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ENVIRONMENTAL

1631 E Saint Andrew Place
Santa Ana, CA 92705
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July 10, 2025

Mrs. Nancy Sawka
Oregon Department of Environmental Quality
WR Environmental Cleanup Program
4026 Fairview Industrial Drive SE
Salem, Oregon 97302

DEQ Tanks File No.: 20-20-0844

Soil Vapor Sampling Report – April 2025
United Pacific #5468
5720 Main Street
Springfield, Oregon

Dear Mrs. Sawka:

On behalf of United Pacific (UP), Montrose Environmental Solutions (Montrose) is pleased to provide the *Soil Vapor Sampling Report - April 2025 Report* (Report) for the above referenced Site. This Report presents a summary of the results of soil vapor sampling conducted on April 29, 2025.

Analytical results for soil vapor samples collected from offsite soil vapor probes SV-1 and SV-2 indicate that petroleum constituents were not detected at concentrations greater than the Oregon Department of Environmental Quality (DEQ) Risk Based Concentrations (RBCs) for vapor intrusion (VI) in buildings for the occupational receptor scenario.

Should you have questions regarding this report or the sampling activities, please contact the undersigned at (714) 919-6500.

Sincerely,

Montrose Environmental

Laura Skow

REGISTERED
OREGON
LAURA B. SKOW
G2643
GEOLOGIST
exp: 9/30/26

Laura Skow, RG
Project Manager

Dane Nygaard
Senior Manager

c: Mr. Tom Robins, United Pacific

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UNITED PACIFIC #5468
SOIL VAPOR SAMPLING REPORT

SITE INFORMATION

Sampling Date:	April 29, 2025
Site Location:	United Pacific #5468 5720 Main Street Springfield, Oregon
UP Contact:	Mr. Tom Robins
Montrose Contact:	Mrs. Laura Skow
Regulatory Agency:	State of Oregon Department of Environmental Quality WR Environmental Cleanup Program DEQ Tanks File No.: 20-20-0844

WORK PERFORMED

- In October 2024, Montrose conducted additional assessment activities, which included installing two soil vapor probes (SV-1 and SV-2) located at the western adjacent property 5690 Main St, Springfield, OR and collecting soil vapor samples according to standard industry practice and Montrose's Standard Operating Procedure (SOP). Analytical results of the October 2024 soil vapor sampling event indicated the presence of select volatile organic compounds (VOCs) at concentrations below RBCs, and Montrose recommended performing additional sampling to verify the results and check for seasonal variability. The DEQ concurred with additional soil vapor sampling in their email dated March 27, 2025. Details regarding the installation and initial sampling of the soil vapor probes were presented in the *Additional Site Assessment* Report, dated January 21, 2025. A site location map is provided as **Figure 1.** An area plan showing the station configuration, surrounding area, and the soil vapor probes locations is provided as **Figure 2**. DEQ correspondence is included as **Appendix A**.
- On April 29, 2025, Blaine Tech Services, Inc. collected soil vapor samples from soil vapor probes SV-1 and SV-2; a duplicate sample was also collected from probe SV-1 (DUP-1). The samples were collected in laboratory prepared 1.5-L summa canisters using laboratory supplied and calibrated flow regulators and manifolds. During sampling, a helium shroud was deployed over the soil vapor probes and the atmosphere within the shroud was enriched to a helium concentration ranging from 92 to 94 percent. A portable dielectric helium detector was used to record the shroud helium concentration. A portable electric vacuum pump was used to purge the sampling train. During purging, the helium detector was used to monitor for the presence of helium in the purge stream, which if detected would indicate a potential

leak in the sampling train. Once the absence of helium in the purge stream was verified, the summa canisters were opened and allowed to fill. Following collection, the samples were transported to Fremont Analytical, Inc. of Seattle, Washington, under standard chain-of-custody procedures.

- The soil vapor samples were analyzed for full-scan VOCs by EPA Method TO-15 and for major gases, including oxygen, carbon dioxide, and methane by EPA Method C, and helium by GC/TDC (Gas chromatography–thermal conductivity detection). Soil vapor analytical results are presented in **Table 1**. Soil vapor sampling field forms are presented as **Appendix B.**

A site location map is presented as **Figure 1** and pertinent site features, including the soil vapor probe locations, are shown on **Figure 2**. Site background information is included as **Appendix C**.

SUMMARY DATA

Monitoring Details

Total Samples Collected:	3	
Active Monitoring/Sampling Probes:	Onsite: 0	Offsite: 2
	Probes Sampled: 2	
Purging Method:	Electric vacuum pump using helium shroud	
Sampling Method:	Passive using summa canisters	
Current Site Remediation Method:	Monthly liquid phase hydrocarbon (LPH) removal	

Select Analytical Results (Table 1)

Soil Vapor Samples with TPH-Gx: 3	Maximum: 841 $\mu g/m^3$* (SV-2)
Soil Vapor Samples with Benzene: 3	Maximum: 1.58 $\mu g/m^3$* (SV-2)

* Micrograms per cubic meter

SOIL VAPOR SAMPLE RESULTS – APRIL 2025

Soil vapor analytical results for the April 29, 2025 sampling event are presented in **Table 1** and are compared to the DEQ's RBCs for soil vapor (RBCsv) volatilization into indoor air for the commercial receptor scenario**. Figure 2** shows the soil vapor probe locations. Analytical results are summarized below:

- Gasoline Range Organics (GRO) were detected in all three soil vapor samples at concentrations of 326 micrograms per cubic meter ($\mu g/m^3$, SV-1), 296 $\mu g/m^3$ (DUP-1, duplicate sample from SV-1), and 841 $\mu g/m^3$ (SV-2). The detected GRO concentrations are well below the RBCsv – Soil Vapor for Volatilization into Indoor Air for the commercial receptor scenario of 40,000 $\mu g/m^3$.
- Benzene was detected in all three soil vapor samples at concentrations of 0.683 $\mu g/m^3$ (DUP-1), 0.936 $\mu g/m^3$ (SV-1), and 1.58 $\mu g/m^3$ (SV-2). The DEQ RBC for soil vapor volatilization into indoor air for benzene is 52 $\mu g/m^3$.

- Toluene was detected in two samples at concentrations of 9.02 µg/m^3 (SV-1) and 21.4 µg/m^3 (SV-2); toluene was not detected in the duplicate sample collected from SV-1 (DUP-1). The DEQ RBC for soil vapor volatilization into indoor for toluene is 730,000 µg/m^3. Ethylbenzene and total xylenes were not detected in any of the soil vapor samples.
- 1,2-dibromoethane (EDB) and 1,2-dichloroethane (EDC) were not detected in any of the soil vapor samples at concentrations greater than laboratory method RLs (<0.0164 µg/m^3 and <0.0162 µg/m^3, respectively). Note that the laboratory method RLs for EDB and EDB were below the respective RBCs for soil vapor volatilization into indoor air (0.020 µg/m^3 and 0.47 µg/m^3, respectively).
- Naphthalene was detected in each of the samples at concentrations ranging from 1.07 µg/m^3 (DUP-1) to 1.09 µg/m^3 (SV-2 and SV-1). The DEQ RBC for soil vapor volatilization into indoor air is 12 µg/m^3.
- Various other VOCs were detected in each of the vapor samples but concentrations were either below applicable RBCs or RBCs have not yet been established for those compounds.
- The tracer gas helium was not detected in any of the vapor samples.
- Oxygen was detected in the soil vapor samples at concentrations of 21.2% volume (SV-1 and DUP-1) and 21.4% volume (SV-2). Generally, oxygen concentrations in soil vapor above 4% volume indicate sufficient oxygen for biodegradation (suggesting a bioattenuation zone is present). The reported concentrations are considered high and suggest near surface soil is well aerated and conducive for natural biodegradation of residual petroleum hydrocarbon vapors.
- Carbon dioxide was detected in the soil vapor samples at concentrations of 1.25 % (DUP-1), 1.32 % (SV-1) and 1.35 % (SV-2). Nitrogen was detected in the soil vapor samples at concentrations ranging from 77.3 % (SV-2) to 77.5 % (DUP-1). Methane and carbon monoxide were not detected in any of the soil vapor samples (<0.0750 %, DUP-1, and <0.100 %, SV-2 and SV-1).

Analytical results are presented in **Table 1**. Compounds detected above laboratory method RLs are in bold type and concentrations exceeding applicable RBCs are shaded. A copy of the laboratory analytical report is provided in **Appendix D**.

Soil vapor sampling field forms are provided in **Appendix B**. Montrose's Soil Vapor Sampling Protocols are included in **Appendix E**. Disposable polyethylene tubing was the only waste generated during this sampling event and was disposed of properly as municipal waste.

SOIL VAPOR TREND AND DISTRIBUTION ANALYSIS

The GRO concentrations detected in soil vapor collected from probes SV-1 (326 µg/m^3) and SV-2 (841 µg/m^3) on April 29, 2025 are slightly higher than the previous results from October 2024 (<236 µg/m^3), but are well below the Vapor Intrusion RBCs for soil vapor for the commercial receptor scenario of 40,000 µg/m^3. The detected benzene concentrations in SV-1 and SV-2 have fluctuated since the previous sampling event. Benzene decreased in SV-1 from 1.12 µg/m^3 (October 2024) to 0.936 µg/m^3 (April 2025) and increased in SV-2 from 0.825 µg/m^3 to 1.58 µg/m^3 over the same period, with concentrations remaining below the RBC of 52 µg/m^3; other detected VOCs have also remained well below the applicable RBCs. Soil vapor analytical results for April 2025 are summarized in **Table 1.** Historical soil vapor analytical results are presented in **Table 2**.

For reference, a site plan is included as **Figure 3,** and select groundwater monitoring results from the First Quarter 2025 groundwater monitoring event (March 2025) are shown on **Figure 4** to illustrate the distribution of the dissolved-phase hydrocarbon plume beneath the site. As shown on **Figure 4**, VOCs are present in offsite monitoring well MW-13, located between the station and the building on the western adjacent property. Groundwater flow had a westerly component during the event, although historically flow has been predominantly toward the northwest. A groundwater contour map for the March 2025 event is provided as **Figure 5** and rose diagram illustrating historical groundwater flow directions is provided as **Figure 6**. Additional details regarding the groundwater monitoring and sampling results are presented in the quarterly groundwater monitoring reports for the site.

CONCLUSIONS AND RECOMMENDATIONS

Based on the April 29, 2025 soil vapor monitoring results, VOCs were detected in the vapor samples collected from SV-1 and SV-2. While GRO increased slightly and other VOCs fluctuated since the prior event in October 2024, all detected concentrations were well below applicable vapor intrusion RBCs for the commercial worker scenario.

Montrose is currently in the process of installing a two-phase extraction (TPE) remediation system at the gas station property for pilot testing remedial alternatives at the Site. TPE pilot testing is expected to be conducted in summer 2025 and active remediation implemented shortly thereafter, which are anticipated to improve subsurface soil, soil vapor, and groundwater conditions beneath the site.

Given the predominant northwesterly groundwater flow direction and presence of VOCs in groundwater collected from nearby site wells, periodic monitoring of SV-1 and SV-2 is warranted to ensure vapor intrusion does not pose a risk to occupants of the western adjacent building. Montrose recommends semi-annual vapor monitoring be conducted while active remediation is being implemented at the site, with the next event proposed for October 2025 and the results reported along with the Fourth Quarter 2025 groundwater monitoring results.

Montrose is pleased to be of service to UP and the ODEQ. If there are questions regarding this report or if additional site information is required, please do not hesitate to contact Montrose at (714) 919-6500.

REFERENCES:

Montrose Environmental, 2025. *Additional Site Assessment Report, United Pacific #5468, 5720 Main Street, Springfield, Oregon, DEQ Tanks File No.: 20-20-0844.* January 21.

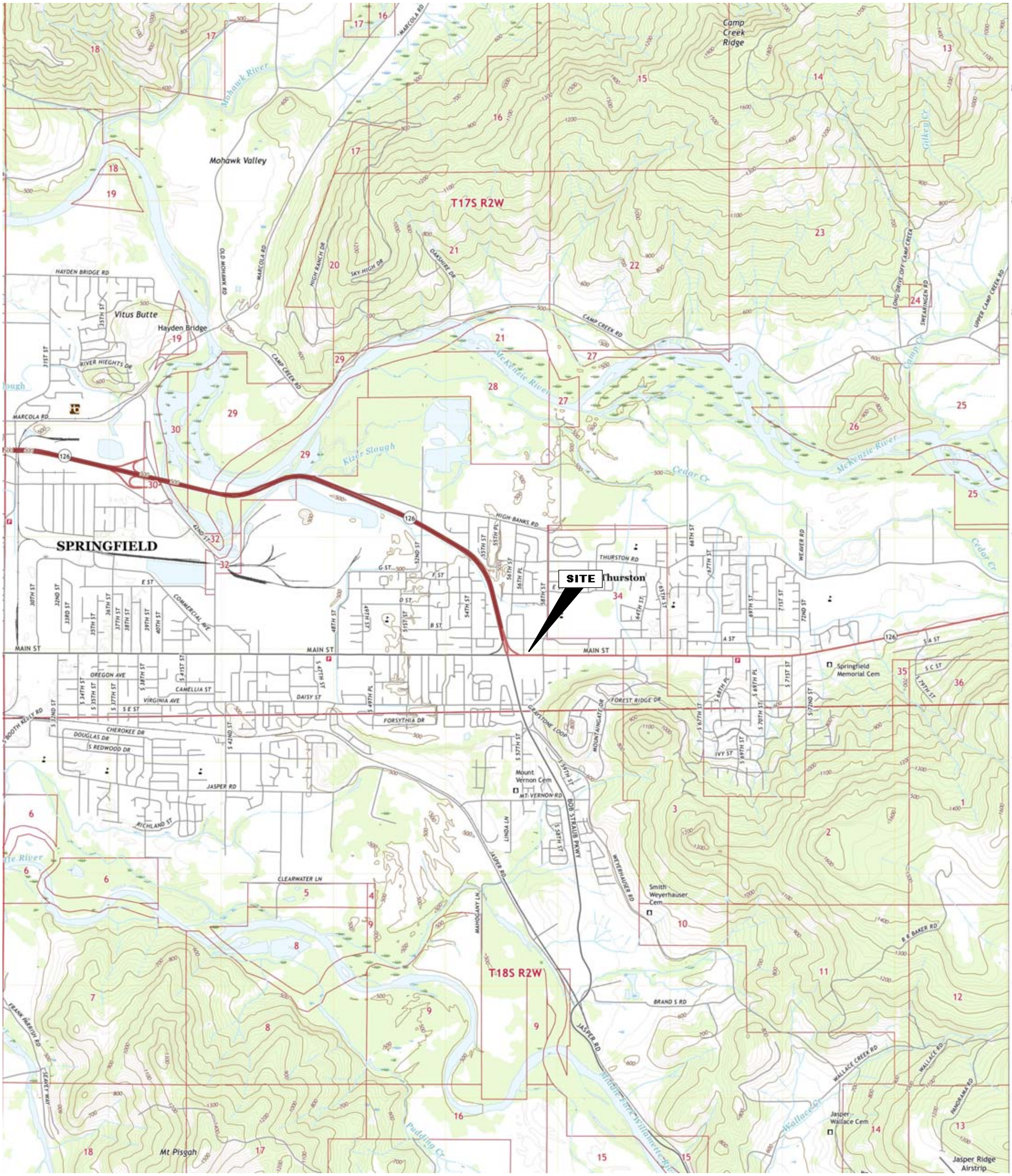
Montrose Environmental, 2025. *First Quarter 2025 Groundwater Monitoring Report, United Pacific #5468, 5720 Main Street, Springfield, Oregon, DEQ Tanks File No.: 20-20-0844.* May 23.

State of Oregon, Department of Environmental Quality (DEQ), 2025, *Guidance for Assessing and Remediating Vapor Intrusion in Buildings*, updated March 2025.

