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November 15, 2023

Mrs. Nancy Sawka
Oregon Department of Environmental Quality
Western Region Eugene Office
165 East Seventh Avenue, Suite 1000
Eugene, Oregon 97401

DEQ Tanks File No.: 20-20-0844

Third Quarter 2023 Groundwater Monitoring Report

United Pacific #5468
5720 Main Street
Springfield, Oregon

Dear Mrs. Sawka:

On behalf of United Pacific (UP), Montrose Environmental Services, Inc. (Montrose) is pleased to provide the *Third Quarter 2023 Groundwater Monitoring Report* (Report) for the above referenced Site (**Figure 1**). This Report presents a summary of the liquid-phase hydrocarbon (LPH) removal activities conducted during the Third quarter of 2023 and a summary of the results for groundwater monitoring conducted on September 18 and 19, 2023.

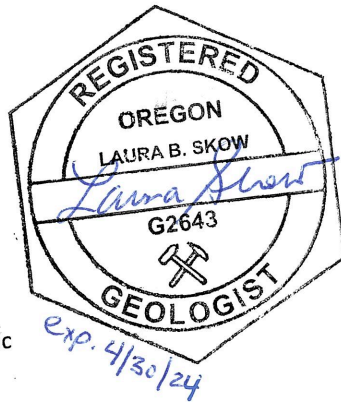
Groundwater monitoring results indicate that LPH is present in several onsite wells and concentrations of dissolved-phase petroleum hydrocarbons exceed the Oregon Department of Environmental Quality's (DEQs) Risk Based Concentrations (RBCs) for the Ingestion and Inhalation from Tapwater for the occupational receptor scenario are present in groundwater beneath the Site. Monthly LPH removal and quarterly groundwater monitoring are recommended while remedial actions are determined for the Site. Should you have questions regarding this report, the LPH removal activities, or the groundwater monitoring results, please contact the undersigned at (714) 919-6500.

Sincerely,

Montrose Environmental

A handwritten signature in blue ink that reads "Laura Skow".

Laura Skow, RG
Project Manager



c: Mr. Tom Robins, United Pacific

Third Quarter 2023 Groundwater Monitoring Report

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Appendix C:	Laboratory Analytical Report
Appendix D:	Groundwater Monitoring Field Forms
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Third Quarter 2023 Groundwater Monitoring Report

SITE INFORMATION

Monitoring and Sampling Date:	September 18 and 19, 2023
Site Location:	United Pacific #5468 5720 Main Street Springfield, Oregon 97478
United Pacific Contact:	Mr. Tom Robins
Montrose Contact:	Mrs. Laura Skow
Regulatory Agency:	Oregon Department of Environmental Quality Western Region Eugene Office DEQ Tanks File No.: 20-20-0844

WORK PERFORMED

Montrose continued procurement of utilities and permits necessary for the two-phase extraction (TPE) pilot testing activities as outlined in the *Workplan for Remedial Pilot Testing (Workplan)*. In July 2023, Montrose submitted applications to NW Natural for natural gas service to operate the remediation equipment; the applications are currently under review. Additionally, Montrose is working to secure authorization for air discharge from the Lane Regional Air Protection Agency (LRAPA) and for water discharge from the City of Springfield Public Works Department.

On July 27 and August 10 and 11, 2023, Montrose performed LPH removal from select site wells using passive skimmers and manual bailing methods. A total of approximately 1.66 gallons of LPH and 9.90 gallons of groundwater were removed. LPH removal and well gauging field data sheets for the third quarter of 2023 are included as **Appendix A**.

On September 18 and 19, 2023, Montrose performed well gauging, LPH removal, and groundwater sampling activities. A total of approximately 2.05 gallons of LPH and 6.45 gallons of groundwater were removed during the LPH removal portion of the work. LPH removal data for the reporting period are summarized in **Table 1**. Site wells not containing measurable amounts of LPH were sampled using DEQ approved low-flow purge sampling techniques.

Groundwater samples were transported to a State approved environmental laboratory and analyzed for the presence of total petroleum hydrocarbons quantified as gasoline (TPH-Gx) by Method NWTPH-Gx and benzene, toluene, ethylbenzene, total xylenes (BTEX collectively), methyl tert-butyl ether, naphthalene, 1,2-dibromoethane, and 1,2-dichloroethane by Environmental Protection Agency (EPA) Method 8260D. Note that the analysis plan was temporarily reduced from full scan VOCs to short list VOCs since the wells are known to be impacted and remediation is planned for the site. Full scan VOC analysis may be reinstated for



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future monitoring if directed by the DEQ, for compliance monitoring once remediation is initiated, or for initial screening of new wells installed at the site.

Water quality parameters were measured in the field during sampling and are included in **Table 2**. Field-measured water quality parameters included dissolved oxygen (DO), oxidation reduction potential (ORP), temperature, potential hydrogen level (pH), electrical conductivity, and turbidity. Current and historical groundwater analytical results are presented in **Table 2** and **Table 3**, respectively. An area plan showing the Site and surrounding areas is presented as **Figure 2** and a site plan showing the detailed site configuration and monitoring well locations is presented as **Figure 3**. Site background information is included as **Appendix B**.

SUMMARY DATA

Monitoring Details

Monitoring Wells:	Onsite: 8	Offsite: 3
	Wells gauged: 11	Wells sampled: 7
Extraction Wells:	Onsite: 3	Offsite: 0
	Wells gauged: 3	Wells sampled: 2
Observation Wells:	Onsite: 4	Offsite: 0
	Wells gauged: 4	Wells sampled: 0
Purging Method:	Low-flow with peristaltic pump & dedicated tubing	
Sampling Method:	Grab	
Purge Water Disposal:	Onsite drum, pending disposal (~9.9 gallons)	
Wells with LPH:	5	
LPH Thickness:	Seen to 0.15 feet	
Current Remediation Method:	Passive skimming and manual bailing	

Hydrological Parameters

Depth to Groundwater (below TOC):	Range: 11.29 to 14.25 feet
Groundwater Elevation	Range: 497.12 to 499.00 feet amsl
Groundwater Flow Direction:	North-Northwest
Groundwater Gradient:	0.013 ft/ft
Average Groundwater Level Change:	0.59 feet decrease

Select Analytical Results (Table 2)

Wells with TPH-Gx: 4	Maximum: 19,000 µg/L (MW-4)
Wells with Benzene: 4	Maximum: 1,200 µg/L (EW-4)

THIRD QUARTER 2023 GROUNDWATER MONITORING RESULTS

Groundwater analytical results and field measurements for the third quarter 2023 sampling event are presented in **Tables 2, 3**, and **4**. **Figure 4** shows the monitoring well locations with the corresponding analytical results for TPH-Gx, benzene, and MTBE. Note that groundwater analytical results are compared to the DEQ RBCs for the Ingestion and Inhalation from Tapwater for the occupational worker scenario. Groundwater monitoring results are summarized below:



Third Quarter 2023 Groundwater Monitoring Report

- The static groundwater level decreased an average of 0.59 feet since the previous monitoring event on June 29, 2023.
- As shown in **Table 2**, groundwater elevations ranged from 497.12 to 499.00 feet above mean sea level (amsl). The groundwater flow direction and gradient were calculated for the Site using data from Wells MW-3, MW-5, and MW-11. The flow direction is toward the north-northwest at an approximate gradient of 0.013 feet per foot (ft/ft), which is generally consistent with the prior groundwater monitoring event. The groundwater gradient, flow direction, and groundwater elevation contours are shown on **Figure 5**. A summary of historical groundwater flow direction and gradient data is presented in **Table 5** and a rose diagram showing all measured groundwater flow directions and gradients measured to date is presented as **Figure 6**.
- LPH was measured in Wells MW-1, MW-2, MW-6, and EW-1R at thicknesses of 0.02, 0.06, 0.04, and 0.15 feet, respectively (**Figure 4**); LPH sheen was observed in Well MW-5.
- Dissolved-phase TPH-Gx was detected four of the nine wells sampled at a concentrations ranging from 840 micrograms per Liter ($\mu\text{g/L}$, EW-2R) to 19,000 $\mu\text{g/L}$ (MW-4), which exceed the applicable DEQ RBC of 450 $\mu\text{g/L}$. TPH-Gx was not detected in the remaining wells sampled at concentrations greater than the laboratory reporting limit (RL).
- Benzene was detected in four of the nine wells sampled at concentrations ranging from 6.5 $\mu\text{g/L}$ (EW-2R) to 1,200 $\mu\text{g/L}$ (EW-4), which exceed the applicable DEQ RBC of 2.1 $\mu\text{g/L}$. Benzene was not detected in the remaining wells sampled at concentrations greater than the laboratory RL ($<1.0 \mu\text{g/L}$).
- Toluene was detected in four wells at concentrations ranging from 3.4 $\mu\text{g/L}$ (EW-2R) to 2,000 $\mu\text{g/L}$ (EW-4). None of the wells exceed the DEQ RBC concentration of 6,300 $\mu\text{g/L}$ for toluene.
- Ethylbenzene was detected in three wells at concentrations ranging from 3.9 $\mu\text{g/L}$ (MW-4) to 180 $\mu\text{g/L}$ (MW-7). The concentrations at Wells MW-7 and EW-4 exceed the applicable DEQ RBC of 6.4 $\mu\text{g/L}$.
- Total xylenes were detected in four wells at a concentration ranging from 140 $\mu\text{g/L}$ (EW-2R) to 5,100 $\mu\text{g/L}$ (MW-4). The concentrations of total xylenes in three of the four wells exceed the applicable DEQ RBC of 830 $\mu\text{g/L}$. Total xylenes were not detected in the remaining wells sampled at concentrations greater than laboratory RL ($<2.0 \mu\text{g/L}$).
- MTBE was not detected in any of the wells sampled at concentrations greater than the laboratory RLs. Note that the laboratory RL for MTBE is 5.0 $\mu\text{g/L}$.
- Naphthalene was detected in four wells at concentrations ranging from 6.2 $\mu\text{g/L}$ (EW-2R) to 130 $\mu\text{g/L}$ (MW-4), which are greater than the DEQ RBC of 0.72 $\mu\text{g/L}$.



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- 1,2-Dibromoethane (EDB) was detected in one well at a concentration of 0.023 µg/L (EW-4), which is below the DEQ RBC of 0.034 µg/L. 1,2-Dichloroethane (EDC) was not detected in any of the wells sampled at concentrations greater than the laboratory RL (<1.0 µg/L).
- Lead was not detected in any of the wells sampled at concentrations greater than the laboratory RL (<5.0 µg/L).
- Constituents of concern (COCs) were not detected at concentrations greater than laboratory RLs in either of the equipment blanks (EB-1 and EB-2) submitted with the groundwater samples.

Field measurements of DO levels ranged from 0.08 milligrams per liter (mg/L) at Well MW-4 to 3.86 mg/L at Well MW-3. ORP levels ranged from -162.9 millivolts (mV) measured at Well EW-2R to 160.4 mV at Well MW-9.

A copy of the laboratory analytical report is provided as **Appendix C**. Groundwater monitoring field forms are provided as **Appendix D**. Montrose's Monitoring Well Sampling Protocols are included as **Appendix E**. Purge water generated during the groundwater monitoring event was placed into a 55-gallon drum, previously staged on site. When the drum is full arrangements will be made to have it transported to an appropriate disposal/recycling facility under manifest.

LPH REMOVAL

LPH removal activities were conducted on July 27, August 10 and 11, and September 19, 2023. During each LPH removal event, the skimmers were removed from the wells, emptied, and volumes of LPH and groundwater recorded (**Appendix A** and **Appendix D**). The wells were then gauged and depths to LPH and groundwater recorded. For remaining wells containing measurable LPH, manual LPH removal was conducted using disposable polyethylene bailers.

The well gauging and LPH removal activities will continue on a periodic basis as long as measurable amounts of LPH are detected in wells at the Site. To date, approximately 358 gallons of LPH and 3,710 gallons of impacted groundwater have been removed from site wells during the LPH removal activities (**Table 1**).

HYDROCARBON TREND AND DISTRIBUTION ANALYSIS

A summary of current and historical groundwater sample analytical results is provided in **Tables 2** and **3**, respectively. Groundwater elevation and LPH thickness trends are shown on **Chart 1** and TPH-Gx and benzene concentration trends are shown in **Charts 2** and **3**, respectively.

The average groundwater elevation beneath the Site has decreased approximately 0.59 feet since June 29, 2023 (previous monitoring event). **Chart 1** shows a groundwater elevation low occurring around October 2022; a similar low in groundwater elevations occurred around the same time in 2021. The annual fluctuation in groundwater elevation is well documented since late 2020, the beginning of the current data set.



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Measurable LPH was present in four wells at thicknesses of 0.02 feet (MW-1), 0.06 feet (MW-2), 0.04 feet (MW-6) and 0.15 feet (EW-1R) on September 18 and 19, 2023; hydrocarbon sheen was present in Well MW-5. The distribution of LPH is currently centered near the USTs (confirmed source, historically) and LPH thicknesses exhibit a fluctuating but generally decreasing trend over the period of record (**Chart 1**). For example, the LPH thickness in Well MW-6 has decreased from a maximum thickness of 1.65 feet in March 2021 to 0.04 feet in September 2023. Similarly, the LPH thickness in Well MW-5 has decreased from a maximum thickness of 0.23 feet in August 2021 to a hydrocarbon sheen in June 2023 (**Table 1**). Further changes in the distribution and thickness of LPH beneath the Site is expected over time and LPH recovery efforts will continue as long as LPH is detectable in site wells.

Since the previous monitoring event, TPH-Gx concentrations in Site wells have fluctuated. For example, the TPH-Gx concentration in Well MW-4 decreased from 4,400 µg/L on April 6, 2023 to 4,000 µg/L on June 29, 2023, and then rebounded to 19,000 µg/L on September 19, 2023, while the TPH-Gx concentration in Well MW-7 decreased since the previous sampling event (**Table 3**). The TPH-Gx concentration decreased from 9,200 µg/L (June 2023) to 7,100 µg/L (September 2023) in Well MW-7. The fluctuations in COC concentrations appear to be following a trend of seasonal fluctuations in COC concentrations where lows are typically seen during the winter months and highs are typically seen during the summer months. This trend is expected to continue with overall slight decreases until active remediation is implemented at the Site, at which time significant and permanent decreases in COC concentrations are expected.

