected: 1/29/25 @ 18:37 By: [Signature]
 All samples intact? Yes No Comments: _____

 Bottle labels/COCs agree? Yes No Comments: _____

 COC/container discrepancies form initiated? Yes No
 Containers/volumes received appropriate for analysis? Yes No Comments: _____

 Do VOA vials have visible headspace? Yes No NA
 Comments: _____
 Water samples: pH checked: Yes No NA pH appropriate? Yes No NA pH ID: _____
 Comments: _____

Labeled by: [Signature] Witness: [Signature] Cooler Inspected by: [Signature]
 Form Y-003 R-02

Apex Laboratories

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Darrell Auvil, Client Services Manager

Appendix C
Report Limitations and Guidelines for Use

Appendix C

Report Limitations and Guidelines for Use¹

This appendix provides information to help you manage your risks with respect to the use of this report.

Read These Provisions Closely

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory “limitations” provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these “Report Limitations and Guidelines for Use” apply to your project or site.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared by GeoEngineers, Inc. (GeoEngineers) for the exclusive use of Khoury Development, LLC, their authorized agents and regulatory agencies. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment or remedial action study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except the client should rely on this plan without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

This Environmental Report is Based on a Unique Set of Project-Specific Factors

This report applies to the Former Mall 99 Cleaners facility located at located at 972 North Pacific Highway, Woodburn, Oregon. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- Not prepared for you,
- Not prepared for your project,
- Not prepared for the specific site explored, or
- Completed before important project changes were made.

If important changes are made after the date of this remedial action plan, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

¹ Developed based on material provided by the Geoprofessional Business Association, Professional Firms Practicing in the GeoSciences, www.geoprofessional.org.

Reliance Conditions for Third Parties

No third party may rely on the product of our services unless GeoEngineers agrees in advance, and in writing to such reliance. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions.

Environmental Regulations Are Always Evolving

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

Subsurface Conditions Can Change

This report is based on conditions that existed at the time our site studies were performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

Soil and Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or groundwater). Note that hazardous substances may be present in some of the site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject site or reuse of the affected media on site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants and no conclusions or inferences should be drawn regarding Biological Pollutants, as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria and viruses, and/or any of their byproducts.

If Client desires these specialized services, they should be obtained from a consultant who offers services in this specialized field.

Do Not Redraw the Exploration Logs

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproduction is acceptable but recognize that separating logs from the report can elevate risk.

Geotechnical, Geologic and Environmental Reports Should Not Be Interchanged

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

Environmental Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from the sampling locations at the site documented in past reports. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. There is always a potential that areas of contamination exist in portions of the site that were not sampled or tested during this or previous studies. Our remedial action plan, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