ACRONYMS:

COCs:	Constituents of concern
CULs:	Cleanup Levels
EDB:	1,2-dibromoethane
DCE:	1,1-Dichloroethene
Hg:	Mercury
$\mu g/m^3$:	micrograms per cubic meter
L:	Liter
LPH:	liquid phase hydrocarbons
Min:	Minute
mL:	milliliter
MTBE:	methyl tert-butyl ether
nm:	not measured
ODEQ:	Oregon Department of Environmental Quality
RBC:	Risk Based Concentration
RL:	reporting limit
SS:	Sub-slab
SV:	Soil vapor
TPH-Dx	total petroleum hydrocarbons quantified as diesel
TPH-Gx:	total petroleum hydrocarbons quantified as gasoline
TPH-Ox	total petroleum hydrocarbons quantified as oil
VI:	Vapor intrusion
VOCs:	volatile organic compounds

FIGURES



Map Information:
U.S. GEOLOGICAL SURVEY
SPRINGFIELD QUADRANGLE
44°02'46.0"N 122°55'43.0"W

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1631 E. Saint Andrew Place, Santa Ana, CA 92705 | t 714.919.6500

N

0 4000

APPROX. SCALE: 1" = 4000'

FIGURE 1

SITE LOCATION MAP

United Pacific #5468
5720 Main Street,
Springfield, OR 97478

DATE DRAWN
11/10/2022

PROJECT NO.
006811

FILE NO.
006811F1-SLM

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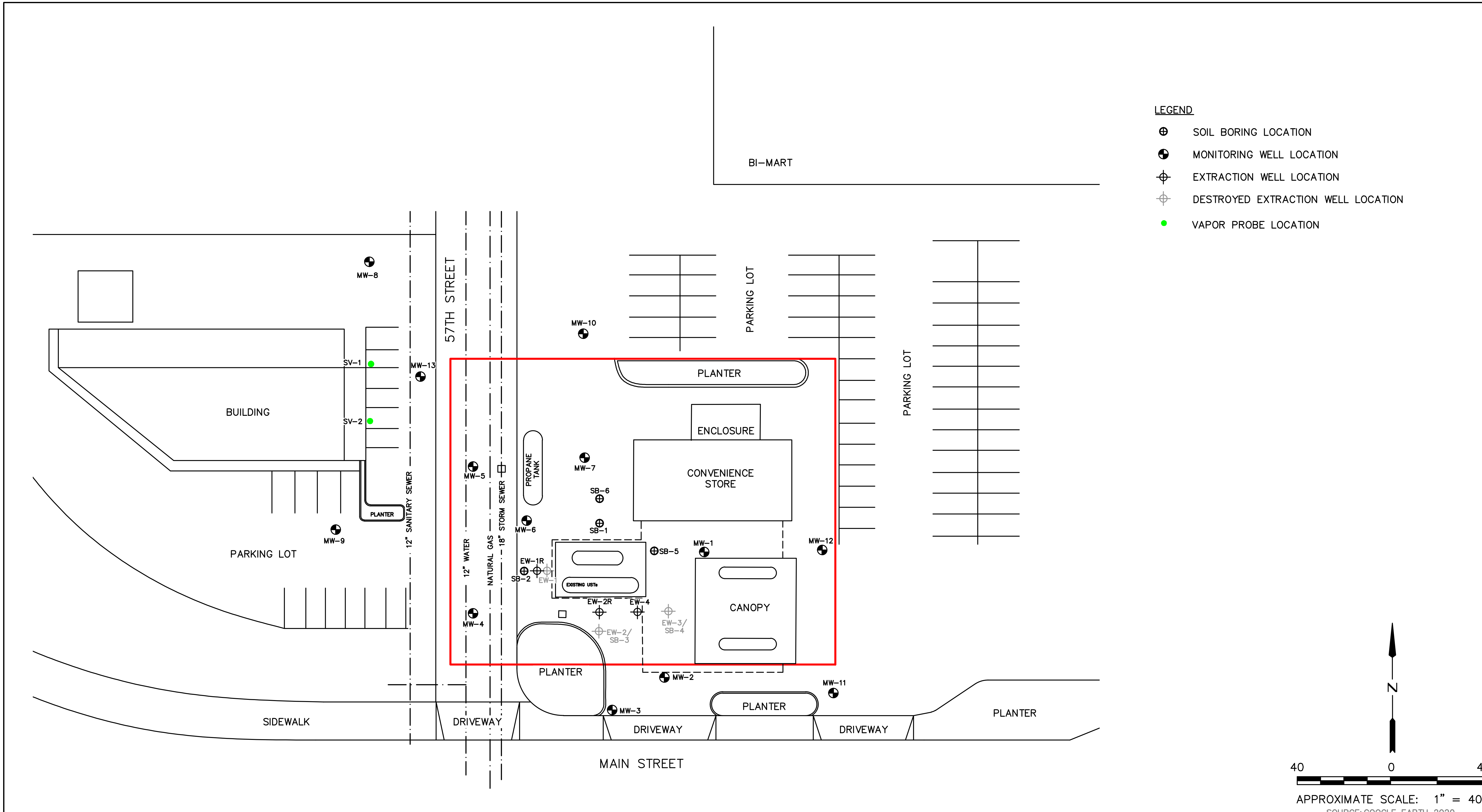

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FIGURE 2

AREA PLAN

United Pacific #5468
5720 Main Street,
Springfield, OR 97478

DATE DRAWN	02/21/2025
PROJECT NO.	027409
FILE NO.	F2-AP

R:\03_Site Assessment & Remediation\United Pacific\5468, Springfield, OR\Reports\Groundwater Monitoring\2025\1Q25\Figures\004668.dwg

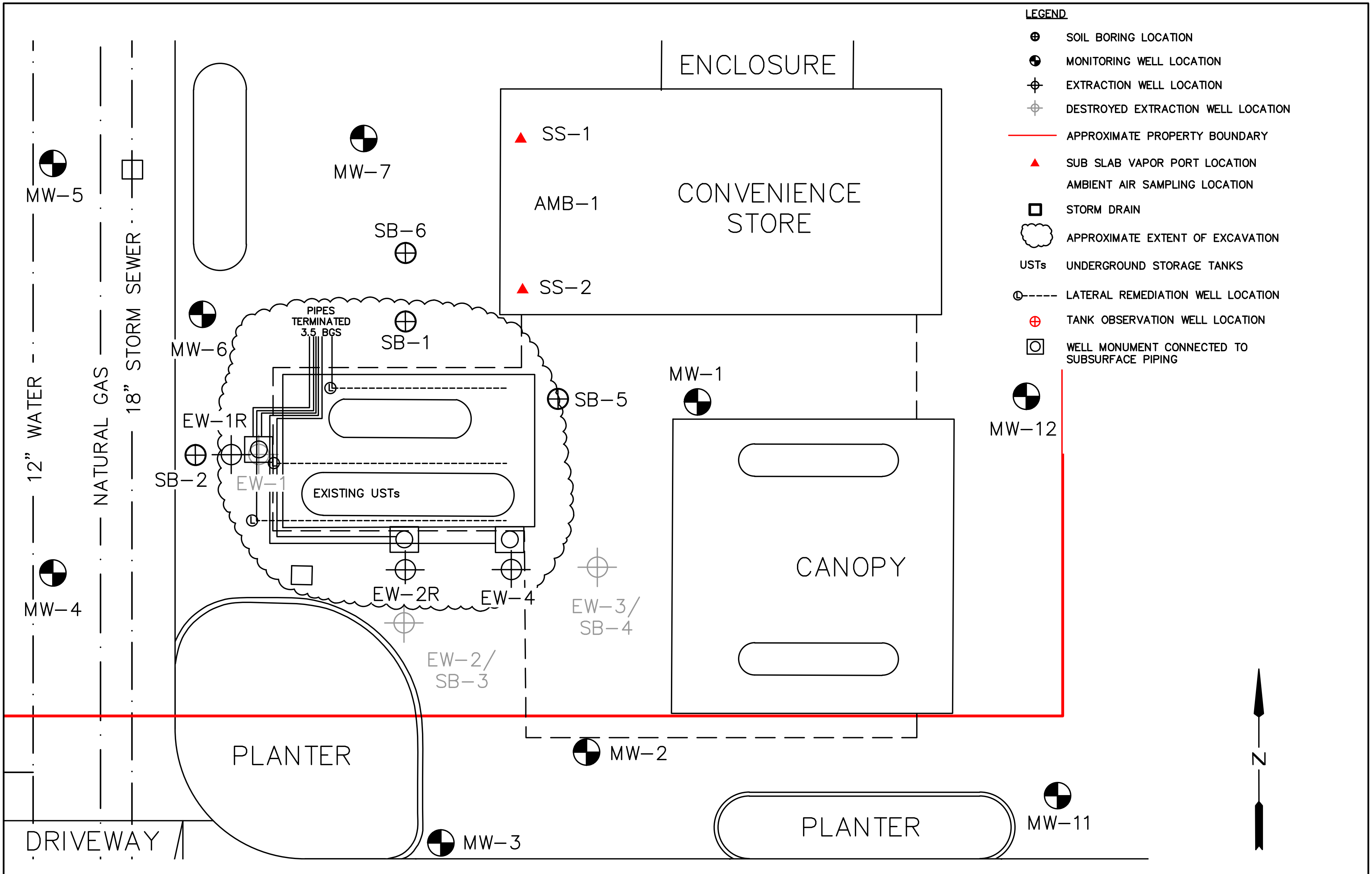

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FIGURE 3

SITE PLAN

United Pacific #5468
5720 Main Street,
Springfield, OR 97478

DATE DRAWN	2/21/2025
PROJECT NO.	027409
FILE NO.	F3-SP

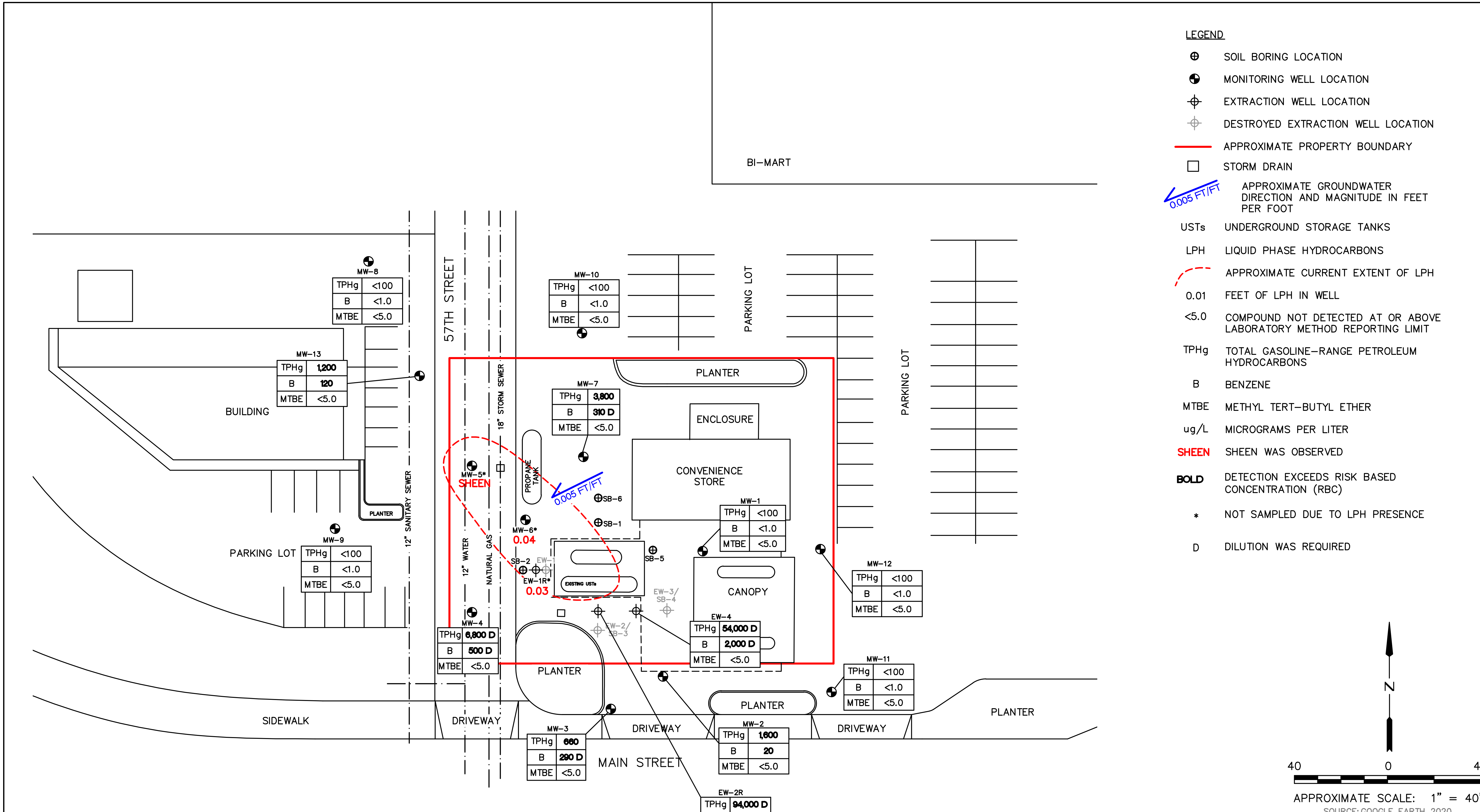

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FIGURE 4

GROUNDWATER ANALYTICAL MAP
MARCH 19 & 20, 2025

United Pacific #5468
5720 Main Street,
Springfield, OR 97478

DATE DRAWN	04/29/2025
PROJECT NO.	027409
FILE NO.	F4-GAR

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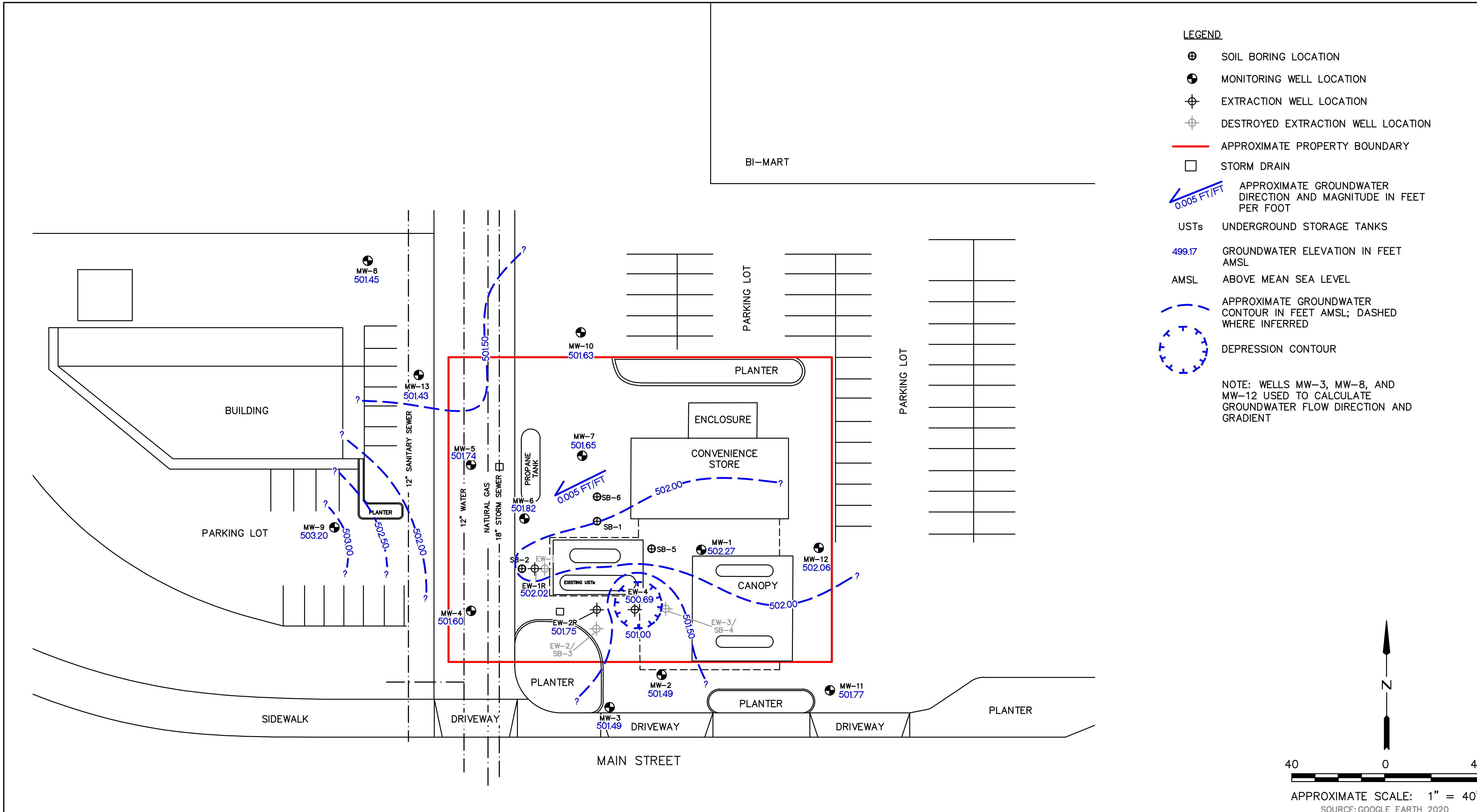