Current LPH thicknesses and TPH-Gx, BTEX and MTBE concentrations are shown in **Figure 4** to illustrate the distribution of dissolved-phase hydrocarbons. As shown in **Figure 4**, LPH is present in Wells MW-1, MW-2, MW-6 and EW-1R, located in the vicinity of the UST cavity, and the highest COC concentrations are present in Well EW-4, located west of the USTs. COC concentrations have remained at non-detectable levels in perimeter Wells MW-3, MW-8, MW-9, MW-10 and MW-11 and serve to delineate the plume to the south, west, northwest, north and southeast.

CONCLUSION AND RECOMMENDATIONS

Based on the third quarter 2023 groundwater monitoring results, LPH is present in onsite Wells MW-1, MW-2, MW-6 and EW-1R and hydrocarbon sheen was present in Well MW-5. Dissolved-phase hydrocarbon concentrations in groundwater samples collected from Wells MW-4, MW-7, EW-2R and EW-4 exceed applicable DEQ RBCs for the Ingestion and Inhalation from Tapwater for the occupational worker scenario. Results from perimeter Wells MW-3 and MW-8 through MW-11 define the groundwater plume to the south, west, northwest, north and southeast. Continued monitoring of these wells is recommended in order to monitor possible plume migration offsite.

Montrose is in the process of sourcing equipment and procuring utilities and permits necessary to implement the TPE pilot test as proposed in the Workplan. An application for gas service was



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United Pacific #5468
Springfield, Oregon

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submitted for review and Montrose is coordinating with the appropriate agencies for authorization for air and water discharge. Montrose will continue to update the DEQ on the procurement progress. Once the utilities and required permits are secured, Montrose will provide a schedule and advance notification prior to commencing field activities. Montrose recommends continuing monthly LPH gauging and removal activities to recover LPH from Site wells and quarterly groundwater monitoring to evaluate groundwater quality beneath the Site. The next groundwater monitoring event is planned for the fourth quarter of 2023.

Montrose is pleased to be of service to UP and the DEQ. 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.



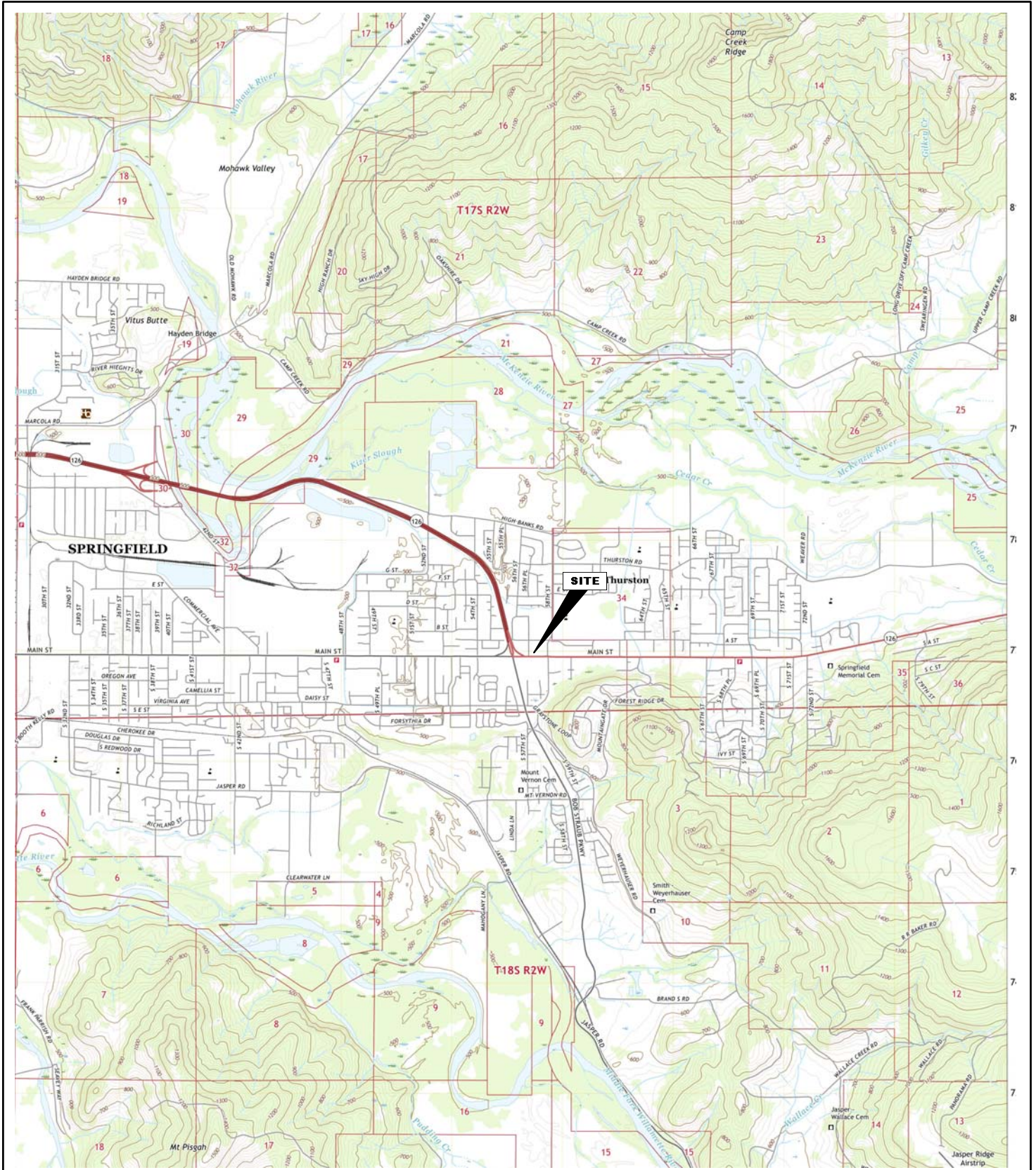
Third Quarter 2023 Groundwater Monitoring Report

ACRONYMS:

amsl:	above mean sea level
bgs:	below ground surface
BTEX:	benzene, toluene, ethylbenzene, and total xylenes
btoc:	below top of casing
°C:	degrees Celsius
DEQ:	Oregon Department of Environmental Quality
DO:	dissolved oxygen
DTW:	depth to water
EW:	extraction well
GW Δ:	change (difference) in water elevation since last measurement
Fe ²⁺ :	ferrous iron
ft:	feet
ft/ft:	feet per foot
GW:	groundwater
µg/L:	micrograms per Liter
µs/cm:	microsiemens per centimeter
LPH:	liquid phase hydrocarbons
mg/L:	milligrams per Liter
MTBE:	methyl tert-butyl ether
mV:	millivolts
MW:	monitoring well
na:	not applicable/not analyzed
nm:	not measured
ns:	not sampled
NTU:	Nephelometric Turbidity Unit
ORP:	oxidation reduction potential
pH:	potential hydrogen
ppm:	parts per million
PQL:	practical quantitation limit
RBC:	Risk based concentration
RL:	reporting limit
TPH-Dx:	total diesel-range petroleum hydrocarbons
TPH-Gx:	total gasoline-range petroleum hydrocarbons
TPH-Ox:	total lube oil-range petroleum hydrocarbons
UST:	underground storage tank
VOCs:	volatile organic compounds



FIGURES



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

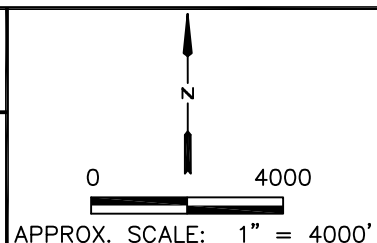


FIGURE 1
 SITE LOCATION MAP

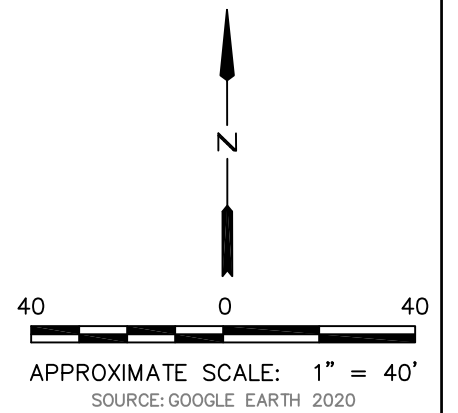
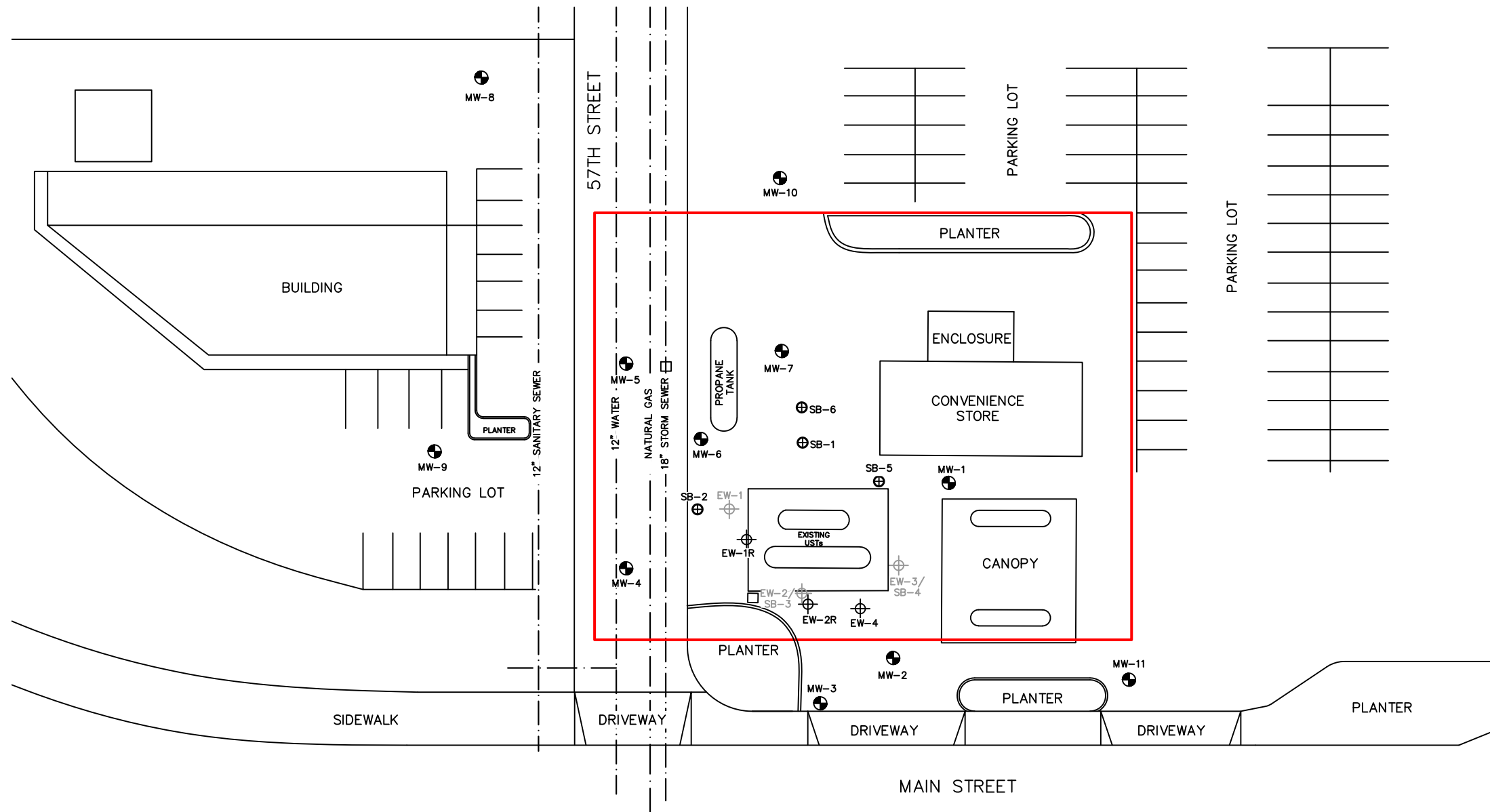
United Pacific #5468
 5720 Main Street,
 Springfield, OR 97478


DATE DRAWN 11/10/2022
PROJECT NO. 006811
FILE NO. 006811F1-SLM

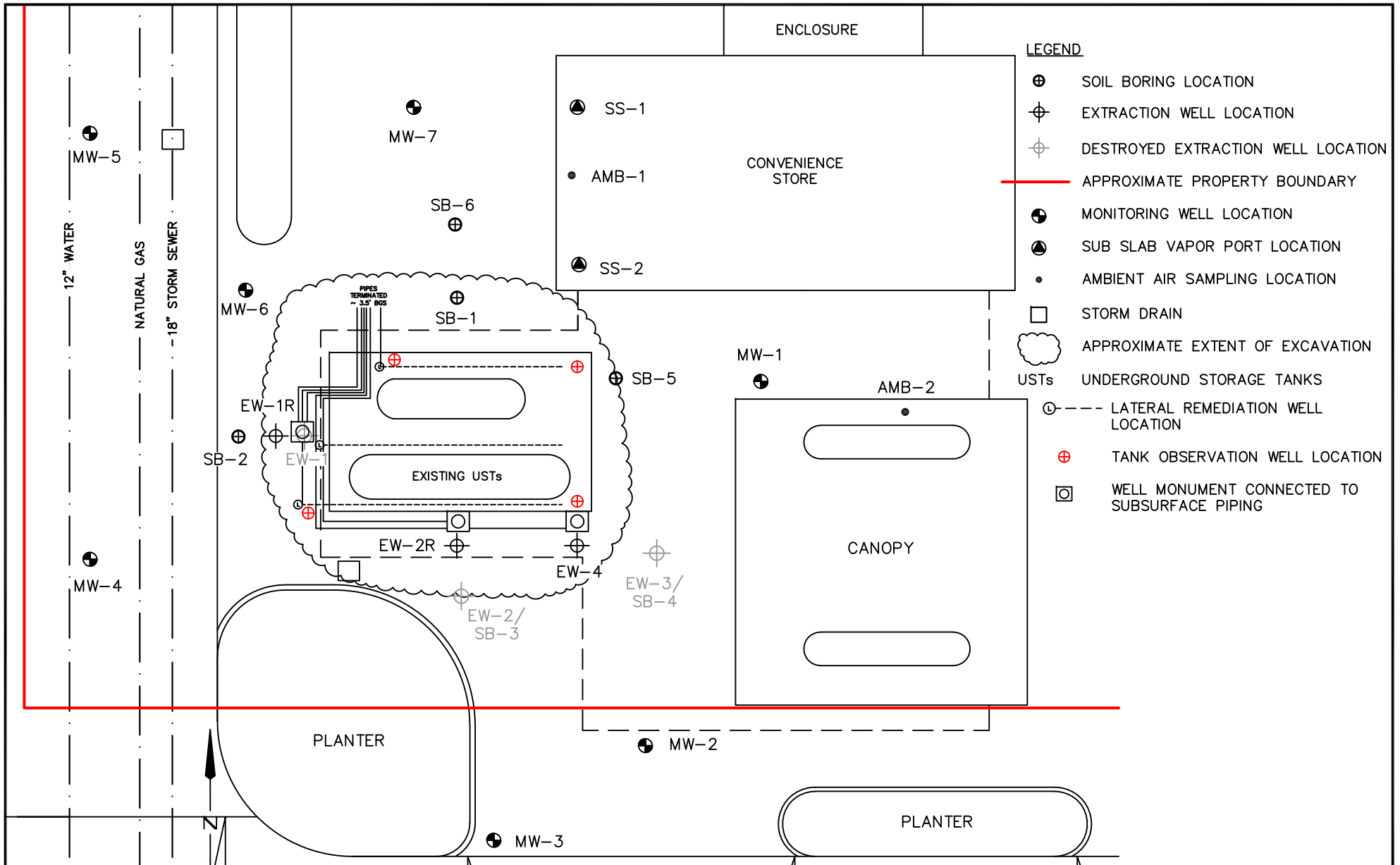
LEGEND

- ⊕ SOIL BORING LOCATION
- ⊗ MONITORING WELL LOCATION
- ⊕ EXTRACTION WELL LOCATION
- ⊕ DESTROYED EXTRACTION WELL LOCATION
- APPROXIMATE PROPERTY BOUNDARY
- STORM DRAIN