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FIGURE 5

GROUNDWATER CONTOUR MAP
MARCH 19 & 20, 2025

United Pacific #5468
5720 Main Street,
Springfield, OR 97478

DATE DRAWN	04/29/2025
PROJECT NO.	027409
FILE NO.	F5–GCM

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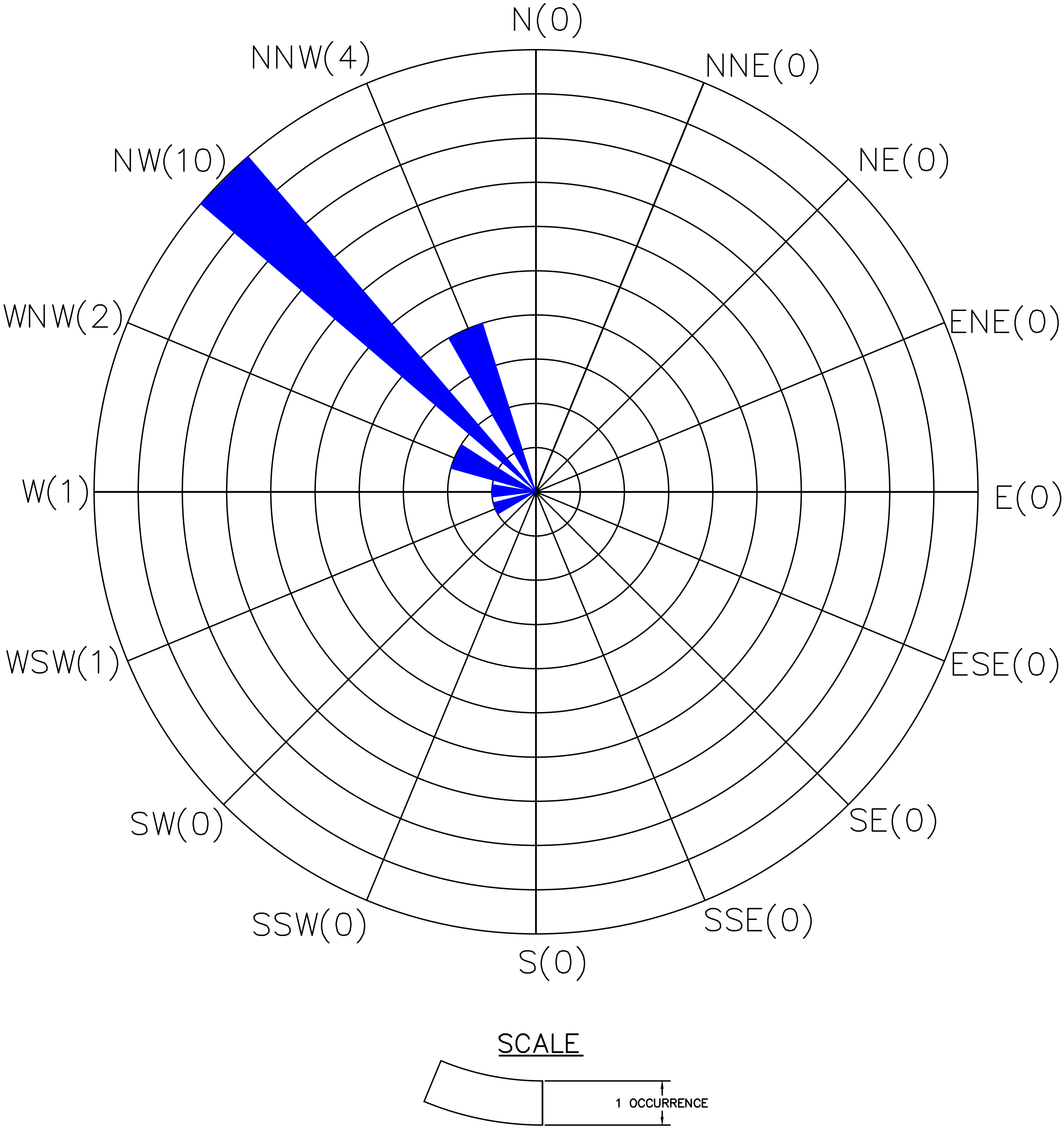

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FIGURE 6

GROUNDWATER FLOW DIRECTION
ROSE DIAGRAM

United Pacific #5468
5720 Main Street,
Springfield, OR 97478

DATE DRAWN	04/29/2025
PROJECT NO.	027409
FILE NO.	F6-RD

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TABLES

Table 1
Soil Vapor Analytical Results
United Pacfic #5468
Springfield, Oregon

		Building:	Western Adjacent Building		
		Location:	SV-1	SV-2	DUP-1 (duplicate of SV-1)
		Sample Depth (ft bgs)	5	5	5
		Collection Date:	04/29/25	04/29/25	04/29/25
Analyte	CAS Number	RBCsv - Soil Vapor Volatilization into Indoor Air (Commercial)[1]			
VOCs - EPA Method TO-15 (µg/m3)					
1,1,1-Trichloroethane	71-55-6	730,000	<0.218	<0.218	<0.218
1,1,2,2-Tetrachloroethane	79-34-5	7.1	<1.37	<1.37	<1.37
1,1,2-Trichloroethane	79-00-5	26	<0.218	<0.218	<0.218
1,1-Dichloroethane	75-34-3	260	<0.162	<0.162	<0.162
1,1-Dichloroethene	75-35-4	580	<0.159	<0.159	<0.159
1,2,4-Trichlorobenzene	120-82-1	290	<4.45	<4.45	<4.45
1,2,4-Trimethylbenzene	95-63-6	8,800	<9.83	<9.83	<9.83
1,2-Dibromoethane (EDB)	106-93-4	0.068	<0.0164	<0.0164	<0.0164
1,2-Dichlorobenzene	95-50-1	29,000	<1.20	<1.20	<1.20
1,2-Dichloroethane (EDC)	107-06-2	16	<0.162	<0.162	<0.162
1,2-Dichloropropane	78-87-5	110	<0.924	<0.924	<0.924
1,3,5-Trimethylbenzene	108-67-8	8,800	<2.95	<2.95	<2.95
1,3-Butadiene	106-99-0	14	<0.442	<0.442	<0.442
1,3-Dichlorobenzene	541-73-1	--	<1.20	<1.20	<1.20
1,4-Dichlorobenzene	106-46-7	37	<1.20	<1.20	<1.20
1,4-Dioxane	123-91-1	82	<2.16	<2.16	<2.16
2-Hexanone	591-78-6	4,400	<2.46	<2.46	<2.46
Acetone	67-64-1	--	**14.2**	**27.0**	<9.50
Acrolein	107-02-8	2.9	<0.0312	<0.0312	<0.0312
Benzene	71-43-2	52	**0.936**	**1.58**	**0.683**
Bromoform	75-25-2	370	<2.07	<2.07	<2.07
Bromomethane	74-83-9	730	<0.777	<0.777	<0.777
Carbon Disulfide	75-15-0	100,000	**12.0**	**21.3**	**8.37**
Carbon Tetrachloride	56-23-5	68	<0.252	<0.252	<0.252
CFC-11	75-69-4	--	<1.12	**1.16**	<1.12
CFC-113	76-13-1	730,000	<4.60	<4.60	<4.60
CFC-114	76-14-2	--	<4.19	<4.19	<4.19
CFC-12	75-71-8	15,000	<0.989	<0.989	<0.989
Chlorobenzene	108-90-7	7,300	<0.184	<0.184	<0.184
Chloroethane	75-00-3	580,000	<1.58	<1.58	<1.58
Chloroform	67-66-3	18	<0.195	<0.195	<0.195
Chloromethane	74-87-3	13,000	<0.413	<0.413	<0.413
Cis-1,2-Dichloroethene	156-59-2	5,800	<0.793	<0.793	<0.793
Cis-1,3-Dichloropropene	10061-01-5	--	<0.908	<0.908	<0.908
Cyclohexane	110-82-7	880,000	<2.07	<2.07	<2.07
Dichlorobromomethane	75-27-4	11	<1.34	<1.34	<1.34
Dioxane, 1,4-	123-91-1	82	<2.16	<2.16	<2.16
Ethyl Acetate	141-78-6	10,000	<7.21	<7.21	<7.21
Ethylbenzene	100-41-4	160	<8.68	<8.68	<8.68

Table 1
Soil Vapor Analytical Results
United Pacfic #5468
Springfield, Oregon

		Building:	Western Adjacent Building		
		Location:	SV-1	SV-2	DUP-1 (duplicate of SV-1)
		Sample Depth (ft bgs)	5	5	5
		Collection Date:	04/29/25	04/29/25	04/29/25
Analyte	CAS Number	RBCsv - Soil Vapor Volatilization into Indoor Air (Commercial)(1)			
VOCs - EPA Method TO-15 (µg/m3)					
Gasoline	86290-81-5	40,000	**326**	**841**	**296**
Heptane	142-82-5	58,000	<2.46	<2.46	<2.46
Hexachlorobutadiene	87-68-3	19	<2.13	<2.13	<2.13
n-Hexane	110-54-3	100,000	<7.05	<7.05	<7.05
Isopropyl Alcohol	67-63-0	29,000	**15.9**	**70.5**	**39.1**
m, p-Xylene	179601-23-1	15,000(2)	<17.4	<17.4	<17.4
Methyl Methacrylate	80-62-6	100,000	<8.19	<8.19	<8.19
Methyl t-butyl ether	1634-04-4	1,600	<0.721	<0.721	<0.721
Methylene Chloride	75-09-2	41,000	<2.08	<2.08	<2.08
Naphthalene	91-20-3	12	**1.09**	**1.09**	**1.07**
o-Xylene	95-47-6	15,000	<8.68	<8.68	<8.68
Styrene	100-42-5	150,000	<2.56	<2.56	<2.56
Tetrachloroethene (PCE)	127-18-4	1,600	<13.6	<13.6	<13.6
Tetrahydrofuran	109-99-9	290,000	<1.77	3.64	<1.77
Toluene	108-88-3	730,000	**9.02**	**21.4**	<7.54
Trans-1,2-Dichloroethene	156-60-5	5,800	<0.793	<0.793	<0.793
Trans-1,3-Dichloropropene	10061-02-6	--	<2.72	<2.72	<2.72
Trichloroethene	79-01-6	100	<0.215	<0.215	<0.215
Vinyl Acetate	108-05-4	29,000	<2.11	<2.11	<2.11
Vinyl Chloride	75-01-4	93	<0.511	<0.511	<0.511
Major Gases - EPA Method 3C (%)					
Carbon Dioxide	124-38-9	--	**1.32**	**1.35**	**1.25**
Carbon Monoxide	630-08-0	--	<0.100	<0.100	<0.0750
Methane	74-82-8	--	<0.100	<0.100	<0.0750
Nitrogen	7727-37-9	--	**77.4**	**77.3**	**77.5**
Oxygen	7782-44-7	--	**21.2**	**21.4**	**21.2**
Hydrogen	1333-74-0	--	<0.100	<0.100	<0.0750
Helium - GC/TCD (%)					
Helium	7440-59-7	--	<0.400	<0.400	<0.300

Notes:
BOLD = Detections are in bold font
Shaded = Detections that exceed ODEQ RBCs are shaded
(1) = OQED Table 1: Chronic Vapor Intrusion Risk-Based Concentrations - March 2025; more concervative value of cancer/non-cancer cited
(2) = xylenes, m- & p- are listed separately on RBC table; each with RBC of 15,000 $\mu g/m^3$
< = not detected at or above stated laboratory reporting limit (RL)
-- = CAS Number not listed in RBC Table 1
$\mu g/m^3$ = micrograms per cubic meter
% = percent
CFC-11 = Trichloroflouromethane
CFC-12 = Dichlorodiflouromethane
EDB = 1,2-Dibromoethane
EPA = Environmental Protection Agency
ft bgs - feet blow ground surface
GC/TCD = gas chromatography/thermal conductivity detector
NV = not volatile
NITI = no inhalation toxicity information
OQED = Oregon Department of Environmental Quality
RBC = State of Oregon Department of Environmental Qulity Risk-Based Concentration
RBCsv = risk-based concentration for soil vapor volatilization to indoor air
VOCs = volatile organic compounds

Table 2
Historical Soil Vapor Analytical Results
United Pacfic #5468
Springfield, Oregon

		Building:	Western Adjacent Building		
		Location:	SV-1	SV-2	DUP-1 (duplicate of SV-2)
		Sample Depth (ft bgs)	5	5	5
		Collection Date:	10/29/24	10/29/24	10/29/24
Analyte	CAS Number	RBCsv - Soil Vapor Volatilization into Indoor Air (Commercial)(1)			
VOCs - EPA Method TO-15 (µg/m3)					
1,1,1-Trichloroethane	71-55-6	730,000	<0.218	<0.218	<0.218
1,1,2,2-Tetrachloroethane	79-34-5	7.1	<1.37	<1.37	<1.37
1,1,2-Trichloroethane	79-00-5	26	<0.218	<0.218	<0.218
1,1-Dichloroethane	75-34-3	260	<0.162	<0.162	<0.162
1,1-Dichloroethene	75-35-4	580	<0.159	<0.159	<0.159
1,2,4-Trichlorobenzene	120-82-1	290	<4.45	<4.45	<4.45
1,2,4-Trimethylbenzene	95-63-6	8,800	<9.83	<9.83	<9.83
1,2-Dichlorobenzene	95-50-1	29,000	<1.2	<1.2	<1.2
1,2-Dichloroethane	107-06-2	16	<0.162	<0.162	<0.162
1,2-Dichloropropane	78-87-5	110	<0.924	<0.924	<0.924
1,3,5-Trimethylbenzene	108-67-8	8,800	<2.95	<2.95	<2.95
1,3-Butadiene	106-99-0	14	<0.442	<0.442	<0.442
1,3-Dichlorobenzene	541-73-1	--	<1.2	<1.2	<1.2
1,4-Dichlorobenzene	106-46-7	37	<1.2	<1.2	<1.2
1-Propene	115-07-1	440,000	<1.03	**2.2**	<1.03
2-Butanone	78-93-3	730,000	**1.81**	**4.35**	<1.77
2-Hexanone	591-78-6	4,400	<2.46	2.46	<2.46
Acetone	67-64-1	--	**18.7**	**14.2**	<9.5
Acrolein	107-02-8	2.9	<0.0312	<0.0312	<0.0312
Benzene	71-43-2	52	**1.12**	**0.825**	**0.951**
Benzene, 1-Ethyl-4-Methyl-	622-96-8	--	<2.95	<2.95	<2.95
Bromoform	75-25-2	370	<2.07	<2.07	<2.07
Bromomethane	74-83-9	730	<0.777	<0.777	<0.777
Carbon Disulfide	75-15-0	100,000	**23.8**	**12.5**	<6.23
Carbon Tetrachloride	56-23-5	68	<0.252	<0.252	<0.252
CFC-11	75-69-4	--	**1.22**	<1.12	<1.12
CFC-113	76-13-1	730,000	<4.6	<4.6	<4.6
CFC-114	76-14-2	--	<4.19	<4.19	<4.19
CFC-12	75-71-8	15,000	**2.46**	**2.3**	**2.38**
Chlorobenzene	108-90-7	7,300	<0.184	0.184	<0.184
Chlorodibromomethane	124-48-1	NITI	<1.7	<1.7	<1.7
Chloroethane	75-00-3	580,000	<1.58	<1.58	<1.58
Chloroform	67-66-3	18	<0.195	<0.195	<0.195
Chloromethane	74-87-3	13,000	**0.833**	**0.523**	**0.529**
Cis-1,2-Dichloroethene	156-59-2	5,800	<0.793	<0.793	<0.793
Cis-1,3-Dichloropropene	10061-01-5	--	<0.908	<0.908	<0.908
Cyclohexane	110-82-7	880,000	<2.07	<2.07	<2.07
Dichlorobromomethane	75-27-4	11	<1.34	<1.34	<1.34
Dioxane, 1,4-	123-91-1	82	<2.16	<2.16	<2.16
Ethyl Acetate	141-78-6	10,000	<7.21	<7.21	<7.21
Ethylbenzene	100-41-4	160	<8.68	<8.68	<8.68

Table 2
Historical Soil Vapor Analytical Results
United Pacfic #5468
Springfield, Oregon