BI-MART



 <small>1631 E. Saint Andrew Place, Santa Ana, CA 92705 1.714.919.6500</small>	FIGURE 2 AREA PLAN	DATE DRAWN 03/02/2023
	United Pacific #5468 5720 Main Street, Springfield, OR 97478	PROJECT NO. 006811
		FILE NO. 006811F2-AP



- LEGEND**
- ⊕ SOIL BORING LOCATION
 - ⊕ EXTRACTION WELL LOCATION
 - ⊕ DESTROYED EXTRACTION WELL LOCATION
 - APPROXIMATE PROPERTY BOUNDARY
 - ⊕ MONITORING WELL LOCATION
 - ⊕ SUB SLAB VAPOR PORT LOCATION
 - AMBIENT AIR SAMPLING LOCATION
 - STORM DRAIN
 - ☁ APPROXIMATE EXTENT OF EXCAVATION
 - USTs UNDERGROUND STORAGE TANKS
 - ⊕ --- LATERAL REMEDIATION WELL LOCATION
 - ⊕ TANK OBSERVATION WELL LOCATION
 - ⊕ WELL MONUMENT CONNECTED TO SUBSURFACE PIPING



FIGURE 3
SITE PLAN

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

DATE DRAWN
02/02/2023

PROJECT NO.
006811

FILE NO.
006811F3-SP

20 0 20
APPROXIMATE SCALE: 1" = 20'
SOURCE: GOOGLE EARTH 2020
WELLS SURVEYED BY KPFF ON 12/09/20 & 03/22/21

- LEGEND**
- ⊕ SOIL BORING LOCATION
 - ⊙ MONITORING WELL LOCATION
 - ⊕ EXTRACTION WELL LOCATION
 - ⊕ DESTROYED EXTRACTION WELL LOCATION
 - APPROXIMATE PROPERTY BOUNDARY
 - STORM DRAIN
 - ↙ 0.013 FT/FT APPROXIMATE GROUNDWATER DIRECTION AND MAGNITUDE IN FEET PER FOOT
 - USTs UNDERGROUND STORAGE TANKS
 - LPH LIQUID PHASE HYDROCARBONS
 - - - APPROXIMATE CURRENT EXTENT OF LPH
 - 0.01 FEET OF LPH IN WELL
 - <5.0 COMPOUND NOT DETECTED AT OR ABOVE LABORATORY METHOD REPORTING LIMIT
 - TPHg TOTAL GASOLINE-RANGE PETROLEUM HYDROCARBONS
 - B BENZENE
 - MTBE METHYL TERT-BUTYL ETHER
 - ug/L MICROGRAMS PER LITER
 - * NOT SAMPLED DUE TO LPH PRESENCE
 - SHEEN** SHEEN WAS OBSERVED
 - BOLD** DETECTION EXCEEDS RISK BASED CONCENTRATION (RBC)

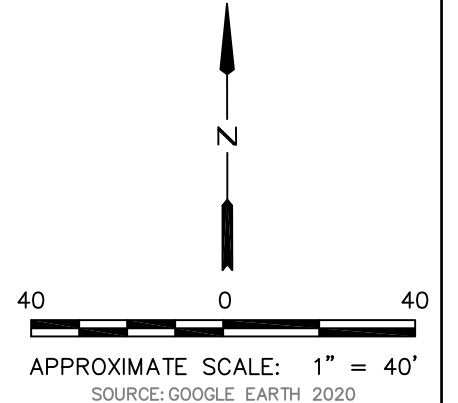
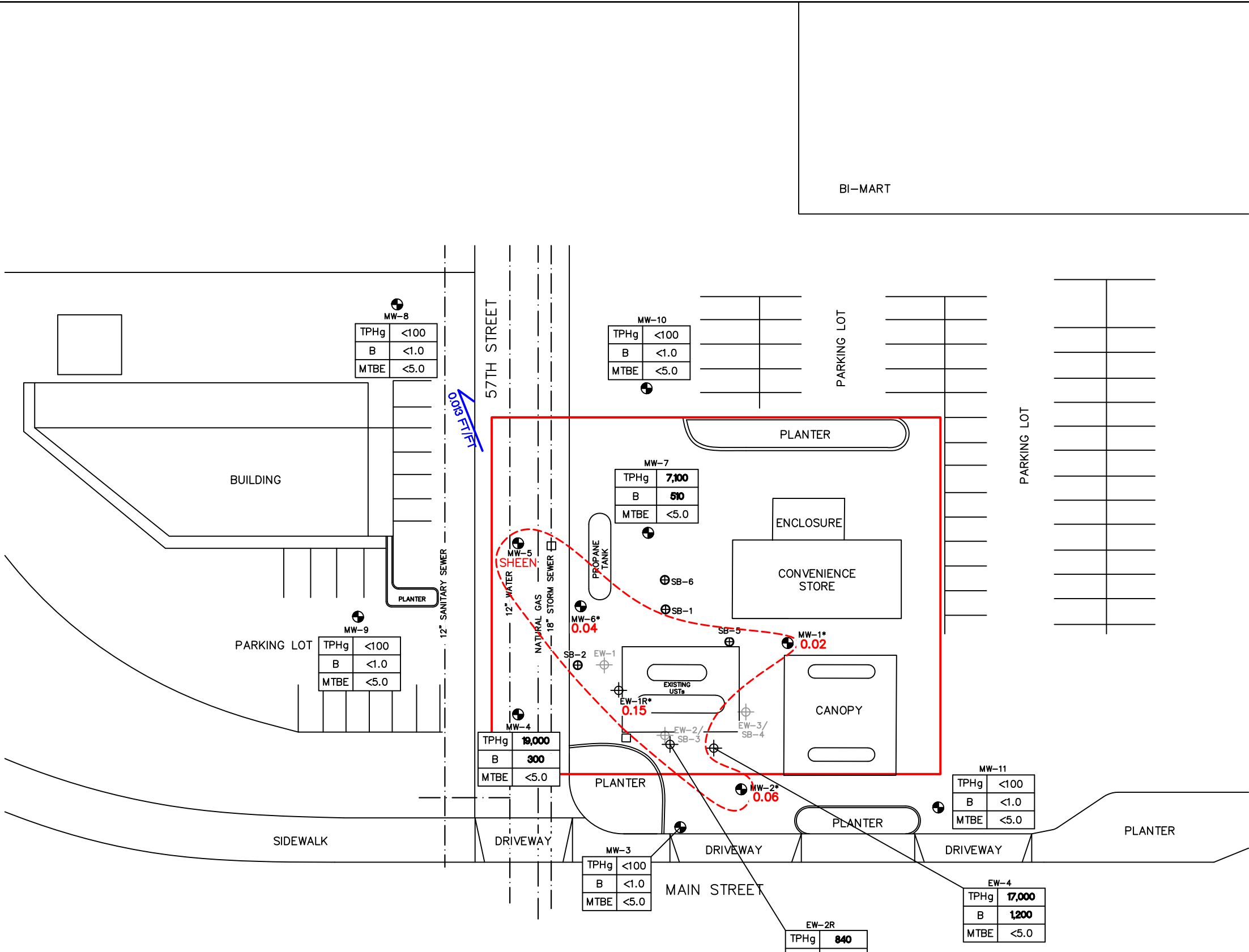


FIGURE 4
GROUNDWATER ANALYTICAL MAP
SEPTEMBER 18 & 19, 2023

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

DATE DRAWN 10/16/2023
PROJECT NO. 006811
FILE NO. 006811F4-GAR

LEGEND

- ⊕ SOIL BORING LOCATION
- ⊗ MONITORING WELL LOCATION
- ⊕ EXTRACTION WELL LOCATION
- ⊕ DESTROYED EXTRACTION WELL LOCATION
- APPROXIMATE PROPERTY BOUNDARY
- STORM DRAIN
- ↙ 0.013 FT/FT APPROXIMATE GROUNDWATER DIRECTION AND MAGNITUDE IN FEET PER FOOT
- USTs UNDERGROUND STORAGE TANKS
- 499.62 GROUNDWATER ELEVATION IN FEET AMSL
- AMSL ABOVE MEAN SEA LEVEL
- - - APPROXIMATE GROUNDWATER CONTOUR IN FEET AMSL
SOLID WHERE CERTAIN; DASHED WHERE INFERRED

NOTE: WELLS MW-3, MW-5 AND MW-11 USED TO CALCULATE GROUNDWATER FLOW DIRECTION AND GRADIENT

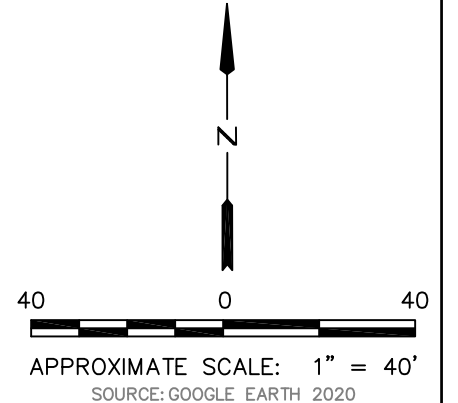
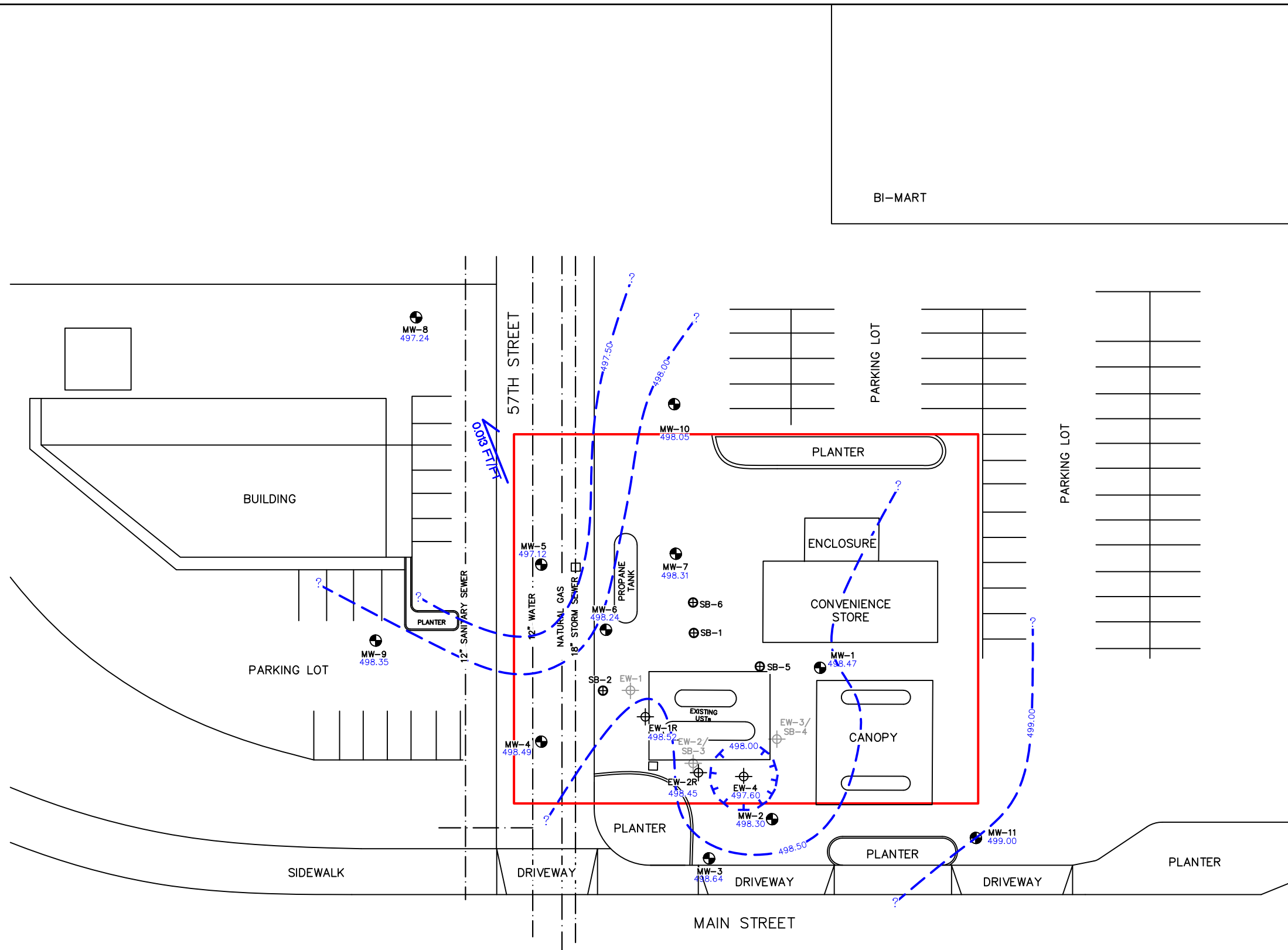