		Building:	Western Adjacent Building		
		Location:	SV-1	SV-2	DUP-1 (duplicate of SV-2)
		Sample Depth (ft bgs)	5	5	5
		Collection Date:	10/29/24	10/29/24	10/29/24
Analyte	CAS Number	RBCsv - Soil Vapor Volatilization into Indoor Air (Commercial)(1)			
VOCs - EPA Method TO-15 (μg/m3)					
Ethylene dibromide	106-93-4	0.68	<0.0164	<0.0164	<0.0164
Gasoline	86290-81-5	40,000	<236	<236	<236
Heptane	142-82-5	58,000	<2.46	2.46	<2.46
Hexachlorobutadiene	87-68-3	19	<6.4	<6.4	<6.4
Hexane	110-54-3	100,000	<7.05	<7.05	<7.05
Isopropyl Alcohol	67-63-0	29,000	<4.92	**8.82**	<4.92
m, p-Xylene	179601-23-1	15,000(2)	<17.4	<17.4	<17.4
Methyl isobutyl ketone	108-10-1	440,000	<2.46	2.46	<2.46
Methyl Methacrylate	80-62-6	100,000	<8.19	8.19	<8.19
Methyl t-butyl ether	1634-04-4	1,600	<0.721	0.721	<0.721
Methylene Chloride	75-09-2	41,000	<2.08	**3.89**	<2.08
Naphthalene	91-20-3	12	**0.387**	**0.611**	**0.448**
o-Xylene	95-47-6	15,000	<8.68	<8.68	<8.68
Styrene	100-42-5	150,000	<2.56	<2.56	<2.56
Tetrachloroethene (PCE)	127-18-4	1,600	<13.6	<13.6	<13.6
Tetrahydrofuran	109-99-9	290,000	<1.77	<1.77	<1.77
Toluene	108-88-3	730,000	**12.3**	**11.9**	**13.5**
Toluene, Alpha-Chloro-	100-44-7	8.3	<3.11	<3.11	<3.11
Trans-1,2-Dichloroethene	156-60-5	5,800	<0.793	<0.793	<0.793
Trans-1,3-Dichloropropene	10061-02-6	--	<2.72	<2.72	<2.72
Trichloroethene	79-01-6	100	<0.215	<0.215	<0.215
Vinyl Acetate	108-05-4	29,000	<2.11	<2.11	<2.11
Vinyl Chloride	75-01-4	93	<0.511	<0.511	<0.511
Major Gases - EPA Method 3C (%)					
Carbon Dioxide	124-38-9	--	**1.54**	**2.69**	**2.54**
Carbon Monoxide	630-08-0	--	<0.0750	<0.0750	<0.0750
Methane	74-82-8	--	<0.0750	<0.0750	<0.0750
Nitrogen	7727-37-9	--	**73.9**	**73.5**	**73.8**
Oxygen	7782-44-7	--	**24.5**	**23.8**	**23.7**
Hydrogen	1333-74-0	--	<0.0750	<0.0750	<0.0750
Helium - GC/TCD (%)					
Helium	7440-59-7	--	<0.300	<0.300	<0.300

Notes:
BOLD = Detections are in bold font
Shaded = Detections that exceed ODEQ RBCs are shaded
(1) = OQED Table 1: Chronic Vapor Intrusion Risk-Based Concentrations - March 2025; more concervative value of cancer/non-cancer cited
(2) = xylenes, m- & p- are listed separately on RBC table; each with RBC of 15,000 μg/m^3
< = not detected at or above stated laboratory reporting limit (RL)
-- = CAS Number not listed in RBC Table 1
μg/m^3 = micrograms per cubic meter
% = percent
CFC-11 = Trichloroflouromethane
CFC-12 = Dichlorodiflouromethane
EDB = 1,2-Dibromoethane
EPA = Environmental Protection Agency
ft bgs - feet blow ground surface
GC/TCD = gas chromatography/thermal conductivity detector
NV = not volatile
NITI = no inhalation toxicity information
OQED = Oregon Department of Environmental Quality
RBC = State of Oregon Department of Environmental Qulity Risk-Based Concentration
RBCsv = risk-based concentration for soil vapor volatilization to indoor air
VOCs = volatile organic compounds

APPENDIX A

Agency Correspondence

From:	SAWKA Nancy * DEQ
To:	Laura Skow
Subject:	RE: [External] - RE: United Pacific #5468 - 5720 Main St., Springfield OR - LUST ID#20-20-0844 - 1Q25 GWM event notification, 3/18 & 3/19/25 - 4Q24 GWM Report for record
Date:	Thursday, March 27, 2025 8:48:21 PM

Hi Laura – Sorry about that. Yes, April is a good time for the next vapor event. nancy

From: Laura Skow <lskow@montrose-env.com>
Sent: Tuesday, March 25, 2025 8:21 PM
To: SAWKA Nancy * DEQ <Nancy.SAWKA@deq.oregon.gov>
Subject: RE: [External] - RE: United Pacific #5468 - 5720 Main St., Springfield OR - LUST ID#20-20-0844 - 1Q25 GWM event notification, 3/18 & 3/19/25 - 4Q24 GWM Report for record

Hi Nancy,

Attached is the 4Q24 GWM Report for your records. As previously mentioned, at MW-13 (new well near sewer line) COCs were significantly lower than the initial sampling event and may be related to water table fluctuation; future sampling will help to establish a trend for this well.

From your email below, I would like to confirm you are in agreement with the April timing for the soil vapor probe sampling. It seemed a word may have been left out in the response, so just double checking.

Let me know if there are any questions regarding the report.

Best regards,

Laura

Laura Skow, PG *(she/her)*
Senior Project Manager
Montrose Environmental
Santa Ana, CA | US Pacific Time
Office: +1-714-919-6533 | Mobile: +1-714-743-7855
lskow@montrose-env.com | montrose-env.com

From: SAWKA Nancy * DEQ <Nancy.SAWKA@deq.oregon.gov>
Sent: Monday, March 17, 2025 8:44 AM
To: Laura Skow <lskow@montrose-env.com>
Subject: RE: [External] - RE: United Pacific #5468 - 5720 Main St., Springfield OR - LUST ID#20-20-

APPENDIX B

Field Sampling Forms

SOIL VAPOR SAMPLING DATA SHEET

A. GENERAL INFORMATION

SITE: United Pacific **SAMPLING DATE:** 4/29/25

WELL ID: SV-1 **SHIPPING DATE:**

SAMPLER: DO

Purge Flow (mL/min): 200

One System Purge Volume (mL): (Tubing, Sand Pack, Dry Bentonite Volumes) 0

Purge Volume Required before Sampling (mL): NP

Purge Volume Removed (mL): 3000

Sand Pack Height (inches): Dry Bentonite Height (inches):

Sand Pack Diameter(inches): Dry Bentonite Diameter(inches):

Tubing Length (feet): Tubing Diameter (inches):

** Assumes 40% Sand Porosity and 50% Bentonite Porosity*

B. SAMPLE PURGE INFORMATION

Collect Sample with Summa Canister. Ensure the pressure in the canisters is over -26 in.Hg when starting. Stop sample collection with -5 in. HG in Summa Canisiter.

Notes:
1515: Preform vacuum test / Pass 17 Hg
1517: Start Purge
1532: Stop Purge

REGULAR SAMPLE	DUPLICATE SAMPLE
SAMPLE ID: SV-1	**SAMPLE ID:** DUP-1
VACUUM TEST (PASS/FAIL,VACUUM): Pass / 17Hg	**VACUUM TEST (PASS/FAIL, VACUUM):** ~~NA~~ DO Pass / 17Hg
VOC's (PID) : NA	**VOC's from PID :** NA
CANISTER SERIAL NO.: 11408 FLOW RATE (L/min):	**CANISTER SERIAL NO.:** 11412 FLOW RATE (L/min):
SAMPLE TIME: START: 1533 END: 1547	**SAMPLE TIME:** START: 1533 END: 1609
CANISTER PRESSURE: INITIAL: 31 Hg FINAL: 8 Hg	**CANISTER PRESSURE:** INITIAL: 40 Hg FINAL: 14 Hg
Helium Concentration Maintained : 94%	**Helium Concentration Maintained :**
LABORATORY: Fremont	**LABORATORY:** Fremont

SAMPLER SIGNATURE

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (800) 545-7558

SOIL VAPOR SAMPLING DATA SHEET

A. GENERAL INFORMATION

SITE: United Pacific 5468 SAMPLING DATE: 4/29/25

WELL ID: SV-2 SHIPPING DATE: ______

SAMPLER: DO

Purge Flow (mL/min): 200

One System Purge Volume (mL): (Tubing, Sand Pack, Dry Bentonite Volumes) 0

Purge Volume Required before Sampling (mL): NP

Purge Volume Removed (mL): 3000

Sand Pack Height (inches): ______ Dry Bentonite Height (inches): ______

Sand Pack Diameter(inches): ______ Dry Bentonite Diameter(inches): ______

Tubing Length (feet): ______ Tubing Diameter (inches): ______

** Assumes 40% Sand Porosity and 50% Bentonite Porosity*

B. SAMPLE PURGE INFORMATION

Collect Sample with Summa Canister. Ensure the pressure in the canisters is over -26 in.Hg when starting. Stop sample collection with -5 in. HG in Summa Canisiter.

Notes:
1440: Preform Vacuum test /16 Hg Pass
1445: Start Purge
1500: Stop Purge

REGULAR SAMPLE		DUPLICATE SAMPLE	
SAMPLE ID:	SV-2	SAMPLE ID:	
VACUUM TEST (PASS/FAIL,VACUUM):	Pass 16Hg	VACUUM TEST (PASS/FAIL, VACUUM):	
VOC's (PID):	NA	VOC's from PID:	
CANISTER SERIAL NO.:	4686	CANISTER SERIAL NO.:	
FLOW RATE (L/min):		FLOW RATE (L/min):	
SAMPLE TIME: START:	1501	SAMPLE TIME: START:	
END:	1508	END:	
CANISTER PRESSURE: INITIAL:	33 Hg	CANISTER PRESSURE: INITIAL:	
FINAL:	9 Hg	FINAL:	
Helium Concentration Maintained:	92%	Helium Concentration Maintained:	
LABORATORY:	Fremont	LABORATORY:	

SAMPLER SIGNATURE

Fremont Analytical — An Alliance Technical Group Company

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790

Air Chain of Custody Record & Laboratory Services Agreement

Date: 4/29/25 Page: 1 of: 1

Laboratory Project No (internal):

Project Name: 5468 Springfield

Special Remarks:

Client: Montrose/Blaine Tech

Project No: PROJ-027409/5468, Springfield

Address: 1631 E. Saint Andrew Pl.

Location: 5720 Main St, Springfield, OR

City, State, Zip: Santa Ana

Collected by: Diana Ojeda

Telephone: (714) 743-7855 / (714) 919-6533

Reports to (PM): Laura Skow

Disposal: Samples will be disposed of one week after report is submitted unless otherwise requested. ☐ Retain volume (specify above) ☐ Return to client

Fax:

Email (PM): lskow@montrose-env.com

	Sample Name	Canister / Flow Reg Serial #	Sample Type (Matrix) *	Container Type **	Expected Fill Time / Flow Rate	Sample Start Date & Time	Field Initial Sample Pressure (" Hg)	Sample End Date & Time	Field Final Sample Pressure (" Hg)	Full list VOCs TO15	Select VOCs TO15 ***	APH TO15	Siloxanes TO15	Sulfur TO15	Major Gases 3C	Helium 3C Mod	VOCs 8260	GX/BTEX 8260	GRO	Comments
1	SV-2	~~4480~~ 46986 / FC-5	SV	1.4L	~~3300~~	4/29/25 1501	33	4/29 1508	9	X					X	X			X	
2	DUP-1	11412 / FC-24	SV	1.4L		4/29 1533	40	4/29 1609	14	X					X	X			X	
3	SV-1	11408 / FC-24	SV	1.4L		4/29 1533	31	4/29 1547	8	X					X	X			X	
4																				
5																				

* Matrix Codes: AA = Ambient Air OA = Outdoor Air IA = Indoor Air S = Subslab / Soil Gas SVE = SVE RNG = Biogas / Landfill / Digester

** Container Codes: BV = 1 Liter Bottle Vac 6L = 6L Canister 1L = 1L Canister CYL = High Pressure Cylinder F = Filter S = Sorbent Tube TB = Tedlar Bag

*** Select one: ☐ BTEXN & APH ☐ PCE & Breakdown ☐ Other, specify in comments

Turn-Around Time: ☒ Standard ☐ Next Day ☐ 3 Day ☐ Same Day ☐ 2 Day ______ specify

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x [signature]	Diana Ojeda	4/30/25 1251	x [signature]	Nathan Wolle	4/30/25 1252
x			x		

APPENDIX C

Site Background Information

SITE BACKGROUND
United Pacific #5468
5720 Main Street
Springfield Oregon

Site Assessment and Remediation History

The Site is an active retail fueling station located on the north side of Main Street, approximately 500 feet east of the intersection of Main Street and Bob Straub Parkway. The Site is located at the southern end of a large parking lot for multiple retail stores and restaurants. The property is improved with a convenience store and canopy covering four dispenser islands, each with one fuel dispenser. Gasoline and diesel fuel are both dispensed at the Site.

Three USTs are located on the Site; two contain unleaded gasoline and one contains diesel fuel. The capacities of the USTs are 12,000 gallons each. Note that the UST containing premium grade gasoline, suspected of leaking, was emptied and is not in use; UP plans to replace the entire fuel distribution system at the Site. The regular grade gasoline and diesel USTs are currently active.

A petroleum release at the Site was reported to DEQ in 1989. Various groundwater monitoring wells and remediation wells were installed and a remediation system was operated at the Site. A second fuel release was reported in 1997 and the remediation system operated until 2000. Numerous site assessments and groundwater monitoring events were conducted throughout the years and eventually, in 2012, the Site was granted NFA status by DEQ and the environmental issues at the Site were considered resolved.

On September 21, 2020, UP notified the DEQ of a failure of the UST containing premium gasoline at the Site and that the tank had been emptied and taken offline. On September 22, 2020, UP contacted Montrose to relay concerns regarding one of the USTs at the Site; the continuous statistical leak detection (CSLD) system had indicated a failure of the UST containing premium gasoline. On September 23, 2020, a *UST Petroleum Release Form* was submitted to the DEQ to further document the release. On September 24, 2020, Montrose performed a visit to inspect the Site and review recent fuel inventory records (kept in the convenience store office). Based on conversations with the station manager and a review of fuel inventory documents, problems with the fuel inventory were first observed on or around August 13, 2020. On September 15, 2020, the station stopped dispensing premium gasoline and over the next several days, physical measurements of the fuel level in the premium UST indicated that gasoline was exiting the system.

On September 19, 2020, approximately 3,914 gallons of gasoline was removed from the premium UST and on September 23, 2020, the fuel level was pumped down to the lowest achievable level and the fuel was transported offsite for disposal.

On October 13, 2020, Montrose prepared and submitted an Initial (Twenty Day) Report Form for UST Cleanup Projects to the DEQ and DEQ assigned the following leaking underground storage tank (LUST) number to the Site: 20-20-0844. Note, the Site had previously been identified by the following underground storage tank (UST) number: 791.

In November 2020, Montrose performed an initial site assessment which included advancing six soil borings (SB-1 through SB-6) using direct-push drilling techniques and the installation of three LPH extraction wells (EW-1 through EW-3) using roto-sonic drilling techniques. Visible LPH was observed during the advancement of Borings SB-2 through SB-5 and therefore, soil samples were only collected from Borings SB-1 and SB-6. Wells EW-1 through EW-3 were installed in an effort to access and recover the LPH observed during the initial direct-push drilling. Complete details of the work were reported in the *Initial Site Assessment and Interim Remedial Action Report,* dated December 15, 2021. Three soil samples collected contained COCs at concentrations exceeding the DEQ's RBCs for the leaching to groundwater scenario.

During January and February 2021, Montrose performed four separate LPH removal events, during which LPH and impacted groundwater were removed from Wells EW-1 through EW-3. LPH was recovered using various techniques including manual bailing and the use of a vacuum truck. On February 25, 2021, passive down-hole product skimmers were installed in Wells EW-2 and EW-3 to enhance recovery of LPH.

In February and March 2021, Montrose conducted additional site assessment work at the Site which included a vapor intrusion (VI) assessment, utility corridor assessment, and well installation activities. The VI assessment consisted of the collection of two sub-slab soil gas samples (SVP-1 and SVP-2), one indoor ambient air sample, and one outdoor ambient air sample. Additionally, seven groundwater monitoring wells (MW-1 through MW-7) were installed at the Site. Results of the VI assessment indicated that vapors from the liquid phase and dissolved phase hydrocarbon plumes beneath the Site did not currently pose a threat to either indoor or outdoor air. Soil samples collected from five of the seven wells contained COCs at concentrations exceeding DEQ's RBCs for the leaching to groundwater scenario. Following well installation, quarterly groundwater monitoring was initiated at the Site. Initial groundwater monitoring results indicated the presence of LPH or elevated COC concentrations in a majority of the wells. Complete details were reported in the *Additional Site Assessment, Well Installation, Vapor Intrusion, and Groundwater Monitoring Report*, dated June 7, 2021.

In September 2021, additional sub-slab soil vapor and indoor air and ambient air sampling was conducted. The results were reported in the *Third Quarter 2021 Air Monitoring Report*, dated November 16, 2021. Quarterly groundwater monitoring, continued VI assessment and LPH removal efforts are ongoing.

Montrose submitted the *Workplan for Additional Soil and Groundwater Investigation*, dated October 12, 2021, which proposed the installation of up to five additional groundwater monitoring wells, one soil vapor probe, continued vapor intrusion assessment, the collection of additional vapor and ambient air samples, and the completion of a preliminary site conceptual model. The DEQ concurred with the Workplan in their letter dated December 6, 2021.

In December 2021, additional sub-slab soil vapor and indoor air and ambient air sampling was conducted with the results presented in the *Fourth Quarter 2021 Air Monitoring Report,* dated March 10, 2022. The preliminary site conceptual model was completed by Montrose on February 1, 2022, and was sent to the DEQ and UP.

In February 2022, extraction wells EW-1, EW-2 and EW-3, located adjacent to the UST cavity, were decommissioned in advance of planned replacement of the fuel distribution system at the site. The field activities were summarized in the *Well Decommissioning Report*, dated April 25, 2022.

Beginning in March 2022, the fuel distribution system at the Site was replaced by Anderson Environmental Contracting of Kelso, Washington. Following removal of the old USTs, approximately 660 tons of petroleum contaminated soil (PCS) was over-excavated from the UST pit and exported to Coffin Butte Landfill, in Corvallis, Oregon. In addition to soil removal, approximately 47,000 gallons of UST pit water was pumped and disposed of to facilitate the installation of the two new USTs; one 20,000-gallon tank containing diesel and one 20,000-gallon dual-compartment UST containing 12,000-gallons of unleaded gasoline and 8,000-gallons of premium gasoline. Montrose conducted the decommissioning soil sampling as required by Oregon state law. Several soil samples collected from beneath former product lines contained COCs at concentrations exceeding applicable CULs. Montrose directed the over-excavation of soil from those areas and collected confirmation soil samples to show that all PCS was removed. Installation of the new fuel distribution system and rehabilitation of the Site was complete by June 30, 2022.

In September 2022, Montrose conducted drilling activities at the Site which included the installation of three replacement wells identified as EW-1R, EW-2R, and EW-4. The three wells serve as replacements for Wells EW-1, EW-2, and EW-3 that were formally decommissioned in February 2022, prior to the replacement of the fuel distribution system.

In November 2022, Montrose conducted additional assessment activities at the Site which included the installation of four groundwater monitoring wells at locations which served to further delineate hydrocarbon impacts beneath the site and neighboring properties. The wells were identified as MW-8 through MW-11. A fifth well was planned but was ultimately not installed due to time constraints for the project. Soil samples were collected from each of the borings and analyzed for fuel constituents. COCs were not detected at concentrations exceeding applicable CULs. Complete results were presented in the *Additional Site Assessment and Fourth Quarter 2022 Groundwater Monitoring Report*, dated March 2, 2023.

In March 2023, a limited step pumping test was performed in order to determine certain aquifer parameters and to acquire field data needed to assist in the design of a long-term remedial plan for the Site. Results of the test were presented in the *Aquifer Pumping Test Report*, dated May 31, 2023. The pumping test was performed in general accordance with *Workplan for Remedial Pilot Testing*, dated December 5, 2022.

In October 2024, Montrose conducted additional assessment activities at the Site which included the installation of two groundwater monitoring wells at locations to further investigate impacts northwest by the installation of MW-13 and to further define the plume to the east MW-12 at locations that were precleared during assessment activities. Additionally, two soil vapor probes (SV-1 and SV-2) were installed to further investigate impacts northwest of the Site.

Quarterly groundwater monitoring and periodic LPH removal efforts are ongoing at the Site while remedial strategies are being evaluated.

APPENDIX D

Laboratory Analytical Report

3600 Fremont Ave N
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Montrose Environmental
Laura Skow
4150 B Pl NW Suite 106
Auburn, WA 98001

RE: 5468 Spring Field, PROJ - 027409 / 5468, Spring Field
Work Order Number: 2504716

May 28, 2025

Attention Laura Skow:

Alliance Technical Group, LLC - Seattle received 3 sample(s) on 4/30/2025 for the analyses presented in the following report.

Helium by GC/TCD
Major Gases by EPA Method 3C
Volatile Organic Compounds by EPA TO-15

All analyses were performed according to our accredited Quality Assurance program. Please contact the laboratory if you should have any questions about the results.

Alliance Technical Group is committed to accuracy, speed, and customer service. Thank you for choosing Alliance Technical Group's Seattle laboratory team for your analytical needs. We appreciate this opportunity to serve you!

Sincerely,

Kelley Lovejoy

Kelley Lovejoy
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.4 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Revision v1

ALLIANCE TECHNICAL GROUP

CLIENT: Montrose Environmental
Project: 5468 Spring Field
Work Order: 2504716

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2504716-001	SV-2	04/29/2025 3:08 PM	04/30/2025 12:52 PM
2504716-002	DUP-1	04/29/2025 4:09 PM	04/30/2025 12:52 PM
2504716-003	SV-1	04/29/2025 3:47 PM	04/30/2025 12:52 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2504716**

Date: **5/28/2025**

CLIENT: Montrose Environmental

Project: 5468 Spring Field

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Air samples are reported in ppbv and ug/m3.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Standard temperature and pressure assumes 24.45 = (25C and 1 atm).

Note: Gasoline Range Organics reported in ug/m3 should be considered an estimate. The estimated molecular weight of gasoline used in the equation = 100

5/28/2025: Rev1 corrects the Major Gas values reporting for SV-1. Regretfully, there was an error in the data upload which has been corrected in this version of the report.

Qualifiers & Acronyms

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2504716**
Date Reported: **5/28/2025**

CLIENT: Montrose Environmental
Project: 5468 Spring Field

Lab ID: 2504716-001 **Collection Date:** 4/29/2025 3:08:00 PM
Client Sample ID: **SV-2** **Matrix:** SVE

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Helium by GC/TCD				Batch ID: R99555		Analyst: LB
Helium	ND	0.400	D	%	2	5/7/2025 10:51:00 AM
Major Gases by EPA Method 3C				Batch ID: R99560		Analyst: LB
Carbon Dioxide	1.35	0.100	D	%	2	5/7/2025 2:23:00 PM
Carbon Monoxide	ND	0.100	D	%	2	5/7/2025 2:23:00 PM
Methane	ND	0.100	D	%	2	5/7/2025 2:23:00 PM
Nitrogen	77.3	0.100	D	%	2	5/7/2025 2:23:00 PM
Oxygen	21.4	0.100	D	%	2	5/7/2025 2:23:00 PM
Hydrogen	ND	0.100	D	%	2	5/7/2025 2:23:00 PM
BTU	ND		D	BTU/ft³	2	5/7/2025 2:23:00 PM

Lab ID: 2504716-002 **Collection Date:** 4/29/2025 4:09:00 PM
Client Sample ID: **DUP-1** **Matrix:** SVE

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Helium by GC/TCD				Batch ID: R99555		Analyst: LB
Helium	ND	0.300	D	%	1.5	5/7/2025 10:57:00 AM
Major Gases by EPA Method 3C				Batch ID: R99560		Analyst: LB
Carbon Dioxide	1.25	0.0750	D	%	1.5	5/7/2025 2:39:00 PM
Carbon Monoxide	ND	0.0750	D	%	1.5	5/7/2025 2:39:00 PM
Methane	ND	0.0750	D	%	1.5	5/7/2025 2:39:00 PM
Nitrogen	77.5	0.0750	D	%	1.5	5/7/2025 2:39:00 PM
Oxygen	21.2	0.0750	D	%	1.5	5/7/2025 2:39:00 PM
Hydrogen	ND	0.0750	D	%	1.5	5/7/2025 2:39:00 PM
BTU	ND		D	BTU/ft³	1.5	5/7/2025 2:39:00 PM

Analytical Report

Work Order:	**2504716**
Date Reported:	**5/28/2025**

CLIENT: Montrose Environmental
Project: 5468 Spring Field

Lab ID: 2504716-003 **Collection Date:** 4/29/2025 3:47:00 PM
Client Sample ID: **SV-1** **Matrix:** SVE

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Helium by GC/TCD				Batch ID: R99555		Analyst: LB
Helium	ND	0.400	D	%	2	5/7/2025 11:51:00 AM
Major Gases by EPA Method 3C				Batch ID: R99560		Analyst: LB
Carbon Dioxide	1.32	0.100	D	%	2	5/7/2025 2:51:00 PM
Carbon Monoxide	ND	0.100	D	%	2	5/7/2025 2:51:00 PM
Methane	ND	0.100	D	%	2	5/7/2025 2:51:00 PM
Nitrogen	77.4	0.100	D	%	2	5/7/2025 2:51:00 PM
Oxygen	21.2	0.100	D	%	2	5/7/2025 2:51:00 PM
Hydrogen	ND	0.100	D	%	2	5/7/2025 2:51:00 PM
BTU	ND		D	BTU/ft^3	2	5/7/2025 2:51:00 PM

Client: **Montrose Environmental**
WorkOrder: 2504716
Project: 5468 Spring Field

Client Sample ID:	SV-2	**Date Sampled:**	4/29/2025
Lab ID:	2504716-001A	**Date Received:**	4/30/2025
Sample Type:	Summa Canister		

Volatile Organic Compounds by EPA TO-15

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date	Analyst
1,1,1-Trichloroethane	<0.0400	<0.218	0.0400	0.218		EPA-TO-15	05/05/2025	LB
1,1,2,2-Tetrachloroethane	<0.200	<1.37	0.200	1.37		EPA-TO-15	05/05/2025	LB
CFC-113	<0.600	<4.60	0.600	4.60		EPA-TO-15	05/05/2025	LB
1,1,2-Trichloroethane (TCA)	<0.0400	<0.218	0.0400	0.218		EPA-TO-15	05/05/2025	LB
1,1-Dichloroethane	<0.0400	<0.162	0.0400	0.162		EPA-TO-15	05/05/2025	LB
1,1-Dichloroethene (DCE)	<0.0400	<0.159	0.0400	0.159		EPA-TO-15	05/05/2025	LB
1,2,4-Trichlorobenzene	<0.600	<4.45	0.600	4.45		EPA-TO-15	05/05/2025	LB
1,2,4-Trimethylbenzene	<2.00	<9.83	2.00	9.83		EPA-TO-15	05/05/2025	LB
1,2-Dibromoethane (EDB)***	<0.00214	<0.0164	0.00214	0.0164		EPA-TO-15	05/05/2025	LB
1,2-Dichlorobenzene	<0.200	<1.20	0.200	1.20		EPA-TO-15	05/05/2025	LB
1,2-Dichloroethane	<0.0400	<0.162	0.0400	0.162		EPA-TO-15	05/05/2025	LB
1,2-Dichloropropane	<0.200	<0.924	0.200	0.924		EPA-TO-15	05/05/2025	LB
1,3,5-Trimethylbenzene	<0.600	<2.95	0.600	2.95		EPA-TO-15	05/05/2025	LB
1,3-Butadiene	<0.200	<0.442	0.200	0.442		EPA-TO-15	05/05/2025	LB
1,3-Dichlorobenzene	<0.200	<1.20	0.200	1.20		EPA-TO-15	05/05/2025	LB
1,4-Dichlorobenzene	<0.200	<1.20	0.200	1.20		EPA-TO-15	05/05/2025	LB
1,4-Dioxane	<0.600	<2.16	0.600	2.16		EPA-TO-15	05/05/2025	LB
(MEK) 2-Butanone	0.848	2.50	0.600	1.77		EPA-TO-15	05/05/2025	LB
2-Hexanone	<0.600	<2.46	0.600	2.46		EPA-TO-15	05/05/2025	LB
Isopropyl Alcohol	28.7	70.5	2.00	4.92		EPA-TO-15	05/05/2025	LB
4-Methyl-2-pentanone (MIBK)	<0.600	<2.46	0.600	2.46		EPA-TO-15	05/05/2025	LB
Acetone	11.4	27.0	4.00	9.50		EPA-TO-15	05/05/2025	LB
Acrolein***	<0.0136	<0.0312	0.0136	0.0312		EPA-TO-15	05/07/2025	LB
Benzene	0.495	1.58	0.0400	0.128		EPA-TO-15	05/05/2025	LB
Benzyl chloride	<0.600	<3.11	0.600	3.11		EPA-TO-15	05/05/2025	LB
Dichlorobromomethane	<0.200	<1.34	0.200	1.34		EPA-TO-15	05/05/2025	LB
Bromoform	<0.200	<2.07	0.200	2.07		EPA-TO-15	05/05/2025	LB
Bromomethane	<0.200	<0.777	0.200	0.777		EPA-TO-15	05/05/2025	LB
Carbon disulfide	6.86	21.3	2.00	6.23		EPA-TO-15	05/05/2025	LB
Carbon tetrachloride	<0.0400	<0.252	0.0400	0.252		EPA-TO-15	05/05/2025	LB

Alliance TECHNICAL GROUP

Client: **Montrose Environmental**
WorkOrder: 2504716
Project: 5468 Spring Field

Client Sample ID: SV-2
Lab ID: 2504716-001A
Sample Type: Summa Canister
Date Sampled: 4/29/2025
Date Received: 4/30/2025

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds by EPA TO-15								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
Chlorobenzene	<0.0400	<0.184	0.0400	0.184		EPA-TO-15	05/05/2025	LB
Dibromochloromethane	<0.200	<1.70	0.200	1.70		EPA-TO-15	05/05/2025	LB
Chloroethane	<0.600	<1.58	0.600	1.58		EPA-TO-15	05/07/2025	LB
Chloroform	<0.0400	<0.195	0.0400	0.195		EPA-TO-15	05/05/2025	LB
Chloromethane	<0.200	<0.413	0.200	0.413		EPA-TO-15	05/05/2025	LB
cis-1,2-Dichloroethene	<0.200	<0.793	0.200	0.793		EPA-TO-15	05/05/2025	LB
cis-1,3-dichloropropene	<0.200	<0.908	0.200	0.908		EPA-TO-15	05/05/2025	LB
Cyclohexane	<0.600	<2.07	0.600	2.07		EPA-TO-15	05/05/2025	LB
Dichlorodifluoromethane (CFC-12)	<0.200	<0.989	0.200	0.989		EPA-TO-15	05/05/2025	LB
Dichlorotetrafluoroethane (CFC-114)	<0.600	<4.19	0.600	4.19		EPA-TO-15	05/05/2025	LB
Ethyl acetate	<2.00	<7.21	2.00	7.21		EPA-TO-15	05/05/2025	LB
Ethylbenzene	<2.00	<8.68	2.00	8.68		EPA-TO-15	05/05/2025	LB
Gasoline Range Organics	206	841	57.6	236		EPA-TO-15	05/05/2025	LB
Heptane	<0.600	<2.46	0.600	2.46		EPA-TO-15	05/05/2025	LB
Hexachlorobutadiene	<0.200	<2.13	0.200	2.13		EPA-TO-15	05/05/2025	LB
m,p-Xylene	<4.00	<17.4	4.00	17.4		EPA-TO-15	05/05/2025	LB
Methyl methacrylate	<2.00	<8.19	2.00	8.19		EPA-TO-15	05/05/2025	LB
Methylene chloride	<0.600	<2.08	0.600	2.08		EPA-TO-15	05/05/2025	LB
Naphthalene	0.208	1.09	0.0560	0.294		EPA-TO-15	05/07/2025	LB
n-Hexane	<2.00	<7.05	2.00	7.05		EPA-TO-15	05/05/2025	LB
o-Xylene	<2.00	<8.68	2.00	8.68		EPA-TO-15	05/05/2025	LB
4-Ethyltoluene	<0.600	<2.95	0.600	2.95		EPA-TO-15	05/05/2025	LB
Propylene	<0.600	<1.03	0.600	1.03		EPA-TO-15	05/05/2025	LB
Styrene	<0.600	<2.56	0.600	2.56		EPA-TO-15	05/05/2025	LB
Methyl tert-butyl ether (MTBE)	<0.200	<0.721	0.200	0.721		EPA-TO-15	05/05/2025	LB
Tetrachloroethene (PCE)	<2.00	<13.6	2.00	13.6		EPA-TO-15	05/05/2025	LB
Tetrahydrofuran	1.24	3.64	0.600	1.77		EPA-TO-15	05/05/2025	LB
Toluene	5.68	21.4	2.00	7.54		EPA-TO-15	05/05/2025	LB
trans-1,2-Dichloroethene	<0.200	<0.793	0.200	0.793		EPA-TO-15	05/05/2025	LB
trans-1,3-dichloropropene	<0.600	<2.72	0.600	2.72		EPA-TO-15	05/05/2025	LB