FIGURE 5
GROUNDWATER CONTOUR MAP
SEPTEMBER 18 & 19, 2023

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

DATE DRAWN 10/16/2023
PROJECT NO. 006811
FILE NO. 006811F5-GCM

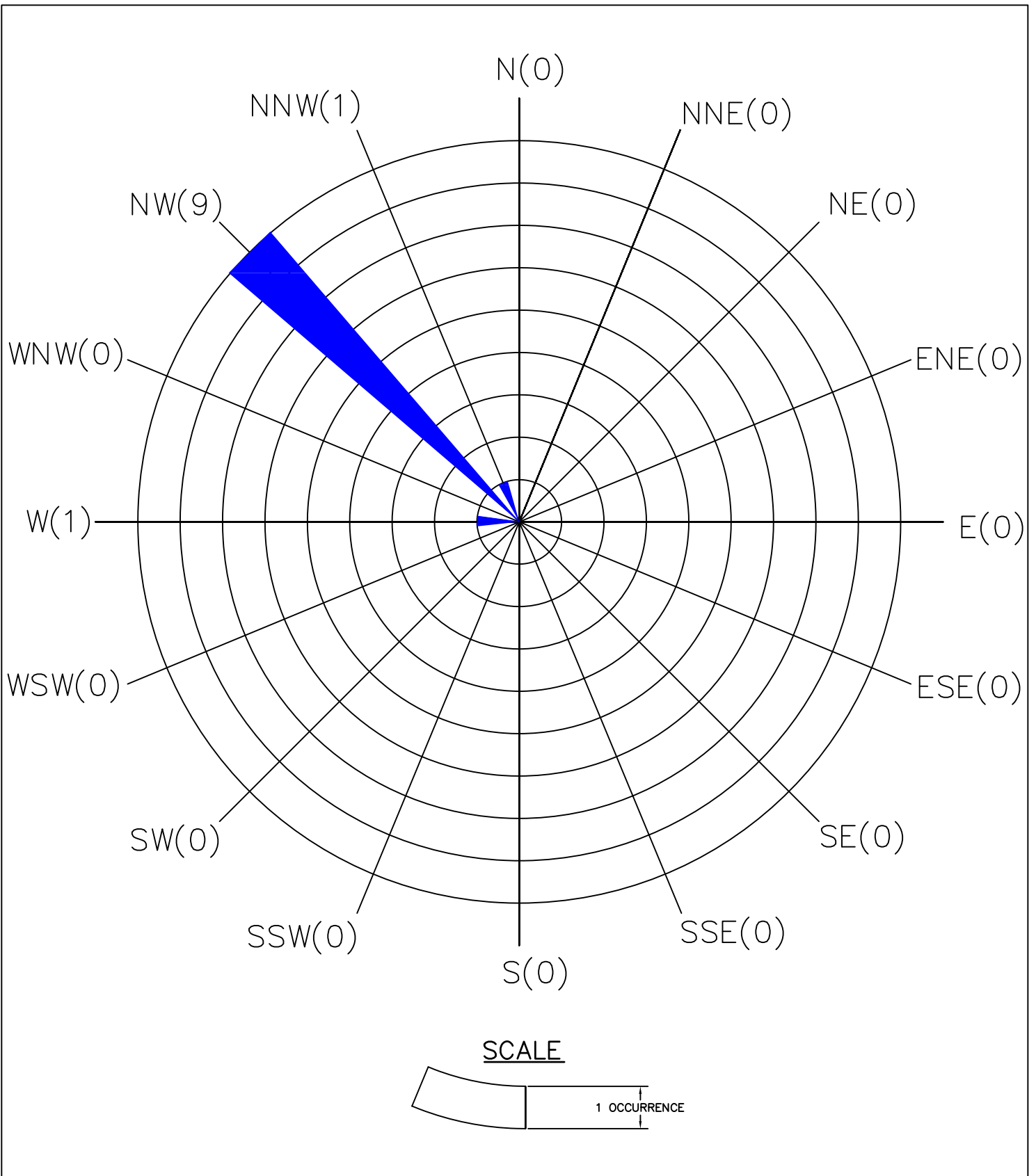


FIGURE 6
GROUNDWATER FLOW DIRECTION
ROSE DIAGRAM

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

DATE DRAWN
10/13/2023

PROJECT NO.
006811

FILE NO.
006811F6-RD



TABLES

Table 1
United Pacific #5468
Summary of LPH Removal
Springfield, Oregon
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Well ID	Date Measured	TOC Elevation (ft amsl)	Depth to LPH (ft btoc)	Depth to Water (ft btoc)	LPH Thickness (ft)	Thickness Change (ft)	Groundwater Elevation (ft amsl)	Elevation Change (ft)	Estimated LPH Removed (gal)	Cumulative LPH Removed (gal)	Estimated Water Removed (gal)	Cumulative Water Removed (gal)		
EW-1	11/19/20 ⁽³⁾	510.97	--	11.05	--	--	499.92	--	--	--	700.0	700.0		
	01/13/21 ⁽³⁾		--	10.48	--	--	500.49	0.57	--	--	--	700.0		
	01/27/21 ⁽⁴⁾		10.70	10.92	0.22	0.22	500.22	-0.27	0.35	0.35	1.4	701.4		
	02/03/21 ⁽³⁾		10.55	10.57	0.02	-0.20	500.42	0.20	5.00	5.35	50.0	751.4		
	02/25/21 ⁽⁵⁾		10.55	10.59	0.04	0.02	500.41	0.00	0.25	5.60	3.0	754.4		
	03/30/21		11.05	11.14	0.09	0.05	499.90	-0.51	0.00	5.60	0.0	754.4		
	04/20/21		11.55	11.73	0.18	0.09	499.38	-0.52	0.00	5.60	0.0	754.4		
	05/20/21 ⁽⁷⁾		11.80	11.94	0.14	-0.04	499.14	-0.24	15.00	20.60	135.0	889.4		
	06/08/21		--	11.73	0.00	-0.14	499.24	0.10	0.00	20.60	0.0	889.4		
	06/23/21 ⁽⁸⁾		--	11.74	0.00	0.00	499.23	-0.01	0.00	20.60	1.7	891.1		
	07/08/21		--	11.96	0.00	0.00	499.01	-0.22	0.00	20.60	0.0	891.1		
	07/22/21		12.11	12.12	0.01	0.01	498.86	-0.15	0.25	20.85	1.0	892.1		
	08/05/21		--	12.18	0.00	-0.01	498.79	-0.07	0.00	20.85	0.0	892.1		
	08/18/21		--	12.29	0.00	0.00	498.68	-0.11	0.00	20.85	0.0	892.1		
	09/01/21		--	12.26	0.00	0.00	498.71	0.03	0.00	20.85	0.0	892.1		
	09/22/21		--	11.72	0.00	0.00	499.25	0.54	0.00	20.85	1.4	893.5		
	10/06/21		--	11.40	0.00	0.00	499.57	0.32	0.00	20.85	0.0	893.5		
	10/20/21		--	11.37	0.00	0.00	499.60	0.03	0.00	20.85	0.0	893.5		
	11/03/21		--	11.02	0.00	0.00	499.95	0.35	0.00	20.85	0.0	893.5		
	11/17/21		--	10.81	0.00	0.00	500.16	0.21	0.00	20.85	0.0	893.5		
	12/08/21		--	10.68	0.00	0.00	500.29	0.13	0.00	20.85	0.0	893.5		
	12/22/21		--	9.90	0.00	0.00	501.07	0.78	0.00	20.85	0.0	893.5		
	01/11/22		--	10.20	0.00	0.00	500.77	-0.30	0.00	20.85	0.0	893.5		
	01/26/22		--	10.37	0.00	0.00	500.60	-0.17	0.00	20.85	0.0	893.5		
02/07/22	--	10.26	0.00	0.00	500.71	0.11	0.00	20.85	0.0	893.5				
Well Decommissioned on 02/08/22														
EW-1R	10/12/22 ⁽⁴⁾	510.86	12.17	12.19	0.02	--	498.69	--	0.10	0.10	2.0	2.0		
	11/14/22		--	10.90	0.00	-0.02	499.96	1.27	0.00	0.10	0.0	2.0		
	12/19/22		--	11.32	0.00	0.00	499.54	-0.42	0.00	0.10	3.0	5.0		
	01/18/23		--	10.91	0.00	0.00	499.95	0.41	0.00	0.10	0.0	5.0		
	02/28/23		--	10.69	0.00	0.00	500.17	0.22	0.00	0.10	0.0	5.0		
	03/27/23		--	10.35	0.00	0.00	500.51	0.34	1.00	1.10	5.5	10.5		
	01/18/23		--	10.91	0.00	0.00	499.95	-0.56	0.00	0.00	0.0	10.5		
	02/23/23 ⁽⁵⁾		--	10.69	0.00	0.00	500.17	0.22	0.00	0.00	0.0	10.5		
	03/27/23 ⁽⁵⁾		--	10.35	0.00	0.00	500.51	0.34	0.00	0.00	0.0	10.5		
	04/06/23 ⁽⁵⁾		10.10	10.11	0.01	0.01	500.76	0.25	0.20	1.30	1.3	11.8		
	05/09/23		--	10.53	0.00	0.00	500.33	-0.43	0.00	1.30	3.0	14.8		
	06/29/23		--	11.82	0.00	0.00	499.04	-1.29	0.00	1.30	0.0	14.8		
	07/27/23		--	12.11	0.00	0.00	498.75	-0.29	0.00	1.30	0.25	15.1		
	08/11/23		12.32	12.33	0.01	0.01	498.54	-0.21	0.10	1.40	2.40	17.5		
	09/19/23		12.30	12.45	0.15	0.14	498.52	-0.01	0.15	1.55	3.25	20.7		
	EW-2		11/19/20 ⁽³⁾	510.90	11.20	11.68	0.48	--	499.59	--	32.5	32.50	617.5 ⁽²⁾	617.5
			01/13/21 ⁽³⁾		10.22	12.05	1.83	1.35	500.25	0.66	5.00	37.50	45.0	662.5
01/27/21 ⁽⁴⁾		10.50	12.35		1.85	0.02	499.97	-0.28	2.60	40.10	2.4	664.9		
02/03/21 ⁽³⁾		10.77	11.37		0.60	-1.25	499.99	0.02	23.00	63.10	209.0	873.9		
02/25/21 ⁽⁵⁾		10.74	11.10		0.36	-0.24	500.08	0.09	0.50	63.60	0.0	873.9		
03/30/21		11.20	11.28		0.08	-0.28	499.68	-0.39	0.03	63.63	0.0	873.9		
04/20/21		11.74	11.93		0.19	0.11	499.12	-0.57	0.00	63.63	0.0	873.9		
05/20/21 ⁽⁷⁾		11.95	12.20		0.25	0.06	498.89	-0.22	15.00	78.63	135.0	1,008.9		
06/08/21 ⁽⁴⁾		11.90	12.00		0.10	-0.15	498.98	0.09	0.25	78.88	4.0	1,012.9		
06/23/21 ⁽⁴⁾		11.88	12.07		0.19	0.09	498.98	0.00	0.40	79.28	4.2	1,017.1		
07/08/21 ⁽⁹⁾		12.12	12.17		0.05	-0.14	498.77	-0.21	0.26	79.54	3.2	1,020.3		
07/22/21		--	12.28		0.00	-0.05	498.62	-0.15	0.00	79.54	0.0	1,020.3		
08/05/21 ⁽⁴⁾		12.32	12.33		0.01	0.01	498.58	-0.04	0.10	79.64	0.4	1,020.7		
08/18/21 ⁽⁴⁾		12.48	12.50		0.02	0.01	498.42	-0.16	0.10	79.74	1.0	1,021.7		
09/01/21 ⁽⁴⁾		12.40	12.42		0.02	0.00	498.50	0.08	0.10	79.84	1.0	1,022.7		
09/22/21 ⁽⁴⁾		11.84	11.87		0.03	0.01	499.05	0.56	0.20	80.04	3.0	1,025.7		
10/06/21		11.55	11.59		0.04	0.01	499.34	0.29	0.25	80.29	2.0	1,027.7		
10/20/21 ^(4,5)		11.52	11.63		0.11	0.07	499.35	0.01	0.25	80.54	3.0	1,030.7		
11/03/21		--	11.19		0.00	-0.11	499.71	0.36	0.00	80.54	0.0	1,030.7		
11/17/21		--	11.02		0.00	0.00	499.88	0.17	0.00	80.54	0.0	1,030.7		
12/08/21 ⁽⁷⁾	10.95	10.97	0.02	0.02	499.95	0.07	1.30	81.84	128.7	1,159.4				
12/22/21	10.20	10.22	0.02	0.00	500.70	0.75	0.13	81.97	0.0	1,159.4				
01/11/22	10.00	11.96	1.96	1.94	500.44	-0.26	6.60	88.57	2.4	1,161.8				
01/26/22 ⁽⁷⁾	10.95	12.00	1.05	-0.91	499.70	-0.74	11.60	100.17	20.0	1,181.8				
02/07/22	9.98	11.99	2.01	0.96	500.45	0.74	1.59	101.76	0.0	1,181.8				
Well Decommissioned on 02/08/22														