Alliance TECHNICAL GROUP

Client: **Montrose Environmental**
WorkOrder: 2504716
Project: 5468 Spring Field

Client Sample ID: SV-2
Lab ID: 2504716-001A
Sample Type: Summa Canister
Date Sampled: 4/29/2025
Date Received: 4/30/2025

Volatile Organic Compounds by EPA TO-15

Analyte	Concentration (ppbv)	Concentration (ug/m^3)	Reporting Limit (ppbv)	Reporting Limit (ug/m^3)	Qual	Method	Date	Analyst
Trichloroethene (TCE)	<0.0400	<0.215	0.0400	0.215		EPA-TO-15	05/05/2025	LB
Trichlorofluoromethane (CFC-11)	0.207	1.16	0.200	1.12		EPA-TO-15	05/07/2025	LB
Vinyl acetate	<0.600	<2.11	0.600	2.11		EPA-TO-15	05/05/2025	LB
Vinyl chloride	<0.200	<0.511	0.200	0.511		EPA-TO-15	05/05/2025	LB
Surr: 4-Bromofluorobenzene	106 %Rec	--	70-130	--		EPA-TO-15	05/05/2025	LB

Alliance TECHNICAL GROUP

Client: **Montrose Environmental**
WorkOrder: 2504716
Project: 5468 Spring Field

Client Sample ID: DUP-1 **Date Sampled:** 4/29/2025
Lab ID: 2504716-002A **Date Received:** 4/30/2025
Sample Type: Summa Canister

Volatile Organic Compounds by EPA TO-15

Analyte	Concentration (ppbv)	Concentration (ug/m^3)	Reporting Limit (ppbv)	Reporting Limit (ug/m^3)	Qual	Method	Date/Analyst	
1,1,1-Trichloroethane	<0.0400	<0.218	0.0400	0.218		EPA-TO-15	05/05/2025	LB
1,1,2,2-Tetrachloroethane	<0.200	<1.37	0.200	1.37		EPA-TO-15	05/05/2025	LB
CFC-113	<0.600	<4.60	0.600	4.60		EPA-TO-15	05/05/2025	LB
1,1,2-Trichloroethane (TCA)	<0.0400	<0.218	0.0400	0.218		EPA-TO-15	05/05/2025	LB
1,1-Dichloroethane	<0.0400	<0.162	0.0400	0.162		EPA-TO-15	05/05/2025	LB
1,1-Dichloroethene (DCE)	<0.0400	<0.159	0.0400	0.159		EPA-TO-15	05/05/2025	LB
1,2,4-Trichlorobenzene	<0.600	<4.45	0.600	4.45		EPA-TO-15	05/05/2025	LB
1,2,4-Trimethylbenzene	<2.00	<9.83	2.00	9.83		EPA-TO-15	05/05/2025	LB
1,2-Dibromoethane (EDB)***	<0.00214	<0.0164	0.00214	0.0164		EPA-TO-15	05/05/2025	LB
1,2-Dichlorobenzene	<0.200	<1.20	0.200	1.20		EPA-TO-15	05/05/2025	LB
1,2-Dichloroethane	<0.0400	<0.162	0.0400	0.162		EPA-TO-15	05/05/2025	LB
1,2-Dichloropropane	<0.200	<0.924	0.200	0.924		EPA-TO-15	05/05/2025	LB
1,3,5-Trimethylbenzene	<0.600	<2.95	0.600	2.95		EPA-TO-15	05/05/2025	LB
1,3-Butadiene	<0.200	<0.442	0.200	0.442		EPA-TO-15	05/05/2025	LB
1,3-Dichlorobenzene	<0.200	<1.20	0.200	1.20		EPA-TO-15	05/05/2025	LB
1,4-Dichlorobenzene	<0.200	<1.20	0.200	1.20		EPA-TO-15	05/05/2025	LB
1,4-Dioxane	<0.600	<2.16	0.600	2.16		EPA-TO-15	05/05/2025	LB
(MEK) 2-Butanone	<0.600	<1.77	0.600	1.77		EPA-TO-15	05/05/2025	LB
2-Hexanone	<0.600	<2.46	0.600	2.46		EPA-TO-15	05/05/2025	LB
Isopropyl Alcohol	15.9	39.1	2.00	4.92		EPA-TO-15	05/05/2025	LB
4-Methyl-2-pentanone (MIBK)	<0.600	<2.46	0.600	2.46		EPA-TO-15	05/05/2025	LB
Acetone	<4.00	<9.50	4.00	9.50		EPA-TO-15	05/05/2025	LB
Acrolein***	<0.0136	<0.0312	0.0136	0.0312		EPA-TO-15	05/07/2025	LB
Benzene	0.214	0.683	0.0400	0.128		EPA-TO-15	05/05/2025	LB
Benzyl chloride	<0.600	<3.11	0.600	3.11		EPA-TO-15	05/05/2025	LB
Dichlorobromomethane	<0.200	<1.34	0.200	1.34		EPA-TO-15	05/05/2025	LB
Bromoform	<0.200	<2.07	0.200	2.07		EPA-TO-15	05/05/2025	LB
Bromomethane	<0.200	<0.777	0.200	0.777		EPA-TO-15	05/05/2025	LB
Carbon disulfide	2.69	8.37	2.00	6.23		EPA-TO-15	05/05/2025	LB
Carbon tetrachloride	<0.0400	<0.252	0.0400	0.252		EPA-TO-15	05/05/2025	LB

Client: **Montrose Environmental**
WorkOrder: 2504716
Project: 5468 Spring Field

Client Sample ID: DUP-1 **Date Sampled:** 4/29/2025
Lab ID: 2504716-002A **Date Received:** 4/30/2025
Sample Type: Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds by EPA TO-15								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
Chlorobenzene	<0.0400	<0.184	0.0400	0.184		EPA-TO-15	05/05/2025	LB
Dibromochloromethane	<0.200	<1.70	0.200	1.70		EPA-TO-15	05/05/2025	LB
Chloroethane	<0.600	<1.58	0.600	1.58		EPA-TO-15	05/07/2025	LB
Chloroform	<0.0400	<0.195	0.0400	0.195		EPA-TO-15	05/05/2025	LB
Chloromethane	<0.200	<0.413	0.200	0.413		EPA-TO-15	05/05/2025	LB
cis-1,2-Dichloroethene	<0.200	<0.793	0.200	0.793		EPA-TO-15	05/05/2025	LB
cis-1,3-dichloropropene	<0.200	<0.908	0.200	0.908		EPA-TO-15	05/05/2025	LB
Cyclohexane	<0.600	<2.07	0.600	2.07		EPA-TO-15	05/05/2025	LB
Dichlorodifluoromethane (CFC-12)	<0.200	<0.989	0.200	0.989		EPA-TO-15	05/05/2025	LB
Dichlorotetrafluoroethane (CFC-114)	<0.600	<4.19	0.600	4.19		EPA-TO-15	05/05/2025	LB
Ethyl acetate	<2.00	<7.21	2.00	7.21		EPA-TO-15	05/05/2025	LB
Ethylbenzene	<2.00	<8.68	2.00	8.68		EPA-TO-15	05/05/2025	LB
Gasoline Range Organics	72.3	296	57.6	236		EPA-TO-15	05/05/2025	LB
Heptane	<0.600	<2.46	0.600	2.46		EPA-TO-15	05/05/2025	LB
Hexachlorobutadiene	<0.200	<2.13	0.200	2.13		EPA-TO-15	05/05/2025	LB
m,p-Xylene	<4.00	<17.4	4.00	17.4		EPA-TO-15	05/05/2025	LB
Methyl methacrylate	<2.00	<8.19	2.00	8.19		EPA-TO-15	05/05/2025	LB
Methylene chloride	<0.600	<2.08	0.600	2.08		EPA-TO-15	05/05/2025	LB
Naphthalene	0.205	1.07	0.0560	0.294		EPA-TO-15	05/07/2025	LB
n-Hexane	<2.00	<7.05	2.00	7.05		EPA-TO-15	05/05/2025	LB
o-Xylene	<2.00	<8.68	2.00	8.68		EPA-TO-15	05/05/2025	LB
4-Ethyltoluene	<0.600	<2.95	0.600	2.95		EPA-TO-15	05/05/2025	LB
Propylene	<0.600	<1.03	0.600	1.03		EPA-TO-15	05/05/2025	LB
Styrene	<0.600	<2.56	0.600	2.56		EPA-TO-15	05/05/2025	LB
Methyl tert-butyl ether (MTBE)	<0.200	<0.721	0.200	0.721		EPA-TO-15	05/05/2025	LB
Tetrachloroethene (PCE)	<2.00	<13.6	2.00	13.6		EPA-TO-15	05/05/2025	LB
Tetrahydrofuran	<0.600	<1.77	0.600	1.77		EPA-TO-15	05/05/2025	LB
Toluene	<2.00	<7.54	2.00	7.54		EPA-TO-15	05/05/2025	LB
trans-1,2-Dichloroethene	<0.200	<0.793	0.200	0.793		EPA-TO-15	05/05/2025	LB
trans-1,3-dichloropropene	<0.600	<2.72	0.600	2.72		EPA-TO-15	05/05/2025	LB

Client: **Montrose Environmental**
WorkOrder: 2504716
Project: 5468 Spring Field

Client Sample ID: DUP-1
Lab ID: 2504716-002A
Sample Type: Summa Canister

Date Sampled: 4/29/2025
Date Received: 4/30/2025

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds by EPA TO-15								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
Trichloroethene (TCE)	<0.0400	<0.215	0.0400	0.215		EPA-TO-15	05/05/2025	LB
Trichlorofluoromethane (CFC-11)	<0.200	<1.12	0.200	1.12		EPA-TO-15	05/07/2025	LB
Vinyl acetate	<0.600	<2.11	0.600	2.11		EPA-TO-15	05/05/2025	LB
Vinyl chloride	<0.200	<0.511	0.200	0.511		EPA-TO-15	05/05/2025	LB
Surr: 4-Bromofluorobenzene	107 %Rec	--	70-130	--		EPA-TO-15	05/05/2025	LB

Client: **Montrose Environmental**
WorkOrder: 2504716
Project: 5468 Spring Field

Client Sample ID: SV-1 **Date Sampled:** 4/29/2025
Lab ID: 2504716-003A **Date Received:** 4/30/2025
Sample Type: Summa Canister

Volatile Organic Compounds by EPA TO-15

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1,1-Trichloroethane	<0.0400	<0.218	0.0400	0.218		EPA-TO-15	05/05/2025	LB
1,1,2,2-Tetrachloroethane	<0.200	<1.37	0.200	1.37		EPA-TO-15	05/05/2025	LB
CFC-113	<0.600	<4.60	0.600	4.60		EPA-TO-15	05/05/2025	LB
1,1,2-Trichloroethane (TCA)	<0.0400	<0.218	0.0400	0.218		EPA-TO-15	05/05/2025	LB
1,1-Dichloroethane	<0.0400	<0.162	0.0400	0.162		EPA-TO-15	05/05/2025	LB
1,1-Dichloroethene (DCE)	<0.0400	<0.159	0.0400	0.159		EPA-TO-15	05/05/2025	LB
1,2,4-Trichlorobenzene	<0.600	<4.45	0.600	4.45		EPA-TO-15	05/05/2025	LB
1,2,4-Trimethylbenzene	<2.00	<9.83	2.00	9.83		EPA-TO-15	05/05/2025	LB
1,2-Dibromoethane (EDB)***	<0.00214	<0.0164	0.00214	0.0164		EPA-TO-15	05/05/2025	LB
1,2-Dichlorobenzene	<0.200	<1.20	0.200	1.20		EPA-TO-15	05/05/2025	LB
1,2-Dichloroethane	<0.0400	<0.162	0.0400	0.162		EPA-TO-15	05/05/2025	LB
1,2-Dichloropropane	<0.200	<0.924	0.200	0.924		EPA-TO-15	05/05/2025	LB
1,3,5-Trimethylbenzene	<0.600	<2.95	0.600	2.95		EPA-TO-15	05/05/2025	LB
1,3-Butadiene	<0.200	<0.442	0.200	0.442		EPA-TO-15	05/05/2025	LB
1,3-Dichlorobenzene	<0.200	<1.20	0.200	1.20		EPA-TO-15	05/05/2025	LB
1,4-Dichlorobenzene	<0.200	<1.20	0.200	1.20		EPA-TO-15	05/05/2025	LB
1,4-Dioxane	<0.600	<2.16	0.600	2.16		EPA-TO-15	05/05/2025	LB
(MEK) 2-Butanone	<0.600	<1.77	0.600	1.77		EPA-TO-15	05/05/2025	LB
2-Hexanone	<0.600	<2.46	0.600	2.46		EPA-TO-15	05/05/2025	LB
Isopropyl Alcohol	6.47	15.9	2.00	4.92		EPA-TO-15	05/05/2025	LB
4-Methyl-2-pentanone (MIBK)	<0.600	<2.46	0.600	2.46		EPA-TO-15	05/05/2025	LB
Acetone	5.99	14.2	4.00	9.50		EPA-TO-15	05/05/2025	LB
Acrolein***	<0.0136	<0.0312	0.0136	0.0312		EPA-TO-15	05/07/2025	LB
Benzene	0.293	0.936	0.0400	0.128		EPA-TO-15	05/05/2025	LB
Benzyl chloride	<0.600	<3.11	0.600	3.11		EPA-TO-15	05/05/2025	LB
Dichlorobromomethane	<0.200	<1.34	0.200	1.34		EPA-TO-15	05/05/2025	LB
Bromoform	<0.200	<2.07	0.200	2.07		EPA-TO-15	05/05/2025	LB
Bromomethane	<0.200	<0.777	0.200	0.777		EPA-TO-15	05/05/2025	LB
Carbon disulfide	3.85	12.0	2.00	6.23		EPA-TO-15	05/05/2025	LB
Carbon tetrachloride	<0.0400	<0.252	0.0400	0.252		EPA-TO-15	05/05/2025	LB

Client: **Montrose Environmental**
WorkOrder: 2504716
Project: 5468 Spring Field

Client Sample ID: SV-1
Lab ID: 2504716-003A
Sample Type: Summa Canister

Date Sampled: 4/29/2025
Date Received: 4/30/2025

Volatile Organic Compounds by EPA TO-15

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
Chlorobenzene	<0.0400	<0.184	0.0400	0.184		EPA-TO-15	05/05/2025	LB
Dibromochloromethane	<0.200	<1.70	0.200	1.70		EPA-TO-15	05/05/2025	LB
Chloroethane	<0.600	<1.58	0.600	1.58		EPA-TO-15	05/07/2025	LB
Chloroform	<0.0400	<0.195	0.0400	0.195		EPA-TO-15	05/05/2025	LB
Chloromethane	<0.200	<0.413	0.200	0.413		EPA-TO-15	05/05/2025	LB
cis-1,2-Dichloroethene	<0.200	<0.793	0.200	0.793		EPA-TO-15	05/05/2025	LB
cis-1,3-dichloropropene	<0.200	<0.908	0.200	0.908		EPA-TO-15	05/05/2025	LB
Cyclohexane	<0.600	<2.07	0.600	2.07		EPA-TO-15	05/05/2025	LB
Dichlorodifluoromethane (CFC-12)	<0.200	<0.989	0.200	0.989		EPA-TO-15	05/05/2025	LB
Dichlorotetrafluoroethane (CFC-114)	<0.600	<4.19	0.600	4.19		EPA-TO-15	05/05/2025	LB
Ethyl acetate	<2.00	<7.21	2.00	7.21		EPA-TO-15	05/05/2025	LB
Ethylbenzene	<2.00	<8.68	2.00	8.68		EPA-TO-15	05/05/2025	LB
Gasoline Range Organics	79.7	326	57.6	236		EPA-TO-15	05/05/2025	LB
Heptane	<0.600	<2.46	0.600	2.46		EPA-TO-15	05/05/2025	LB
Hexachlorobutadiene	<0.200	<2.13	0.200	2.13		EPA-TO-15	05/05/2025	LB
m,p-Xylene	<4.00	<17.4	4.00	17.4		EPA-TO-15	05/05/2025	LB
Methyl methacrylate	<2.00	<8.19	2.00	8.19		EPA-TO-15	05/05/2025	LB
Methylene chloride	<0.600	<2.08	0.600	2.08		EPA-TO-15	05/05/2025	LB
Naphthalene	0.208	1.09	0.0560	0.294		EPA-TO-15	05/07/2025	LB
n-Hexane	<2.00	<7.05	2.00	7.05		EPA-TO-15	05/05/2025	LB
o-Xylene	<2.00	<8.68	2.00	8.68		EPA-TO-15	05/05/2025	LB
4-Ethyltoluene	<0.600	<2.95	0.600	2.95		EPA-TO-15	05/05/2025	LB
Propylene	<0.600	<1.03	0.600	1.03		EPA-TO-15	05/05/2025	LB
Styrene	<0.600	<2.56	0.600	2.56		EPA-TO-15	05/05/2025	LB
Methyl tert-butyl ether (MTBE)	<0.200	<0.721	0.200	0.721		EPA-TO-15	05/05/2025	LB
Tetrachloroethene (PCE)	<2.00	<13.6	2.00	13.6		EPA-TO-15	05/05/2025	LB
Tetrahydrofuran	<0.600	<1.77	0.600	1.77		EPA-TO-15	05/05/2025	LB
Toluene	2.39	9.02	2.00	7.54		EPA-TO-15	05/05/2025	LB
trans-1,2-Dichloroethene	<0.200	<0.793	0.200	0.793		EPA-TO-15	05/05/2025	LB
trans-1,3-dichloropropene	<0.600	<2.72	0.600	2.72		EPA-TO-15	05/05/2025	LB