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Well ID	Date Measured	TOC Elevation (ft amsl)	Depth to LPH (ft btoc)	Depth to Water (ft btoc)	LPH Thickness (ft)	Thickness Change (ft)	Groundwater Elevation ⁽¹⁾ (ft amsl)	Elevation Change (ft)	Estimated LPH Removed (gal)	Cumulative LPH Removed (gal)	Estimated Water Removed (gal)	Cumulative Water Removed (gal)
EW-2R	10/12/22 ⁽⁴⁾	510.91	12.32	12.34	0.02	--	498.59	--	0.20	0.20	3.0	3.0
	11/14/22		--	10.94	0.00	-0.02	499.97	1.38	0.00	0.20	0.0	3.0
	12/19/22		11.53	11.54	0.01	0.01	499.38	-0.59	0.50	0.70	6.0	9.0
	01/18/23 ⁽⁴⁾		11.11	11.12	0.01	0.00	499.80	0.42	0.13	0.83	4.0	13.0
	02/28/23		--	10.93	0.00	0.00	499.98	0.18	0.00	0.83	0.0	13.0
	03/27/23		--	10.53	0.00	0.00	500.38	0.40	0.00	0.83	0.0	13.0
	04/06/23		--	10.32	0.00	0.00	500.59	0.21	0.00	0.83	0.0	13.0
	05/09/23		--	10.59	0.00	0.00	500.32	-0.27	0.00	0.83	0.0	13.0
	06/29/23		--	12.17	0.00	0.00	498.74	-1.58	0.00	0.83	0.0	13.0
	07/27/23		--	12.74	0.00	0.00	498.17	-0.57	0.00	0.83	0.0	13.0
	08/11/23		--	12.44	0.00	0.00	498.47	0.30	0.00	0.83	0.0	13.0
09/19/23	--	12.46	0.00	0.00	498.45	-0.02	0.00	0.83	0.0	13.0		
EW-3	11/19/20 ⁽³⁾	511.63	12.02	12.45	0.43	--	499.51	--	32.5	32.50	617.5 ⁽²⁾	617.5
	01/13/21 ⁽³⁾		11.13	11.29	0.16	-0.27	500.46	0.95	5.00	37.50	45.0	662.5
	01/27/21 ⁽⁴⁾		11.36	11.68	0.32	0.16	500.19	-0.27	0.60	38.10	3.9	666.4
	02/03/21 ⁽³⁾		12.79	12.89	0.10	-0.22	498.82	-1.38	16.00	54.10	149.0	815.4
	02/25/21 ⁽⁵⁾		ND	11.39	0.00	-0.10	500.24	1.42	0.00	54.10	0.0	815.4
	03/30/21		11.68	11.90	0.22	0.22	499.90	-0.34	0.07	54.17	1.5	816.9
	04/20/21 ⁽⁴⁾		12.25	12.64	0.39	0.17	499.29	-0.61	0.00	54.17	0.0	816.9
	05/20/21 ⁽⁷⁾		12.42	12.84	0.42	0.03	499.11	-0.18	15.00	69.17	135.0	951.9
	06/08/21		--	12.44	0.00	-0.42	499.19	0.08	0.00	69.17	0.0	951.9
	06/23/21 ⁽⁴⁾		12.40	12.41	0.01	0.01	499.23	0.04	0.07	69.24	0.5	952.4
	07/8/21 ⁽⁴⁾		12.62	12.71	0.09	0.08	498.99	-0.24	0.40	69.64	0.8	953.2
	07/22/21 ⁽⁴⁾		12.80	12.94	0.14	0.05	498.80	-0.19	1.00	70.64	4.0	957.2
	08/05/21 ⁽⁴⁾		12.86	13.07	0.21	0.07	498.72	-0.08	0.50	71.14	2.0	959.2
	08/18/21 ⁽⁴⁾		13.01	13.20	0.19	-0.02	498.58	-0.15	1.50	72.64	2.0	961.2
	09/01/21 ⁽⁴⁾		13.00	13.14	0.14	-0.05	498.60	0.02	0.25	72.89	1.5	962.7
	09/22/21 ⁽⁴⁾		12.36	12.45	0.09	-0.05	499.25	0.65	0.40	73.29	4.0	966.7
	10/06/21		--	12.16	0.00	-0.09	499.47	0.22	0.00	73.29	0.0	966.7
	10/20/21 ^(4,5)		12.08	12.12	0.00	0.00	499.51	0.04	0.10	73.39	3.0	969.7
	11/03/21		--	11.75	0.00	0.00	499.88	0.37	0.00	73.39	0.0	969.7
	11/17/21		--	11.55	0.00	0.00	500.08	0.20	0.00	73.39	0.0	969.7
	12/08/21		--	11.44	0.00	0.00	500.19	0.11	0.00	73.39	0.0	969.7
	12/22/21		10.76	10.77	0.01	0.01	500.87	0.68	0.13	73.52	0.3	970.0
	01/11/22		11.43	11.44	0.01	0.00	500.20	-0.67	0.16	73.68	2.9	972.9
01/26/22	--	11.73	0.00	-0.01	499.90	-0.30	0.00	73.68	0.0	972.9		
02/07/22	11.39	11.51	0.12	0.12	500.21	0.31	0.80	74.48	0.8	973.7		
Well Decommissioned on 02/07/22												
EW-4	10/12/22 ⁽⁴⁾	511.52	12.89	12.90	0.01	--	498.63	--	0.10	0.10	2.0	2.0
	11/14/22		--	10.97	0.00	-0.01	500.55	1.92	0.00	0.10	0.0	2.0
	12/19/22 ^(4,5)		12.08	12.30	0.22	0.22	499.39	-1.16	1.00	1.10	8.0	10.0
	01/18/23 ⁽⁴⁾		11.67	11.68	0.01	-0.21	499.85	0.46	0.50	1.60	4.5	14.5
	02/28/23 ⁽⁵⁾		--	11.60	0.00	-0.01	499.92	0.07	0.00	1.60	1.5	16.0
	03/27/23		--	11.20	0.00	0.00	500.32	0.40	1.60	3.20	4.9	20.9
	04/06/23		--	11.00	0.00	0.00	500.52	0.20	0.10	3.30	1.4	22.3
	05/09/23		10.60	10.62	0.02	0.02	500.92	0.40	0.30	3.60	3.0	25.3
	06/29/23		--	12.72	0.00	-0.02	498.80	-2.12	0.00	3.60	0.0	25.3
	07/27/23		--	12.81	0.00	0.00	498.71	-0.09	0.00	3.60	0.0	25.3
08/10/23	--	13.04	0.00	0.00	498.48	-0.23	0.00	3.60	0.0	25.3		
09/19/23	--	13.07	0.00	0.00	498.45	-0.03	0.00	3.60	0.0	25.3		
MW-1	03/30/21	512.70	12.78	12.79	0.01	--	499.92	--	0.00	0.00	0.0	0.0
	04/20/21		13.40	13.59	0.19	0.18	499.26	-0.66	0.00	0.00	0.0	0.0
	05/20/21 ⁽⁷⁾		13.61	13.95	0.34	0.15	499.01	-0.25	15.00	15.00	135.0	135.0
	06/08/21 ⁽⁴⁾		13.59	13.86	0.27	-0.07	499.05	0.04	2.00	17.00	2.0	137.0
	06/23/21 ⁽⁴⁾		13.55	13.83	0.28	0.01	499.08	0.04	0.40	17.40	2.1	139.1
	07/8/21 ^(4,5)		13.76	14.15	0.39	0.11	498.85	-0.24	2.10	19.50	0.8	139.9
	07/22/21		13.95	14.22	0.27	-0.12	498.69	-0.16	2.50	22.00	3.0	142.9
	08/05/21		14.02	14.27	0.25	-0.02	498.62	-0.07	2.00	24.00	2.0	144.9
	08/18/21		14.17	14.25	0.08	-0.17	498.51	-0.11	2.00	26.00	1.5	146.4
	09/01/21 ⁽⁹⁾		14.15	14.16	0.01	-0.07	498.55	0.04	0.10	26.10	1.0	147.4
	09/22/21 ⁽⁴⁾		13.56	13.57	0.01	0.00	499.14	0.59	0.10	26.20	1.0	148.4
	10/06/21		--	13.18	0.00	-0.01	499.52	0.38	0.00	26.20	0.0	148.4
	10/20/21		--	13.23	0.00	0.00	499.47	-0.05	0.00	26.20	0.0	148.4
	11/03/21		--	12.80	0.00	0.00	499.90	0.43	0.00	26.20	0.0	148.4
	11/17/21		--	12.39	0.00	0.00	500.31	0.41	0.00	26.20	0.0	148.4
	12/08/21		--	12.47	0.00	0.00	500.23	-0.08	0.00	26.20	0.0	148.4
	12/22/21		--	11.61	0.00	0.00	501.09	0.86	0.00	26.20	0.0	148.4
	01/11/22		--	11.82	0.00	0.00	500.88	-0.21	0.00	26.20	0.0	148.4
	01/26/22		--	12.56	0.00	0.00	500.14	-0.74	0.00	26.20	0.0	148.4
	02/07/22		--	11.88	0.00	0.00	500.82	0.68	0.00	26.20	0.0	148.4



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Well ID	Date Measured	TOC Elevation (ft amsl)	Depth to LPH (ft btoc)	Depth to Water (ft btoc)	LPH Thickness (ft)	Thickness Change (ft)	Groundwater Elevation ⁽¹⁾ (ft amsl)	Elevation Change (ft)	Estimated LPH Removed (gal)	Cumulative LPH Removed (gal)	Estimated Water Removed (gal)	Cumulative Water Removed (gal)	
MW-1 Cont.	03/23/22	512.70	12.97	13.00	0.03	0.03	499.72	-1.10	0.00	26.20	0.0	148.4	
	06/28/22 ^(4,5)		13.14	13.16	0.02	-0.01	499.56	-0.17	0.10	26.30	2.0	150.4	
	08/11/22		--	13.75	0.00+	-0.02	498.95	-0.61	0.11	26.41	0.5	150.9	
	08/25/22 ⁽⁴⁾		13.97	14.00	0.03	0.03	498.72	-0.23	0.30	26.71	2.0	152.9	
	09/08/22 ⁽⁴⁾		13.88	13.90	0.02	-0.01	498.82	0.09	0.50	27.21	3.25	156.2	
	10/12/22 ⁽⁴⁾		13.07	13.11	0.04	0.02	499.62	0.81	0.50	27.71	3.0	159.2	
	11/14/22		12.37	12.39	0.02	-0.02	500.33	0.70	0.50	28.21	3.0	162.2	
	12/19/22 ⁽⁹⁾		--	13.17	0.00	-0.02	499.53	-0.80	0.00	28.21	1.0	163.2	
	01/18/23		--	12.68	0.00	0.00	500.02	0.49	0.00	28.21	0.0	163.2	
	02/28/23		--	11.90	0.00	0.00	500.80	0.78	0.00	28.21	0.0	163.2	
	03/27/23		--	11.59	0.00	0.00	501.11	0.31	0.00	28.21	0.0	163.2	
	04/06/23		--	11.64	0.00	0.00	501.06	-0.05	0.00	28.21	0.0	163.2	
	05/09/23		--	12.69	0.00	0.00	500.01	-1.05	0.00	28.21	0.0	163.2	
	06/29/23		--	12.75	0.00	0.00	499.95	-0.06	0.00	28.21	0.0	163.2	
	07/27/23		--	14.04	Sheen	0.00	0.00	498.66	-1.29	0.00	28.21	0.25	163.4
	08/11/23		14.18	14.25	0.07	0.00	498.50	-0.16	0.10	28.31	0.90	164.3	
	09/19/23		14.23	14.25	0.02	0.00	498.47	-0.04	0.05	28.36	0.60	164.9	
MW-2	03/30/21	511.29	11.42	11.93	0.51	--	499.75	--	0.00	0.00	0.0	0.0	
	04/20/21 ^(4,5)		11.88	12.60	0.72	0.21	499.24	-0.51	3.25	3.25	5.0	5.0	
	05/20/21 ⁽⁷⁾		--	12.30	0.00	-0.72	498.99	-0.25	15.53	18.78	135.0	140.0	
	06/08/21		--	12.27	0.00	0.00	499.02	0.03	0.00	18.78	0.0	140.0	
	06/23/21 ⁽⁴⁾		12.15	12.16	0.01	0.01	499.14	0.12	0.07	18.85	0.5	140.5	
	07/08/21 ⁽⁴⁾		12.36	12.49	0.13	0.12	498.90	-0.24	0.80	19.65	1.6	142.1	
	07/22/21 ⁽⁴⁾		12.50	12.67	0.17	0.04	498.75	-0.15	1.50	21.15	3.0	145.1	
	08/05/21		12.54	12.76	0.22	0.05	498.70	-0.05	1.00	22.15	3.0	148.1	
	08/18/21		12.70	12.95	0.25	0.03	498.53	-0.17	0.75	22.90	2.0	150.1	
	09/01/21 ^(4,5)		12.64	12.85	0.21	-0.04	498.60	0.07	0.50	23.40	2.0	152.1	
	09/22/21		12.09	12.16	0.07	-0.14	499.18	0.58	0.75	24.15	3.0	155.1	
	10/06/21		--	11.84	0.00	-0.07	499.45	0.27	0.00	24.15	0.0	155.1	
	10/20/21		--	11.80	0.00	0.00	499.49	0.04	0.00	24.15	0.0	155.1	
	11/03/21		--	11.51	0.00	0.00	499.78	0.29	0.00	24.15	0.0	155.1	
	11/17/21		--	11.17	0.00	0.00	500.12	0.34	0.00	24.15	0.0	155.1	
	12/08/21		--	11.12	0.00	0.00	500.17	0.05	0.00	24.15	0.0	155.1	
	12/22/21		10.50	10.51	0.01	0.01	500.79	0.62	0.07	24.22	0.0	155.1	
	01/11/22		--	11.40	0.00	-0.01	499.89	-0.90	0.00	24.22	0.3	155.4	
	01/26/22		--	11.49	0.00	0.00	499.80	-0.09	0.00	24.22	0.0	155.4	
	02/07/22		--	11.47	0.00	0.00	499.82	0.02	0.13	24.35	0.3	155.7	
	03/23/22		11.75	11.76	0.01	0.01	499.54	-0.28	0.00	24.35	0.0	155.7	
	06/28/22		12.12	12.14	0.02	0.01	499.17	-0.37	0.10	24.45	2.0	157.7	
	08/11/22 ⁽⁴⁾		12.40	12.42	0.02	0.00	498.89	-0.28	0.23	24.68	3.2	160.9	
	08/25/22 ⁽⁹⁾		--	12.70	0.00	-0.02	498.59	-0.30	0.20	24.88	0.5	161.4	
	09/08/22 ^(4,5)		12.55	12.56	0.01	0.01	498.74	0.15	0.10	24.98	3.0	164.4	
	10/12/22 ⁽⁴⁾		12.77	12.84	0.07	0.06	498.50	-0.23	0.25	25.23	3.0	167.4	
	11/14/22		10.93	10.95	0.02	-0.05	500.36	1.85	0.25	25.48	2.5	169.9	
	12/19/22		--	11.95	0.00	-0.02	499.34	-1.02	0.13	25.61	0.5	170.4	
	01/18/23		--	11.55	0.00	0.00	499.74	0.40	0.00	25.61	0.5	170.9	
	02/28/23		11.33	11.34	0.01	0.01	499.96	0.22	0.10	25.71	1.3	172.1	
	03/27/23		--	11.02	0.00	-0.01	500.27	0.31	0.10	25.81	1.4	173.5	
	04/06/23		--	10.81	0.00	0.00	500.48	0.21	0.00	25.81	0.5	174.0	
	05/09/23		--	11.75	0.00	0.00	499.54	-0.94	0.00	25.81	0.5	174.5	
06/29/23	--	12.33	0.00	0.00	498.96	-0.58	0.00	25.81	0.5	175.0			
07/27/23	--	12.71	0.00	0.00	498.58	-0.38	0.00	25.81	0.00	175.0			
08/10/23	12.86	12.91	0.05	0.00	498.42	-0.16	0.25	26.06	2.25	177.3			
08/11/23	12.86	12.91	0.05	0.00	498.42	0.00	0.05	26.11	0.45	177.7			
09/19/23	12.98	13.04	0.06	0.00	498.30	-0.12	0.05	26.16	1.20	178.9			
MW-5	03/30/21	509.10	--	9.56	0.00	--	499.54	--	0.00	0.00	0.0	0.0	
	04/20/21		--	10.13	0.00	0.00	498.97	-0.57	0.00	0.00	0.0	0.0	
	05/20/21		--	10.32	0.00	0.00	498.78	-0.19	0.00	0.00	0.0	0.0	
	06/08/21		--	10.31	0.00	0.00	498.79	0.01	0.00	0.00	0.0	0.0	
	06/23/21		--	10.29	0.00	0.00	498.81	0.02	0.00	0.00	0.0	0.0	
	07/08/21		--	10.53	0.00	0.00	498.57	-0.24	0.00	0.00	0.0	0.0	
	07/22/21		--	10.69	0.00	0.00	498.41	-0.16	0.00	0.00	0.0	0.0	
	08/05/21 ⁽⁴⁾		10.74	10.76	0.02	0.02	498.36	-0.05	0.10	0.10	0.5	0.5	
	08/18/21 ⁽⁴⁾		10.87	11.10	0.23	0.21	498.18	-0.18	0.75	0.85	2.5	3.0	
	09/01/21 ⁽⁴⁾		10.76	10.77	0.01	-0.22	498.34	0.16	0.10	0.95	1.0	4.0	
	09/22/21		--	10.27	0.00	-0.01	498.83	0.49	0.00	0.95	0.9	4.9	
	10/06/21		--	9.93	0.00	0.00	499.17	0.34	0.00	0.95	0.0	4.9	
	10/20/21		--	9.95	0.00	0.00	499.15	-0.02	0.00	0.95	0.0	4.9	
	11/03/21		--	9.56	0.00	0.00	499.54	0.39	0.00	0.95	0.0	4.9	
11/17/21	--	9.37	0.00	0.00	499.73	0.19	0.00	0.95	0.0	4.9			
12/08/21	--	9.25	0.00	0.00	499.85	0.12	0.00	0.95	0.0	4.9			
12/22/21	--	8.45	0.00	0.00	500.65	0.80	0.00	0.95	0.0	4.9			



Table 1
United Pacific #5468
Summary of LPH Removal
Springfield, Oregon
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Well ID	Date Measured	TOC Elevation (ft amsl)	Depth to LPH (ft btoc)	Depth to Water (ft btoc)	LPH Thickness (ft)	Thickness Change (ft)	Groundwater Elevation ⁽¹⁾ (ft amsl)	Elevation Change (ft)	Estimated LPH Removed (gal)	Cumulative LPH Removed (gal)	Estimated Water Removed (gal)	Cumulative Water Removed (gal)
MW-5 Cont.	01/11/22	509.10	--	8.81	0.00	0.00	500.29	-0.36	0.00	0.95	0.0	4.9
	01/26/22		--	9.14	0.00	0.00	499.96	-0.33	0.00	0.95	0.0	4.9
	02/07/22		--	8.84	0.00	0.00	500.26	0.30	0.00	0.95	0.0	4.9
	03/23/22		--	9.50	0.00	0.00	499.60	-0.66	0.00	0.95	0.0	4.9
	06/29/22		--	10.02	0.00	0.00	499.08	-0.52	0.00	0.95	2.9	7.8
	08/11/22 ^(4,5)		10.41	10.50	0.09	0.09	498.67	-0.41	0.10	1.05	2.0	9.8
	08/25/22		10.63	10.73	0.10	0.01	498.45	-0.22	0.75	1.80	0.75	10.6
	09/08/22 ⁽⁴⁾		10.57	10.58	0.01	-0.09	498.53	0.08	0.30	2.10	3.5	14.1
	10/12/22 ⁽⁴⁾		11.68	11.75	0.07	0.06	497.40	-1.12	1.00	3.10	5.0	19.1
	11/14/22		--	9.34	0.00	-0.07	499.76	2.36	0.50	3.60	0.0	19.1
	12/19/22 ⁽⁴⁾		--	9.82	0.00	0.00	499.28	-0.48	0.10	3.70	2.0	21.1
	01/18/23		--	9.44	0.00	0.00	499.66	0.38	0.25	3.95	1.0	22.1
	02/28/23 ⁽⁴⁾		9.22	9.23	0.01	0.01	499.88	0.22	5.90	9.85	0.6	22.7
	03/27/23		--	9.12	0.00	-0.01	499.98	0.10	0.00	9.85	1.0	23.7
	04/06/23		--	8.66	0.00	0.00	500.44	0.46	0.13	9.98	1.5	25.2
	05/09/23		--	9.55	0.00	0.00	499.55	-0.89	0.10	10.08	1.0	26.2
	06/29/23		10.50	10.56	0.06	0.06	498.59	-0.96	0.79	10.87	0.3	26.4
	07/27/23		--	11.89	0.00	-0.06	497.21	-1.38	0.00	10.87	0.0	26.4
	08/10/23		10.90	10.97	0.07	0.07	498.18	0.97	0.05	10.92	0.95	27.4
09/19/23	--	11.98	Sheen	-0.07	497.12	-1.06	0.00	10.92	0.35	27.7		
MW-6	03/30/21 ^(6,5)	510.51	10.50	12.15	1.65	--	499.62	--	6.00	6.00	1.0	1.0
	04/20/21 ⁽⁴⁾		11.31	12.04	0.73	-0.92	499.03	-0.59	4.00	10.00	6.0	7.0
	05/20/21 ⁽⁷⁾		11.60	12.22	0.62	-0.11	498.76	-0.26	17.24	27.24	135.0	142.0
	06/08/21 ⁽⁴⁾		11.70	11.72	0.02	-0.60	498.81	0.04	2.08	29.32	4.0	146.0
	06/23/21 ⁽⁴⁾		11.60	11.62	0.02	0.00	498.91	0.10	1.65	30.97	0.5	146.5
	07/08/21		--	11.91	0.00	-0.02	498.60	-0.31	2.10	33.07	2.1	148.6
	07/22/21 ⁽⁴⁾		11.92	12.18	0.26	0.26	498.53	-0.07	3.00	36.07	3.5	152.1
	08/05/21 ⁽⁴⁾		11.88	12.56	0.68	0.42	498.47	-0.06	3.50	39.57	3.5	155.6
	08/18/21 ⁽⁴⁾		11.95	12.75	0.80	0.12	498.37	-0.10	3.50	43.07	2.0	157.6
	09/1/21 ⁽⁴⁾		11.98	12.58	0.60	-0.20	498.39	0.02	3.25	46.32	1.0	158.6
	09/22/21 ⁽⁴⁾		11.47	11.88	0.41	-0.19	498.94	0.55	5.20	51.52	6.0	164.6
	10/06/21		--	11.04	0.00	-0.41	499.47	0.53	0.00	51.52	0.0	164.6
	10/20/21 ⁽⁴⁾		11.05	11.85	0.00	0.00	498.66	-0.81	3.50	55.02	4.0	168.6
	11/3/21 ⁽⁴⁾		10.88	10.90	0.02	0.02	499.63	0.97	1.45	56.47	0.7	169.3
	11/17/21		--	10.61	0.00	-0.02	499.90	0.27	0.13	56.60	0.0	169.3
	12/08/21		--	10.53	0.00	0.00	499.98	0.08	0.26	56.86	0.0	169.3
	12/22/21		9.91	9.92	0.01	0.01	500.60	0.62	0.13	56.99	0.5	169.8
	01/11/22 ⁽⁴⁾		10.08	10.13	0.05	0.04	500.42	-0.18	1.98	58.97	4.0	173.8
	01/26/22 ⁽⁴⁾		10.88	10.92	0.04	-0.01	499.62	-0.80	0.81	59.78	2.1	175.9
	02/07/22 ⁽⁴⁾		10.12	10.26	0.14	0.10	500.36	0.74	2.50	62.28	3.5	179.4
	03/23/22 ⁽⁴⁾		10.74	11.15	0.41	0.27	499.67	-0.68	1.84	64.12	2.1	181.5
	06/28/22 ⁽⁴⁾		11.17	11.86	0.69	0.28	499.18	-0.50	3.00	67.12	6.0	187.5
	08/11/22 ⁽⁴⁾		11.68	11.95	0.27	-0.42	498.77	-0.41	2.50	69.62	3.5	191.0
	08/25/22		--	12.12	0.00	-0.27	498.39	-0.38	1.00	70.62	0.0	191.0
	09/08/22 ⁽⁴⁾		11.85	11.92	0.07	0.07	498.64	0.25	2.50	73.12	3.5	194.5
	10/12/22 ⁽⁴⁾		11.99	12.12	0.13	0.06	498.49	-0.15	2.50	75.62	6.0	200.5
	11/24/22		10.55	10.71	0.16	0.03	499.92	1.43	1.25	76.87	3.0	203.5
	12/19/22		11.09	11.64	0.55	0.39	499.29	-0.63	3.00	79.87	3.5	207.0
	01/18/23 ⁽⁴⁾		10.73	10.75	0.02	-0.53	499.78	0.48	2.00	81.87	5.0	212.0
	02/28/23 ⁽⁴⁾		10.52	10.58	0.06	0.04	499.98	0.20	3.00	84.87	0.3	212.3
	03/27/23		10.27	10.34	0.07	0.01	500.22	0.25	1.20	86.07	6.0	218.3
	04/06/23		9.95	10.00	0.05	-0.02	500.55	0.32	1.00	87.07	7.5	225.8
	05/09/23 ⁽⁴⁾		11.18	11.29	0.11	0.06	499.30	-1.24	0.50	87.57	5.0	230.8
06/29/23	11.78	11.89	0.11	0.00	498.70	-0.60	0.79	88.36	0.3	231.1		
07/27/23	--	12.11	Sheen	-0.11	498.40	-0.30	1.00	89.36	0.0	231.1		
08/10/23	12.28	12.45	0.17	0.17	498.19	-0.21	0.0	89.36	0.0	231.1		
09/19/23	12.26	12.30	0.04	-0.13	498.24	0.05	1.00	90.36	0.25	231.3		
									EW-1 Cumulative	20.85	893.50	
									EW-2 Cumulative	101.76	1181.82	
									EW-3 Cumulative	74.48	973.68	
									EW-4 Cumulative	3.60	25.30	
									EW-1R Cumulative	1.55	20.70	
									EW-2R Cumulative	0.83	13.00	
									MW-1 Cumulative	28.36	164.93	
									MW-2 Cumulative	26.16	178.94	
									MW-5 Cumulative	10.92	27.71	
									MW-6 Cumulative	90.36	231.33	
									Cumulative Removed From Site Wells	358.86	3,710.9	



Table 1
United Pacific #5468
Summary of LPH Removal
Springfield, Oregon
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Well ID	Date Measured	TOC Elevation (ft amsl)	Depth to LPH (ft btoc)	Depth to Water (ft btoc)	LPH Thickness (ft)	Thickness Change (ft)	Groundwater Elevation ⁽¹⁾ (ft amsl)	Elevation Change (ft)	Estimated LPH Removed (gal)	Cumulative LPH Removed (gal)	Estimated Water Removed (gal)	Cumulative Water Removed (gal)
<p>Notes:</p> <p>(1): groundwater elevation corrected for the presence of free-product using the following calculation: casing elevation minus depth to water plus the product thickness times its density (0.765).</p> <p>(2): recorded value is gallons of LPH and water removed</p> <p>(3): overpurging conducted using a vacuum truck</p> <p>(4): LPH removal by manual bailing</p> <p>(5): LPH removal using downhole skimmer initiated</p> <p>(6): LPH removal using peristaltic pump</p> <p>(7): LPH removal using vacuum truck</p> <p>(8): well sampled using low-flow purge methods</p> <p>(9): downhole skimmer removed</p> <p>--: not detected / not applicable / not surveyed</p> <p>*: thickness measurements made in reference to total depth of premium UST = 12.20 btocp</p> <p>**: water volume estimates based on Containment Solutions® 12,000 gallon fiberglass double wall UST volume chart</p> <p>†: LPH accumulation in skimmer</p> <p>amsl: above mean sea level</p> <p>btoc: below top of casing</p> <p>btocp: below top of fill port</p> <p>ft: feet</p> <p>gal: gallons</p> <p>LPH: liquid phase hydrocarbons</p> <p>Sheen: LPH sheen observed</p> <p>TOC: top of casing</p> <p>TOFP: top of fill port</p>												