Client: **Montrose Environmental**
WorkOrder: 2504716
Project: 5468 Spring Field

Client Sample ID: SV-1 **Date Sampled:** 4/29/2025
Lab ID: 2504716-003A **Date Received:** 4/30/2025
Sample Type: Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds by EPA TO-15								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
Trichloroethene (TCE)	<0.0400	<0.215	0.0400	0.215		EPA-TO-15	05/05/2025	LB
Trichlorofluoromethane (CFC-11)	<0.200	<1.12	0.200	1.12		EPA-TO-15	05/07/2025	LB
Vinyl acetate	<0.600	<2.11	0.600	2.11		EPA-TO-15	05/05/2025	LB
Vinyl chloride	<0.200	<0.511	0.200	0.511		EPA-TO-15	05/05/2025	LB
Surr: 4-Bromofluorobenzene	108 %Rec	--	70-130	--		EPA-TO-15	05/05/2025	LB

Work Order: 2504716
CLIENT: Montrose Environmental
Project: 5468 Spring Field

QC SUMMARY REPORT

Helium by GC/TCD

Sample ID: **LCS-R99555**	SampType: **LCS**	Units: **%**	Prep Date: **5/7/2025**	RunNo: **99555**
Client ID: **LCSW**	Batch ID: **R99555**		Analysis Date: **5/7/2025**	SeqNo: **2073615**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Helium	5.46	0.200	5.000	0	109	80	120				

Sample ID: **MB-R99555**	SampType: **MBLK**	Units: **%**	Prep Date: **5/7/2025**	RunNo: **99555**
Client ID: **MBLKW**	Batch ID: **R99555**		Analysis Date: **5/7/2025**	SeqNo: **2073616**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Helium	ND	0.200									

Sample ID: **2504716-001AREP**	SampType: **REP**	Units: **%**	Prep Date: **5/7/2025**	RunNo: **99555**
Client ID: **SV-2**	Batch ID: **R99555**		Analysis Date: **5/7/2025**	SeqNo: **2073612**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Helium	ND	0.400						0		30	D

Work Order: 2504716
CLIENT: Montrose Environmental
Project: 5468 Spring Field

QC SUMMARY REPORT

Major Gases by EPA Method 3C

Sample ID: **LCS-R99560** SampType: **LCS** Units: **%** Prep Date: **5/7/2025** RunNo: **99560**
Client ID: **LCSW** Batch ID: **R99560** Analysis Date: **5/7/2025** SeqNo: **2073734**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon Dioxide	102	0.0500	100.0	0	102	90	110				
Carbon Monoxide	101	0.0500	100.0	0	101	90	110				
Methane	102	0.0500	100.0	0	102	90	110				
Nitrogen	101	0.0500	100.0	0	101	90	110				
Oxygen	101	0.0500	100.0	0	101	90	110				
Hydrogen	101	0.0500	100.0	0	101	90	110				

Sample ID: **2504716-001AREP** SampType: **REP** Units: **%** Prep Date: **5/7/2025** RunNo: **99560**
Client ID: **SV-2** Batch ID: **R99560** Analysis Date: **5/7/2025** SeqNo: **2073732**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon Dioxide	1.40	0.100						1.350	3.68	30	D
Carbon Monoxide	ND	0.100						0		30	D
Methane	ND	0.100						0		30	D
Nitrogen	77.2	0.100						177.3	0.0259	30	D
Oxygen	21.4	0.100						21.36	0.0225	30	D
Hydrogen	ND	0.100						0		30	D
BTU	ND							0	0	30	D

Date: *5/28/2025*

Work Order: 2504716
CLIENT: Montrose Environmental
Project: 5468 Spring Field

QC SUMMARY REPORT

Volatile Organic Compounds by EPA TO-15

Sample ID: **LCS-R99509** SampType: **LCS** Units: **ppbv** Prep Date: **5/5/2025** RunNo: **99509**
Client ID: **LCSW** Batch ID: **R99509** Analysis Date: **5/5/2025** SeqNo: **2073000**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	78.7	14.4	72.00	0	109	70	130				
Propylene	1.54	0.150	2.000	0	76.9	70	130				
Dichlorodifluoromethane (CFC-12)	1.82	0.0500	2.000	0	91.2	70	130				
Chloromethane	1.61	0.0500	2.000	0	80.3	70	130				
Dichlorotetrafluoroethane (CFC-114)	1.76	0.150	2.000	0	88.1	70	130				
Vinyl chloride	1.88	0.0500	2.000	0	94.0	70	130				
1,3-Butadiene	1.78	0.0500	2.000	0	88.9	70	130				
Bromomethane	2.18	0.0500	2.000	0	109	70	130				
1,1-Dichloroethene (DCE)	2.19	0.0100	2.000	0	109	70	130				
Acetone	2.14	1.00	2.000	0	107	70	130				
Isopropyl Alcohol	2.57	0.500	2.000	0	129	70	130				
Methylene chloride	2.14	0.150	2.000	0	107	70	130				
Carbon disulfide	2.05	0.500	2.000	0	103	70	130				
trans-1,2-Dichloroethene	1.99	0.0500	2.000	0	99.5	70	130				
Methyl tert-butyl ether (MTBE)	2.16	0.0500	2.000	0	108	70	130				
n-Hexane	2.13	0.500	2.000	0	107	70	130				
1,1-Dichloroethane	1.68	0.0100	2.000	0	83.9	70	130				
Vinyl acetate	1.76	0.150	2.000	0	88.1	70	130				
cis-1,2-Dichloroethene	2.01	0.0500	2.000	0	101	70	130				
(MEK) 2-Butanone	2.20	0.150	2.000	0	110	70	130				
Ethyl acetate	2.50	0.500	2.000	0	125	70	130				
Chloroform	1.92	0.0100	2.000	0	96.1	70	130				
Tetrahydrofuran	2.14	0.150	2.000	0	107	70	130				
1,1,1-Trichloroethane	2.25	0.0100	2.000	0	113	70	130				
Carbon tetrachloride	2.36	0.0100	2.000	0	118	70	130				
1,2-Dichloroethane	1.91	0.0100	2.000	0	95.6	70	130				
Benzene	2.30	0.0100	2.000	0	115	70	130				
Cyclohexane	1.84	0.150	2.000	0	92.0	70	130				
Trichloroethene (TCE)	2.05	0.0100	2.000	0	102	70	130				
1,2-Dichloropropane	1.67	0.0500	2.000	0	83.4	70	130				
Methyl methacrylate	2.19	0.500	2.000	0	109	70	130				
Dichlorobromomethane	1.88	0.0500	2.000	0	94.1	70	130				

Alliance TECHNICAL GROUP

Date: *5/28/2025*

Work Order: 2504716
CLIENT: Montrose Environmental
Project: 5468 Spring Field

QC SUMMARY REPORT

Volatile Organic Compounds by EPA TO-15

Sample ID: **LCS-R99509** SampType: **LCS** Units: **ppbv** Prep Date: **5/5/2025** RunNo: **99509**

Client ID: **LCSW** Batch ID: **R99509** Analysis Date: **5/5/2025** SeqNo: **2073000**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dioxane	1.90	0.150	2.000	0	95.0	70	130				
cis-1,3-dichloropropene	2.08	0.0500	2.000	0	104	70	130				
Toluene	1.95	0.500	2.000	0	97.3	70	130				
trans-1,3-dichloropropene	2.04	0.150	2.000	0	102	70	130				
1,1,2-Trichloroethane (TCA)	1.83	0.0100	2.000	0	91.5	70	130				
Tetrachloroethene (PCE)	2.04	0.500	2.000	0	102	70	130				
Dibromochloromethane	2.16	0.0500	2.000	0	108	70	130				
1,2-Dibromoethane (EDB)***	1.97	0.000534	2.000	0	98.3	70	130				
Chlorobenzene	1.97	0.0100	2.000	0	98.6	70	130				
Ethylbenzene	1.92	0.500	2.000	0	96.2	70	130				
m,p-Xylene	3.77	1.00	4.000	0	94.3	70	130				
o-Xylene	1.98	0.500	2.000	0	98.9	70	130				
Styrene	2.12	0.150	2.000	0	106	70	130				
Bromoform	2.37	0.0500	2.000	0	119	70	130				
1,1,2,2-Tetrachloroethane	1.73	0.0500	2.000	0	86.7	70	130				
1,3,5-Trimethylbenzene	1.62	0.150	2.000	0	81.0	70	130				
1,2,4-Trimethylbenzene	1.80	0.500	2.000	0	89.8	70	130				
Benzyl chloride	1.88	0.150	2.000	0	94.1	70	130				
4-Ethyltoluene	1.67	0.150	2.000	0	83.4	70	130				
1,3-Dichlorobenzene	1.66	0.0500	2.000	0	83.2	70	130				
1,4-Dichlorobenzene	1.66	0.0500	2.000	0	83.0	70	130				
1,2-Dichlorobenzene	1.64	0.0500	2.000	0	82.0	70	130				
1,2,4-Trichlorobenzene	1.51	0.150	2.000	0	75.5	70	130				
Hexachlorobutadiene	1.86	0.0500	2.000	0	93.0	70	130				
2-Hexanone	1.99	0.150	2.000	0	99.7	70	130				
4-Methyl-2-pentanone (MIBK)	2.08	0.150	2.000	0	104	70	130				
CFC-113	1.63	0.150	2.000	0	81.6	70	130				
Heptane	1.82	0.150	2.000	0	90.8	70	130				
Surr: 4-Bromofluorobenzene	5.44		5.000		109	70	130				

Alliance TECHNICAL GROUP

Work Order: 2504716
CLIENT: Montrose Environmental
Project: 5468 Spring Field

QC SUMMARY REPORT

Volatile Organic Compounds by EPA TO-15

Sample ID: **MB-R99509**	SampType: **MBLK**	Units: **ppbv**	Prep Date: **5/5/2025**	RunNo: **99509**
Client ID: **MBLKW**	Batch ID: **R99509**		Analysis Date: **5/5/2025**	SeqNo: **2073001**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	14.4									
Propylene	ND	0.150									
Dichlorodifluoromethane (CFC-12)	ND	0.0500									
Chloromethane	ND	0.0500									
Dichlorotetrafluoroethane (CFC-114)	ND	0.150									
Vinyl chloride	ND	0.0500									
1,3-Butadiene	ND	0.0500									
Bromomethane	ND	0.0500									
1,1-Dichloroethene (DCE)	ND	0.0100									
Acetone	ND	1.00									
Isopropyl Alcohol	ND	0.500									
Methylene chloride	ND	0.150									
Carbon disulfide	ND	0.500									
trans-1,2-Dichloroethene	ND	0.0500									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
n-Hexane	ND	0.500									
1,1-Dichloroethane	ND	0.0100									
Vinyl acetate	ND	0.150									
cis-1,2-Dichloroethene	ND	0.0500									
(MEK) 2-Butanone	ND	0.150									
Ethyl acetate	ND	0.500									
Chloroform	ND	0.0100									
Tetrahydrofuran	ND	0.150									
1,1,1-Trichloroethane	ND	0.0100									
Carbon tetrachloride	ND	0.0100									
1,2-Dichloroethane	ND	0.0100									
Benzene	ND	0.0100									
Cyclohexane	ND	0.150									
Trichloroethene (TCE)	ND	0.0100									
1,2-Dichloropropane	ND	0.0500									
Methyl methacrylate	ND	0.500									
Dichlorobromomethane	ND	0.0500									

Work Order: 2504716
CLIENT: Montrose Environmental
Project: 5468 Spring Field

QC SUMMARY REPORT

Volatile Organic Compounds by EPA TO-15

Sample ID: **MB-R99509** SampType: **MBLK** Units: **ppbv** Prep Date: **5/5/2025** RunNo: **99509**
Client ID: **MBLKW** Batch ID: **R99509** Analysis Date: **5/5/2025** SeqNo: **2073001**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	0.150									
cis-1,3-dichloropropene	ND	0.0500									
Toluene	ND	0.500									
trans-1,3-dichloropropene	ND	0.150									
1,1,2-Trichloroethane (TCA)	ND	0.0100									
Tetrachloroethene (PCE)	ND	0.500									
Dibromochloromethane	ND	0.0500									
1,2-Dibromoethane (EDB)***	ND	0.000534									
Chlorobenzene	ND	0.0100									
Ethylbenzene	ND	0.500									
m,p-Xylene	ND	1.00									
o-Xylene	ND	0.500									
Styrene	ND	0.150									
Bromoform	ND	0.0500									
1,1,2,2-Tetrachloroethane	ND	0.0500									
1,3,5-Trimethylbenzene	ND	0.150									
1,2,4-Trimethylbenzene	ND	0.500									
Benzyl chloride	ND	0.150									
4-Ethyltoluene	ND	0.150									
1,3-Dichlorobenzene	ND	0.0500									
1,4-Dichlorobenzene	ND	0.0500									
1,2-Dichlorobenzene	ND	0.0500									
1,2,4-Trichlorobenzene	ND	0.150									
Hexachlorobutadiene	ND	0.0500									
2-Hexanone	ND	0.150									
4-Methyl-2-pentanone (MIBK)	ND	0.150									
CFC-113	ND	0.150									
Heptane	ND	0.150									
Surr: 4-Bromofluorobenzene	5.39		5.000		108	70	130				

Alliance TECHNICAL GROUP

Work Order: 2504716
CLIENT: Montrose Environmental
Project: 5468 Spring Field

QC SUMMARY REPORT

Volatile Organic Compounds by EPA TO-15

Sample ID: **2504716-001AREP** SampType: **REP** Units: **ppbv** Prep Date: **5/5/2025** RunNo: **99509**
Client ID: **SV-2** Batch ID: **R99509** Analysis Date: **5/5/2025** SeqNo: **2073003**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	203	57.6						205.6	1.48	25	
Propylene	ND	0.600						0		25	
Dichlorodifluoromethane (CFC-12)	ND	0.200						0		25	
Chloromethane	ND	0.200						0		25	
Dichlorotetrafluoroethane (CFC-114)	ND	0.600						0		25	
Vinyl chloride	ND	0.200						0		25	
1,3-Butadiene	ND	0.200						0		25	
Bromomethane	ND	0.200						0		25	
1,1-Dichloroethene (DCE)	ND	0.0400						0		25	
Acetone	11.1	4.00						11.36	2.06	25	
Isopropyl Alcohol	26.8	2.00						28.69	6.74	25	
Methylene chloride	ND	0.600						0		25	
Carbon disulfide	6.76	2.00						6.856	1.47	25	
trans-1,2-Dichloroethene	ND	0.200						0		25	
Methyl tert-butyl ether (MTBE)	ND	0.200						0		25	
n-Hexane	ND	2.00						0		25	
1,1-Dichloroethane	ND	0.0400						0		25	
Vinyl acetate	ND	0.600						0		25	
cis-1,2-Dichloroethene	ND	0.200						0		25	
(MEK) 2-Butanone	0.813	0.600						0.8475	4.17	25	
Ethyl acetate	ND	2.00						0		25	
Chloroform	ND	0.0400						0		25	
Tetrahydrofuran	1.23	0.600						1.236	0.542	25	
1,1,1-Trichloroethane	ND	0.0400						0		25	
Carbon tetrachloride	ND	0.0400						0		25	
1,2-Dichloroethane	ND	0.0400						0		25	
Benzene	0.509	0.0400						0.4952	2.71	25	
Cyclohexane	ND	0.600						0		25	
Trichloroethene (TCE)	ND	0.0400						0		25	
1,2-Dichloropropane	ND	0.200						0		25	
Methyl methacrylate	ND	2.00						0		25	
Dichlorobromomethane	ND	0.200						0		25	