Table 2
Summary of Groundwater Monitoring Data
United Pacific #5468
Springfield, Oregon
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WELL ID	WELL STATUS	SAMPLE DATE	ANALYTICAL PARAMETERS											WATER QUALITY PARAMETERS						MONITORING PARAMETERS				WELL ELEVATION			WELL				
			TPH-Ox (µg/L)	TPH-Dx (µg/L)	TPH-Gx (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Naph (µg/L)	EDB* (µg/L)	EDC (µg/L)	Lead (µg/L)	DO (mg/L)	ORP (mV)	Conductivity (µs/cm)	pH	Temp (°C)	Turbidity (NTU)	Fe ²⁺ (mg/L)	DTP (ft btoc)	DTW (ft btoc)	DTB (ft btoc)	PT (ft)	CASING (ft amsl)	GW (ft amsl)	GW Δ (ft amsl)	DIA (inches)	SCREEN (ft bgs)	
			NWTPH-Dx		NWTPH-Gx	EPA Method 8260D										EPA 7010															
MW-1 ⁽¹⁾	Active	09/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14.23	14.25	24.50	0.02	512.70	498.47	-1.48	4	5-25		
MW-2 ⁽¹⁾	Active	09/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.98	13.04	25.05	0.06	511.29	498.30	-0.66	4	5-25		
MW-3	Active	09/19/23	--	--	<100	<1.0	<2.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	<5.0	3.86	127.1	128.6	6.57	17.7	--	0.0	--	12.48	26.50	0.00	511.12	498.64	-0.47	4	5-25	
MW-4	Active	09/18/23	--	--	19,000	300	140	3.9	5,100	<5.0	130	<0.010	<1.0	<5.0	0.08	-148.2	569.0	6.93	17.7	--	1.0	--	11.29	24.14	0.00	509.78	498.49	-0.36	4	5-25	
MW-5 ⁽¹⁾	Active	09/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Sheen	11.98	22.70	0.00	509.10	497.12	-1.47	4	3.5-23.5		
MW-6 ⁽¹⁾	Active	09/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.26	12.30	25.32	0.04	510.51	498.24	-0.46	4	5-25		
MW-7	Active	09/19/23	--	--	7,100	510	210	180	1,200	<5.0	37	<0.010	<1.0	<5.0	0.10	-155.8	1165.0	6.92	19.1	--	8.0	--	13.34	25.00	0.00	511.65	498.31	-0.36	4	5-25	
MW-8	Active	09/18/23	--	--	<100	<1.0	<2.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	<5.0	0.48	137.4	347.7	6.65	19.7	--	0.0	--	12.51	18.00	0.00	509.75	497.24	-0.57	4	8-18	
MW-9	Active	09/18/23	--	--	<100	<1.0	<2.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	<5.0	2.79	160.4	267.5	6.01	20.2	--	0.0	--	11.54	17.26	0.00	509.89	498.35	-0.51	4	7-17	
MW-10	Active	09/18/23	--	--	<100	<1.0	<2.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	<5.0	0.20	130.5	559.0	6.47	19.3	--	0.0	--	13.08	19.95	0.00	511.13	498.05	-0.46	4	7-17	
MW-11	Active	09/19/23	--	--	<100	<1.0	<2.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	<5.0	0.85	121.4	340.7	6.76	17.7	--	0.0	--	12.69	19.91	0.00	511.69	499.00	-0.32	2	10-20	
EW-1R ⁽¹⁾	Active	09/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.30	12.45	23.00	0.15	510.86	498.52	-0.52	4	13-23		
EW-2R	Active	09/19/23	--	--	840	6.5	3.4	<1.0	140	<5.0	6.2	<0.010	<1.0	<5.0	0.10	-162.9	501.0	7.34	18.0	--	1.0	--	12.46	23.00	0.00	510.91	498.45	-0.29	4	13-23	
EW-4	Active	09/19/23	--	--	17,000	1,200	2,000	110	2,000	<5.0	48	0.023	<1.0	<5.0	0.28	-150.8	559.0	6.95	18.3	--	1.0	--	13.07	23.00	0.00	510.67	497.60	-0.35	4	13-23	
NW Obs.	Observation	09/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.15	15.20	0.00	--	--	--	4	5-15		
NE Obs.	Observation	09/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.26	14.95	0.00	--	--	--	4	5-15		
SE Obs.	Observation	09/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.87	14.90	0.00	--	--	--	4	5-15		
SW Obs.	Observation	09/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.13	13.50	0.00	--	--	--	4	5-15		
RBC: Ingestion/Inhalation from Tapwater ⁽²⁾			430	430	450	2.1	6,300	6.4	830	68	0.72	0.034	0.78	15	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
RBC: Volatilization to Outdoor Air ⁽³⁾			>S	>S	>S	14,000	>S	43,000	>S	1,500,000	16,000	790	9,000	nv	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
RBC: Volatilization to Indoor Air ⁽⁴⁾			1,700	1,700	520	12/650	150,000/160,000	31/420,000	3,300/200,000	3,200/1,600,000	50/83,000	1.5/--	18/--	--	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
RBC: Groundwater in Excavations ⁽⁵⁾			>S	>S	14,000	1,800	220,000	4,500	23,000	63,000	500	27	630	<S	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

Notes:

Results in **BOLD** indicate detections that exceed the ODEQ Risk-Based Concentrations (RBCs) for groundwater
(1): sample not collected due to liquid-phase hydrocarbons (LPH; free-product) present in well; groundwater elevation corrected for the presence of LPH using the following calculation: TOC elevation minus DTW plus the product thickness times its density (0.765)
(2): RBC for Groundwater - Ingestion and Inhalation from Tapwater, occupational receptor scenario (see ODEQ Table of RBCs - revised May 2018 amended June 2023)
(3): RBC for Groundwater - Volatilization to Outdoor Air, occupational receptor scenario (see ODEQ Table of RBCs - revised May 2018 amended June 2023)
(4): RBC for Groundwater - Volatilization to Indoor Air, Commercial scenario; Chronic/Acute screening values (see OQED Vapor Intrusion Risk-Based Concentration Table 1 - June 2023)
(5): RBC for Groundwater in Excavation, Contact to Construction and Excavation Workers
--: not analyzed / not measured / unknown
<: less than the laboratory method detection limit
>S: RBC exceeds the solubility limit
°C: degrees celsius
*: analyzed using SIM (selected ion monitoring)
µg/L: micrograms per liter
µs/cm: microsiemens per centimeter

Active: groundwater well currently used for monitoring
amsl: above mean sea level
bgs: below ground surface
BTEX: benzene, toluene, ethylbenzene, and total xylenes
btoc: below top of casing
DIA: casing diameter
DO: dissolved oxygen
DTB: depth to bottom
DTP: depth to product
DTW: depth to water
DTW Δ: Change in depth to water since last monitoring event
EDB: 1,2-dibromoethane
EDC: 1,2-dichloroethane
EPA: Environmental Protection Agency
Fe²⁺: ferrous iron
ft: feet
GW: groundwater
mg/L: milligrams per liter

mV: millivolts
na: not applicable
Naph: naphthalene
ND: not detected
NM: not measured
NTU: nephelometric turbidity units
nv: chemical is considered "non volatile" for purposes of the exposure calculations in this document
Observation: Observation well located within tank cavity used for periodic gauging
ODEQ: Oregon Department of Environmental Quality
ORP: oxidation reduction potential
pH: potential hydrogen
PT: free-product thickness
RBC: Risked Based Concentration established by the Oregon Department of Environmental Quality (ODEQ)
Sheen: sheen observed in well
Temp: temperature
TPH-Dx: total diesel-range petroleum hydrocarbons, analyzed by Northwest Method NWTPH-Dx
TPH-Gx: total gasoline-range petroleum hydrocarbons, analyzed by Northwest Method NWTPH-Gx
TPH-Ox: total oil-range petroleum hydrocarbons, analyzed by Northwest Method NWTPH-Ox



Table 3
Summary of Historical Groundwater Monitoring Data
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Springfield, Oregon
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WELL ID	WELL STATUS	SAMPLE DATE	ANALYTICAL PARAMETERS													MONITORING PARAMETERS			WELL ELEVATION		
			TPH-Ox (µg/L)	TPH-Dx (µg/L)	TPH-Gx (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Naph (µg/L)	EDB (µg/L)	EDC (µg/L)	Other VOCs	DTP ⁽¹⁾ (ft btoc)	DTW (ft btoc)	PT (ft)	CASING ⁽²⁾ (ft amsl)	GW ⁽³⁾ (ft amsl)	GW Δ (ft amsl)	
			NWTPH-Gx		EPA Method 8260D																
MW-1	Active	03/30/21	--	--	--	--	--	--	--	--	--	--	--	--	12.78	12.79	0.01	512.70	499.92	--	
		06/23/21	--	--	--	--	--	--	--	--	--	--	--	--	13.55	13.83	0.28	499.08	499.08	-0.83	
		09/23/21	--	--	--	--	--	--	--	--	--	--	--	--	13.56	13.57	0.01	499.14	499.14	0.05	
		12/22/21	--	--	3,900	260 E	67	<1.0	230	<5.0	<5.0	<0.01	<1.0	(9)	ND	11.61	0.00	501.09	501.09	1.95	
		01/11/22 ⁽¹⁰⁾	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		03/23/22	--	--	--	--	--	--	--	--	--	--	--	--	12.97	13.00	0.03	499.72	499.72	-1.37	
		06/28/22	--	--	--	--	--	--	--	--	--	--	--	--	13.14	13.16	0.02	499.56	499.56	-0.17	
		10/12/22	--	--	--	--	--	--	--	--	--	--	--	--	13.07	13.11	0.04	499.62	499.62	0.06	
		12/20/22	--	--	2,100	1.1	2.6	<1.0	250	<5.0	<5.0	<0.01	<1.0	(9)	ND	13.17	0.00	499.53	499.53	-0.09	
		04/06/23	--	--	--	--	--	--	--	--	--	--	--	--	ND	11.64	0.00	501.06	501.06	1.53	
		06/29/23	--	--	3,200	62	510	65	440	<5.0	19	0.014	<1.0	(9)	ND	12.75	0.00	499.95	499.95	-1.11	
		09/18/23	--	--	--	--	--	--	--	--	--	--	--	--	14.23	14.25	0.02	498.47	498.47	-1.48	
		MW-2	Active	03/30/21	--	--	--	--	--	--	--	--	--	--	--	11.42	11.93	0.51	511.29	499.75	--
06/23/21	--			--	--	--	--	--	--	--	--	--	--	12.15	12.16	0.01	499.14	499.14	-0.61		
09/23/21	--			--	--	--	--	--	--	--	--	--	--	12.09	12.16	0.07	499.18	499.18	0.05		
12/22/21	--			--	--	--	--	--	--	--	--	--	--	10.50	10.51	0.01	500.79	500.79	1.60		
01/11/22 ⁽¹⁰⁾	--			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
03/23/22	--			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	499.54	-1.25
06/28/22	--			--	--	--	--	--	--	--	--	--	--	--	12.12	12.14	0.02	499.17	499.17	-0.37	
10/12/22	--			--	--	--	--	--	--	--	--	--	--	--	12.77	12.84	0.07	498.50	498.50	-0.67	
12/20/22	--			--	26,000	1,000	2,600	510	2,300	<5.0	89	<0.01	<1.0	(9)	ND	11.95	0.00	499.34	499.34	0.84	
04/06/23	--			--	--	--	--	--	--	--	--	--	--	--	ND	10.81	0.00	500.48	500.48	1.14	
06/29/23	--			--	31,000	780	5,400	760	4,400	<5.0	70	0.016	<1.0	(9)	ND	12.33	0.00	498.96	498.96	-1.52	
09/18/23	--			--	--	--	--	--	--	--	--	--	--	--	12.98	13.04	0.06	498.30	498.30	-0.66	
MW-3	Active			03/30/21	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	ND	11.32	0.00	511.12	499.80
		06/23/21	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	ND	11.89	0.00	499.23	499.23	-0.57	
		09/23/21	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	ND	11.86	0.00	499.26	499.26	0.03	
		12/22/21	--	--	110	<20	<1.0	<1.0	2.3	<5.0	<5.0	<0.01	<1.0	(8)	ND	10.33	0.00	500.79	500.79	1.53	
		01/11/22 ⁽¹⁰⁾	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		03/23/22	--	--	260	36	32	1.9	26	<5.0	<5.0	<0.01	<1.0	(9)	ND	11.31	0.00	499.81	499.81	-0.98	
		06/28/22	--	--	220	<1.0	<1.0	<1.0	32	<5.0	<5.0	<0.01	<1.0	(9)	ND	11.77	0.00	499.35	499.35	-0.46	
		10/12/22	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	ND	12.33	0.00	498.79	498.79	-0.56	
		12/20/22	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	ND	11.55	0.00	499.57	499.57	0.78	
		04/06/23	--	--	<100	56	<1.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	(9)	ND	10.50	0.00	500.62	500.62	1.05	
		06/29/23	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	(8)	ND	12.01	0.00	499.11	499.11	-1.51	
		09/19/23	--	--	<100	<1.0	<2.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	--	ND	12.48	0.00	498.64	498.64	-0.47	
		MW-4	Active	03/30/21	--	--	180,000	3,000	25,000 E	3,100	18,000	<5.0	180	<0.01	<1.0	(9)	ND	10.17	0.00	509.78	499.61
06/23/21	--			--	190,000	3,000	25,000 E	3,000	17,000	<5.0	250	<0.01	<1.0	(9)	ND	10.17	0.00	509.78	499.61	--	
09/23/21	--			--	52,000	1,500	17,000	2,200	21,000	<5.0	500	<0.01	<1.0	(9)	ND	10.83	0.00	498.95	498.95	-0.66	
12/22/21	--			--	40,000	1,300	6,600	1,400	8,600	<5.0	520	<0.01	<1.0	(9)	ND	10.78	0.00	499.00	499.00	0.05	
01/11/22 ⁽¹⁰⁾	--			--	39,000	1,200	5,500	1,400	6,900	<5.0	620	<0.01	<1.0	(9)	ND	10.78	0.00	499.00	499.00	0.05	
03/23/22	--			--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	ND	9.11	0.00	500.67	500.67	1.67	
06/28/22	--			--	2,400	250	53	<1.0	160	<5.0	130	<0.01	<1.0	(9)	ND	10.11	0.00	499.67	499.67	-1.00	
10/12/22	--			--	37,000	560	1,400	<1.0	10,000	<5.0	130	<0.01	<1.0	(9)	ND	10.53	0.00	499.25	499.25	-0.42	
12/20/22	--			--	24,000	600	380	510	5,500	<5.0	78	<0.01	<1.0	(9)	ND	11.26	0.00	498.52	498.52	-0.73	
04/06/23	--			--	33,000	330	2,000	480	3,800	<5.0	380	<0.1	<1.0	(9)	ND	10.37	0.00	499.41	499.41	0.89	
06/29/23	--			--	4,400	82	<10	<1.0	1,500	<5.0	<5.0	<0.10	<1.0	(9)	ND	10.29	0.00	499.49	499.49	0.08	
09/19/23	--			--	4,000	67	190	33	890	<5.0	48	<0.010	<1.0	(9)	ND	10.93	0.00	498.85	498.85	-0.64	
09/19/23	--			--	19,000	300	140	3.9	5,100	<5.0	130	<0.010	<1.0	--	ND	11.29	0.00	498.49	498.49	-0.36	
MW-5	Active	03/30/21	--	--	250,000 E	3,900	34,000 E	3,500	23,000	<5.0	220	<0.01	<1.0	(9)	ND	9.56	0.00	509.10	499.54	--	
		06/23/21	--	--	58,000	4,400	24,000 E	2,500	17,000	<5.0	350	<0.01	<1.0	(9)	ND	10.29	0.00	498.81	498.81	-0.73	
		09/23/21	--	--	65,000	3,900	18,000 E	1,600	11,000	<5.0	450	<0.01	<1.0	(9)	ND	10.27	0.00	498.83	498.83	0.02	
		12/22/21	--	--	230,000	4,900	29,000 E	210	18,000	<5.0	310	<0.01	<1.0	(9)	ND	8.45	0.00	500.65	500.65	1.82	
		01/11/22 ⁽¹⁰⁾	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		03/23/22	--	--	110,000	4,000	14,000 E	1,800	15,000	<250	360	<0.5	<50	(9)	ND	9.50	0.00	499.60	499.60	-1.05	
		06/29/22	--	--	260,000 E	5,800	45,000 E	2,900	34,000 E	<5.0	320	<0.01	<1.0	(9)	ND	10.02	0.00	499.08	499.08	-0.52	
		10/12/22	--	--	--	--	--	--	--	--	--	--	--	--	11.68	11.75	0.07	497.40	497.40	-1.68	
		12/20/22	--	--	80,000	3,700	10,000	1,800	11,000	<50	270	<0.1	<1.0	(9)	ND	9.90	0.00	499.20	499.20	1.80	
		04/06/23 ⁽¹⁾	--	--	--	--	--	--	--	--	--	--	--	--	Sheen	8.66	0.00	500.44	500.44	1.24	
		06/29/23	--	--	--	--	--	--	--	--	--	--	--	--	10.50	10.56	0.06	498.59	498.59	-1.85	
		09/19/23	--	--	--	--	--	--	--	--	--	--	--	--	Sheen	11.98	0.00	497.12	497.12	-1.47	
		MW-6	Active	03/30/21	--	--	--	--	--	--	--	--	--	--	--	10.50	12.15	1.65	510.51	499.62	--
06/23/21	--			--	--	--	--	--	--	--	--	--	--	11.60	11.62	0.02	498.91	498.91	-0.72		
09/23/21	--			--	--	--	--	--	--	--	--	--	--	11.47	11.88	0.41	498.94	498.94	0.04		
12/22/21	--			--	--	--	--	--	--	--	--	--	--	9.91	9.92	0.01	500.60	500.60	1.65		
01/11/22 ⁽¹⁰⁾	--			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
03/23/22	--			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
06/28/22	--			--	--	--	--	--	--	--	--	--	--	--	11.17	11.86	0.69	499.18	499.18	-1.42	
10/12/22	--			--	--	--	--	--	--	--	--	--	--	--	11.99	12.12	0.13	498.49	498.49	-0.69	
12/20/22	--			--	--	--	--	--	--	--	--	--	--	--	11.09	11.64	0.55	499.29	499.29	0.80	
04/06/23 ⁽¹⁾	--			--	--	--	--	--	--	--	--	--	--	--	9.95	10.00	0.05	500.55	500.55	1.26	
06/29/23	--			--	--	--	--	--	--	--	--	--	--	--	11.78	11.89	0.11	498.70	498.70	-1.84	
09/19/23	--			--	--	--	--	--	--	--	--	--	--	--	12.26	12.30	0.04	498.24	498.24	-0.46	
MW-7	Active			03/30/21	--	--	260														