Date: *5/28/2025*

Alliance TECHNICAL GROUP

Work Order: 2504716
CLIENT: Montrose Environmental
Project: 5468 Spring Field

QC SUMMARY REPORT

Volatile Organic Compounds by EPA TO-15

Sample ID: **2504716-001AREP** SampType: **REP** Units: **ppbv** Prep Date: **5/5/2025** RunNo: **99509**
Client ID: **SV-2** Batch ID: **R99509** Analysis Date: **5/5/2025** SeqNo: **2073003**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	0.600						0		25	
cis-1,3-dichloropropene	ND	0.200						0		25	
Toluene	5.65	2.00						5.677	0.485	25	
trans-1,3-dichloropropene	ND	0.600						0		25	
1,1,2-Trichloroethane (TCA)	ND	0.0400						0		25	
Tetrachloroethene (PCE)	ND	2.00						0		25	
Dibromochloromethane	ND	0.200						0		25	
1,2-Dibromoethane (EDB)***	ND	0.00214						0		25	
Chlorobenzene	ND	0.0400						0		25	
Ethylbenzene	ND	2.00						0		25	
m,p-Xylene	ND	4.00						0		25	
o-Xylene	ND	2.00						0		25	
Styrene	ND	0.600						0		25	
Bromoform	ND	0.200						0		25	
1,1,2,2-Tetrachloroethane	ND	0.200						0		25	
1,3,5-Trimethylbenzene	ND	0.600						0		25	
1,2,4-Trimethylbenzene	ND	2.00						0		25	
Benzyl chloride	ND	0.600						0		25	
4-Ethyltoluene	ND	0.600						0		25	
1,3-Dichlorobenzene	ND	0.200						0		25	
1,4-Dichlorobenzene	ND	0.200						0		25	
1,2-Dichlorobenzene	ND	0.200						0		25	
1,2,4-Trichlorobenzene	ND	0.600						0		25	
Hexachlorobutadiene	ND	0.200						0		25	
2-Hexanone	ND	0.600						0		25	
4-Methyl-2-pentanone (MIBK)	ND	0.600						0		25	
CFC-113	ND	0.600						0		25	
Heptane	0.608	0.600						0.5930	2.46	25	
Surr: 4-Bromofluorobenzene	21.0		20.00		105	70	130		0		

ALLIANCE TECHNICAL GROUP

Work Order: 2504716
CLIENT: Montrose Environmental
Project: 5468 Spring Field

QC SUMMARY REPORT

Volatile Organic Compounds by EPA TO-15

Sample ID: **LCS-R99552** SampType: **LCS** Units: **ppbv** Prep Date: **5/6/2025** RunNo: **99552**
Client ID: **LCSW** Batch ID: **R99552** Analysis Date: **5/6/2025** SeqNo: **2073832**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichlorofluoromethane (CFC-11)	1.77	0.0500	2.000	0	88.5	70	130				
Chloroethane	2.30	0.150	2.000	0	115	70	130				
Acrolein***	2.04	0.00340	2.000	0	102	70	130				
Naphthalene	1.93	0.0140	2.000	0	96.5	70	130				
Surr: 4-Bromofluorobenzene	4.92		5.000		98.3	70	130				

Sample ID: **MB-R99552** SampType: **MBLK** Units: **ppbv** Prep Date: **5/7/2025** RunNo: **99552**
Client ID: **MBLKW** Batch ID: **R99552** Analysis Date: **5/7/2025** SeqNo: **2073833**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.150									
Acrolein***	0.00548	0.00340									
Naphthalene	ND	0.0140									
Surr: 4-Bromofluorobenzene	4.87		5.000		97.4	70	130				

Sample ID: **2504716-003AREP** SampType: **REP** Units: **ppbv** Prep Date: **5/7/2025** RunNo: **99552**
Client ID: **SV-1** Batch ID: **R99552** Analysis Date: **5/7/2025** SeqNo: **2073837**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichlorofluoromethane (CFC-11)	ND	0.200						0		25	
Chloroethane	ND	0.600						0		25	
Acrolein***	ND	0.0136						0		25	
Naphthalene	0.203	0.0560						0.2080	2.47	25	
Surr: 4-Bromofluorobenzene	19.8		20.00		99.0	70	130		0		

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Sample Log-In Check List

Client Name:	MONTRO	Work Order Number:	2504716
Logged by:	Clare Griggs	Date Received:	4/30/2025 12:52:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☐	No ☐	NA ☑
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical

An Alliance Technical Group Company

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790

Air Chain of Custody Record & Laboratory Services Agreement

Laboratory Project No (internal): 2504716

Date: 4/29/25 **Page:** 1 **of:** 1

Special Remarks:

Client: Montrose/Blaine Tech

Address: 1631 E. Saint Andrew Pl.

City, State, Zip: Santa Ana

Telephone: (714) 743-7855 / (714) 919-6533

Fax:

Project Name: 5468 Springfield

Project No: PROJ-027409 / 5468, Springfield

Location: 5720 Main St, Springfield, OR

Collected by: Diana Ojeda

Reports to (PM): Laura Skow

Email (PM): lskow@montrose-env.com

Disposal: Samples will be disposed of one week after report is submitted unless otherwise requested. ☐ Retain volume (specify above) ☐ Return to client

	Sample Name	Canister / Flow Reg Serial #	Sample Type (Matrix) *	Container Type **	Expected Fill Time / Flow Rate	Sample Start Date & Time	Field Initial Sample Pressure ("Hg)	Sample End Date & Time	Field Final Sample Pressure ("Hg)	Full list VOCs TO15	Select VOCs TO15 ***	APH TO15	Siloxanes TO15	Sulfur TO15	Major Gases 3C	Helium 3C Mod	VOCs 8260	GX/BTEX 8260	GRO	Comments
1	SV-2	~~4480~~ 46866 / FC-5	SV	1.4L	~~3300~~	4/29/25 1501	33	4/29 1508	9	X					X	X			X	
2	DUP-1	11412 / FC-24	SV	1.4L		4/29 1533	40	4/29 1609	14	X					X	X			X	
3	SV-1	11408 / FC-24	SV	1.4L		4/29 1533	31	4/29 1547	8	X					X	X			X	
4																				
5																				

* Matrix Codes: AA = Ambient Air OA = Outdoor Air IA = Indoor Air S = Subslab / Soil Gas SVE = SVE RNG = Biogas / Landfill / Digester

** Container Codes: BV = 1 Liter Bottle Vac 6L = 6L Canister 1L = 1L Canister CYL = High Pressure Cylinder F = Filter S = Sorbent Tube TB = Tedlar Bag

*** Select one: ☐ BTEXN & APH ☐ PCE & Breakdown ☐ Other, specify in comments

Turn-Around Time: ☒ Standard ☐ Next Day ☐ 3 Day ☐ Same Day ☐ 2 Day ______ specify

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x [signature]	Diana Ojeda	4/30/25 1251	x [signature]	Nathan Wells	4/30/25 1252
x			x		

COC Air 1.7 - 12.15.23

Page 1 of 2

APPENDIX E

General Field Procedures

STANDARD OPERATING PROCEDURES – VAPOR SAMPLING FOR RETAIL PETROLEUM

This standard operating procedure (SOP) has been prepared to outline and describe the tasks of collecting ambient air samples and sub-slab soil vapor samples in the retail petroleum setting. The procedures outlined herein are designed to comply with State and local regulatory guidance and reflect the current professional standards and practices employed in the industry. This SOP is designed to cover the collection of two distinct types of samples; ambient air and vapor and sub-slab soil vapor.

This SOP does not cover the procedures of sub-slab sample port installation or the preparation of sampling containers and other laboratory supplied sampling equipment. This SOP also does not describe general safety hazards with respect to field work in general or required personal protective equipment (PPE). For details regarding site specific safety hazards and required PPE, the project specific health and safety plan (HASP) should be consulted.

AMBIENT AIR AND VAPOR SAMPLING

General Description

The collection of ambient air and vapor samples is generally performed by allowing a container in which the internal pressure is below atmospheric pressure (vacuum) to draw in outside air at a pre-determined flow rate over a pre-determined period of time. The flow rate is controlled with the use of a regulator, which is typically supplied by a laboratory. Based on the desired length of time over which the sample is to be collected, the volume of the sample container and flow rate are determined prior to initiating sampling. Ambient air is allowed to flow into the sample container undisturbed over the sampling period. When the sampling period has elapsed, the sample container is sealed and transported to a laboratory for analysis.

A summa canister is the most common type of sample container and comes in a variety of volumes. Six-liter (L) summa canisters are commonly used to collect ambient air samples. At the top of the canisters is a main valve usually followed by some form of quick-disconnect fitting to which various other components can be connected, for example, a flow regulator. Summa canisters frequently also have pre-installed vacuum gauges to determine the internal pressure of the canister. Gas sampling bags (i.e. Tedlar® bags) are also used to collect ambient air samples. The field sampler should be familiar with the scope of work (SOW) prior to initiating sampling.

Procedures

Initial activities include determining the location at which ambient air samples should be collected. The sampling locations should be pre-determined by the project manager (PM) or other project staff and described in the SOW. Once the sampling locations have been located, the areas should be observed to ensure that they are secure; ambient air sampling containers will likely be left unattended for a period of time and care should be exercised to ensure that the containers are not disturbed during the sampling period.

The field sampler should, at this time, ensure that all necessary equipment is on hand. General field equipment includes, but is not limited to, laboratory supplied sampling containers and flow regulators, field forms, a clock or timer, and writing utensils.

Prior to beginning sampling of ambient air, certain environmental conditions should be measured and recorded. Environmental conditions include local barometric pressure, humidity, and temperature, wind speed and direction, and precipitation. These conditions should be recorded on field forms. If direct measurement of environmental conditions is not possible, a local weather station or airport can be a suitable source of data.

Begin sampling by connecting an appropriate flow regulator to the sample container. A summa canister is the most frequently used sampling container for ambient air. Record the serial number and designated flow rate of the flow regulator on field forms and ensure that the flow rate corresponds to flow rate determined in the Workplan. Record the sample container volume and ensure it corresponds to the volume determined in the Workplan. Measure and record the initial vacuum of the sampling container. A vacuum gauge is typically pre-installed at the top of the sample container. If a vacuum gauge is not pre-installed, connect a suitable vacuum gauge to the sample container and open the main valve to obtain a reading.

Collect a sample by fully opening the main valve at the top of the sample container and record the sample start time. Allow the sample container to remain undisturbed for the pre-determined sampling period. Periodically check on the sample container during sampling and monitor the container vacuum. When the sampling period has elapsed, firmly close the main container valve and measure and record the final container vacuum and sample stop time.

Care should be taken to not allow the container vacuum to decrease to zero before the sampling period has elapsed. If the container vacuum approaches zero before the sampling period has elapsed, the main valve should be closed, and the final container vacuum and sample stop time recorded.

When sampling is complete, the sample should be transported to an analytical laboratory under standard chain-of-custody (COC) procedures. If significant changes to environmental conditions occurred during sampling, they should be noted on appropriate field forms.

SUB-SLAB SOIL VAPOR SAMPLING

General Description

The collection of sub-slab soil vapor samples generally employs the use of some type of sampling port which is installed through a concrete building slab. The sampling port serves as a conduit through which soil vapors existing beneath the slab can sampled. This SOP does not cover the installation or details of the various types of sampling ports used in the industry, however, most sampling ports consist of a stainless steel tube which is installed in a pre-drilled hole through the slab. The annular space between the port and slab is sealed by various materials which include cement, bentonite clay, and/or synthetics such as silicone, Teflon®, and low-density polyethylene (LDPE). The purpose of the annular seal is to isolate the air space above the slab from that below the slab. For installation of sub-slab soil vapor sampling ports, refer to either the manufacturer's installation SOP or consult with the PM for another appropriate SOP.

Sampling sub-slab soil vapor generally uses an electric air pump, common sample containers such as summa canisters, and various other laboratory supplied equipment such as manifolds. The totality of the sampling equipment including any tubing used, pumps, manifolds, sampling ports, and sample containers is referred to as the sampling train.

This SOP describes the use of a helium shroud during sampling. The sampling train is commonly covered by a shroud into which helium gas is introduced during purging and sampling. The purpose of the helium is to act as a tracer gas; should helium be detected in the sample by the laboratory it indicates a potential leak in the sampling train. Additional details follow below.

Procedures

<u>Pre-Sampling Procedures</u>

Initial activities include determining the locations of the sampling ports. Sampling ports should be inspected to ensure that no damage has occurred to them since installation or the previous sampling event. The location of the sampling ports should be clearly identified on the site plan.

The field sampler should, at this time, ensure that all necessary equipment is on hand. General field equipment includes, but is not limited to, laboratory supplied sampling containers, regulators, manifolds, pumps, tubing, field forms, a clock or timer, helium source, shroud, helium detector, vacuum pump, and writing utensils.

Prior to beginning sampling of sub-slab soil vapor, certain environmental conditions should be measured and recorded. Environmental conditions include local barometric pressure, humidity, and temperature, wind speed and direction, and precipitation. These conditions should be recorded on field forms. If direct measurement of environmental conditions is not possible, a local weather station or airport can be a suitable source of data.

<u>Equipment Set Up</u>

Begin by removing the protective cap on the sampling port. Connect one end of a length of suitable tubing to the top of the sampling port and connect the other end to the sampling end of the manifold. Connect one end of another length of suitable tubing to the purge end of the manifold and connect the other end to the interior pass-through port on the helium shroud.

Connect one end of another suitable length of tubing to the exterior pass-through port on the helium shroud and connect the other end to a suitable air pump. Connect a source of helium gas to the helium gas port on the helium shroud using a length of suitable tubing. Connect the sample container to the sample container end of the manifold (typically a quick-disconnect fitting). Cover the sample port, manifold, and sample container with the helium shroud.

<u>Shut-In Test</u>

Conduct a shut-in test by ensuring the sample container main valve is closed, the purge valve is open, and the valve on the sample end of the manifold is closed. Turn on the electric air pump and pull a vacuum of a minimum of 20 inches of mercury (in. Hg.) When the minimum vacuum has been pulled, close the purge valve and turn off the air pump. Note the vacuum in the manifold and begin timing. A loss of two or more in. Hg in five minutes will be considered an unsuccessful test. An unsuccessful test usually indicates a leak in the manifold. If a leak is detected, troubleshoot and repeat the test. Following a successful shut-in test, proceed with purging.

<u>Purging</u>

Begin the purging process by opening the purge valve on the manifold. Introduce helium gas into the shroud and measure and record on field forms the helium concentration within the shroud using a portable dielectric helium detector or equivalent. The target concentration is 20 percent. Once the target concentration of helium has been achieved, turn on the electric air pump and begin purging air from the sampling train. Pump for the period of time required to purge all of the air out of the sampling train, based on the purge flow rate and the volume of the sampling train. During purging, place the tip helium detector at the discharge end of the air pump. The presence of helium at this location indicates a leak in the sampling train or the annular seal between the sampling port and the concrete slab. If helium is detected, stop the purge process and troubleshoot the leak. Once the leak has been sealed, repeat the purge process until no helium is detected in the purge stream.

<u>Sampling</u>

Following successful shut-in testing and purging, proceed with sample collection. Begin by measuring and recording the initial sample container vacuum as described above. Next, open the valve on the sample container end of the manifold. Lastly, open the main valve on the top of the sample container to allow sample to be drawn in. Note and record the time at which the main valve was opened. Allow sample to be drawn into the sample container for a pre-determined period of time based on the regulated flow rate and the sample container volume. The vacuum in the sample container should be monitored over the sampling duration. When the sampling time has elapsed, the main valve should be firmly closed, the sampling stop time and final sample container vacuum shall be measured and recorded on field forms.

During sampling, care should be taken to not allow the vacuum in the sample container to approach zero before the pre-determined sampling time has elapsed. If the vacuum in the sample container approaches zero before the sampling duration has elapsed, the main valve should be closed and the sampling stop time be recorded in addition to the final vacuum.

When sampling is complete, the sampling train can be dismantled and the sampling port be sealed and resecured. The sample should be transported to an analytical laboratory under standard chain-of-custody procedures. If significant changes to environmental conditions occurred during sampling, they should be noted on appropriate field forms.

EXCEPTION AND LIMITATIONS

Additional tasks or non-standard procedures that may be requested or required for a particular site should be discussed with the PM prior to mobilizing to a site. This SOP is intended to cover specific methods for sampling ambient air and sub-slab soil vapor. It is the responsibility of the sampler to be familiar with the equipment and methods described in this SOP. Should questions arise during sampling, the sampler should stop work, review the SOP, review the Workplan, and/or contact the PM prior to proceeding. At no time should the sampler proceed without fully understanding the scope of work and the methods employed.

11/15/2021 Version