Table 3
Summary of Historical Groundwater Monitoring Data
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WELL ID	WELL STATUS	SAMPLE DATE	ANALYTICAL PARAMETERS													MONITORING PARAMETERS			WELL ELEVATION		
			TPH-Ox	TPH-Dx	TPH-Gx	B	T	E	X	MTBE	Naph	EDB	EDC	Other VOCs	DTP ⁽¹⁾	DTW	PT	CASING ⁽²⁾	GW ⁽³⁾	GW Δ	
			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(ft btoc)	(ft btoc)	(ft)	(ft amsl)	(ft amsl)	(ft amsl)	
MW-7 con't		06/28/22	--	--	17,000	1,100	3,900	320	1,100	<5.0	31	<0.01	<1.0	(9)	ND	12.56	0.00		499.09	-0.56	
		10/12/22	--	--	24,000	1,300	3,500	240	1,600	<5.0	9.7	<0.01	<1.0	(9)	ND	13.18	0.00		498.47	-0.62	
		12/20/22	--	--	5,000	710	890	120	490	<5.0	34	<0.01	<1.0	(9)	ND	12.33	0.00		499.32	0.85	
		04/06/23	--	--	--	--	--	--	--	--	--	--	--	--	ND	11.07	0.00		500.58	1.26	
		06/29/23	--	--	9,200	670	530	320	1,600	<5.0	33	<0.010	<1.0	(9)	ND	12.98	0.00		498.67	-1.91	
DUP-1		06/29/23	--	--	8,000	710	570	350	1,800	<5.0	23	<0.010	<1.0	(9)	--	--	--		--	--	
		09/19/23	--	--	7,100	510	210	180	1,200	<5.0	37	<0.010	<1.0	--	ND	13.34	0.00		498.31	-0.36	
MW-8	Active	12/19/22	--	--	<100	<1.0	7.6	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	ND	11.55	0.00	509.75	498.20	--	
		04/06/23	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	(8)	ND	9.96	0.00		499.79	1.59	
		04/06/23	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	(8)	--	--	--		--	--	
		06/29/23	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	(8)	ND	11.94	0.00		497.81	-1.98	
		09/18/23	--	--	<100	<1.0	<2.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	--	ND	12.51	0.00		497.24	-0.57	
MW-9	Active	12/19/22	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	ND	10.52	0.00	509.89	499.37	--	
		04/06/23	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	(8)	ND	9.30	0.00		500.59	1.22	
		06/29/23	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	(8)	ND	11.03	0.00		498.86	-1.73	
		09/18/23	--	--	<100	<1.0	<2.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	--	ND	11.54	0.00		498.35	-0.51	
MW-10	Active	12/20/22	--	--	120	1.9	11	2.6	13	<5.0	<5.0	<0.01	<1.0	(9)	ND	9.59	0.00	511.13	501.54	--	
		12/20/22	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(9)	--	--	--		--	--	
		04/06/23	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	(8)	ND	10.50	0.00		500.63	-0.91	
		06/29/23	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	(8)	ND	12.62	0.00		498.51	-2.12	
		09/18/23	--	--	<100	<1.0	<2.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	--	ND	13.08	0.00		498.05	-0.46	
MW-11	Active	12/20/22	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	ND	11.70	0.00	511.69	499.99	--	
		04/06/23	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	(8)	ND	10.59	0.00		501.10	1.11	
		06/29/23	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	(8)	ND	12.37	0.00		499.32	-1.78	
		09/19/23	--	--	<100	<1.0	<2.0	<1.0	<2.0	<5.0	<5.0	<0.010	<1.0	--	ND	12.69	0.00		499.00	-0.32	
EW-1	Active	03/30/21	--	--	--	--	--	--	--	--	--	--	--	--	11.05	11.14	0.09	510.97	499.90	--	
		06/23/21	--	--	156,000	11,000	66,000 E	5,600	36,000	<5.0	650	<0.01	<1.0	(9)	ND	11.74	0.00		499.23	-0.67	
		09/23/21	--	--	21,000	490	4,200	550	3,200	<5.0	110	<0.01	<1.0	(9)	ND	11.72	0.00		499.25	0.02	
		12/22/21	--	--	40,000	560	2,700 E	580	<20	<50	87	<0.10	<10	(9)	ND	9.90	0.00		501.07	1.82	
		12/22/21	--	--	40,000	600	2,900 E	620	<20	<50	22	<0.10	<10	(9)	--	--	--		--	--	
		01/11/22 ⁽¹⁰⁾	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--	--	
EW-1R ⁽¹²⁾	Active	10/12/22	--	--	--	--	--	--	--	--	--	--	--	--	12.17	12.19	0.02	510.86	498.69	--	
		12/20/22	--	--	--	--	--	--	--	--	--	--	--	--	ND	11.32	0.00		499.54	0.85	
		04/06/23 ⁽¹¹⁾	--	--	--	--	--	--	--	--	--	--	--	--	10.10	10.11	0.01		500.75	1.21	
		06/29/23	--	--	25,000	1,600	3,500	900	4,800	<5.0	17	<0.010	<1.0	(9)	ND	11.82	0.00		499.04	-1.71	
		09/18/23	--	--	--	--	--	--	--	--	--	--	--	--	12.30	12.45	0.15		498.52	-0.52	
EW-2	Active	03/30/21	--	--	--	--	--	--	--	--	--	--	--	--	11.20	11.28	0.08	510.90	499.68	--	
		06/23/21	--	--	--	--	--	--	--	--	--	--	--	--	11.88	12.07	0.19		498.98	-0.71	
		09/23/21	--	--	--	--	--	--	--	--	--	--	--	--	11.84	11.87	0.03		499.05	0.08	
		12/22/21	--	--	--	--	--	--	--	--	--	--	--	--	10.20	10.22	0.02		500.70	1.64	
		01/11/22 ⁽¹⁰⁾	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--	--	
		03/23/22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--	--	
EW-2R ⁽¹²⁾	Active	10/12/22	--	--	--	--	--	--	--	--	--	--	--	--	12.32	12.34	0.02	510.91	498.59	--	
		12/20/22	--	--	--	--	--	--	--	--	--	--	--	--	11.53	11.54	0.01		499.38	0.79	
		04/06/23	--	--	--	--	--	--	--	--	--	--	--	--	ND	10.32	0.00		500.59	1.21	
		06/29/23	--	--	5,200	340	1,200	180	710	<5.0	27	<0.010	<1.0	(9)	ND	12.17	0.00		498.74	-1.85	
		09/19/23	--	--	840	6.5	3.4	<1.0	140	<5.0	6.2	<0.010	<1.0	--	ND	12.46	0.00		498.45	-0.29	
EW-3	Active	03/30/21	--	--	--	--	--	--	--	--	--	--	--	--	11.68	11.90	0.22	511.63	499.90	--	
		06/23/21	--	--	--	--	--	--	--	--	--	--	--	--	12.40	12.41	0.01		499.23	-0.67	
		09/23/21	--	--	--	--	--	--	--	--	--	--	--	--	12.36	12.45	0.09		499.25	0.02	
		12/22/21	--	--	--	--	--	--	--	--	--	--	--	--	10.76	10.77	0.01		500.87	1.62	
		01/11/22 ⁽¹⁰⁾	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--	--	
		03/23/22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--	--	
EW-4 ⁽¹²⁾	Active	10/12/22	--	--	--	--	--	--	--	--	--	--	--	--	12.89	12.90	0.01	510.67	497.78	--	
		12/20/22	--	--	--	--	--	--	--	--	--	--	--	--	12.08	12.30	0.22		498.54	0.76	
		04/06/23 ⁽¹¹⁾	--	--	--	--	--	--	--	--	--	--	--	--	Sheen	11.00	0.00		499.67	1.13	
		06/29/23	--	--	40,000	2,700	8,900	910	5,900	<5.0	89	<0.010	<1.0	(9)	ND	12.72	0.00		497.95	-1.72	
		09/19/23	--	--	17,000	1,200	2,000	110	2,000	<5.0	48	0.023	<1.0	(8)	ND	13.07	0.00		497.60	-0.35	
QA/QC Samples																					
EB-1		03/30/21	--	--	<100	<1.0	1.1	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	--	--	--	--	--	--	
		06/23/21	--	--	<100	<1.0	10	1.3	8.1	<5.0	<5.0	<0.01	<1.0	(9)	--	--	--	--	--	--	
		09/23/21	--	--	<100	<1.0	2.2	<1.0	2.3	<5.0	<5.0	<0.01	<1.0	(9)	--	--	--	--	--	--	
		12/22/21	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(9)	--	--	--	--	--	--	
		03/23/22	--	--	<100	<1.1	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	--	--	--	--	--	--	
		06/28/22	--	--	<100	<1.1	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	--	--	--	--	--	--	
		10/12/22	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	--	--	--	--	--	--	
		12/19/22	--	--	<100	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<0.01	<1.0	(8)	--						

Table 3
Summary of Historical Groundwater Monitoring Data
United Pacific #5468
Springfield, Oregon
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WELL ID	WELL STATUS	SAMPLE DATE	ANALYTICAL PARAMETERS											MONITORING PARAMETERS			WELL ELEVATION			
			TPH-Ox (µg/L)	TPH-Dx (µg/L)	TPH-Gx (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Naph (µg/L)	EDB (µg/L)	EDC (µg/L)	Other VOCs	DTP ⁽¹⁾ (ft btoc)	DTW (ft btoc)	PT (ft)	CASING ⁽²⁾ (ft amsl)	GW ⁽³⁾ (ft amsl)	GW Δ (ft amsl)
			NWTPH-Dx		NWTPH-Gx		EPA Method 8260D													
<p>Notes:</p> <p>Results in BOLD indicate detections that exceed ODEQ Risk-Based Concentrations (RBCs) for groundwater</p> <p>(1): wells containing free-product were not sampled</p> <p>(2): top of casing elevations surveyed on 12/09/20 and 03/22/21.</p> <p>(3): groundwater elevation corrected for the presence of free-product using the following calculation: casing elevation minus depth to water plus the product thickness times its density (0.765). An average density of 0.765 (based on published literature) is used in the calculation.</p> <p>(4): RBC for Groundwater - Injection and Inhalation from Tapwater, occupational receptor scenario (see ODEQ Table of RBCs - revised May 2018 amended June 2023)</p> <p>(5): RBC for Groundwater - Volatilization to Outdoor Air, occupational receptor scenario (see ODEQ Table of RBCs - revised May 2018 amended June 2023)</p> <p>(6): RBC for Groundwater - Volatilization to Indoor Air, Commercial scenario. Chronic/Acute screening values (see ODEQ Vapor Intrusion Risk-Based Concentration Table 1 - June 2023)</p> <p>(7): RBC for Groundwater in Excavation, Contact to Construction and Excavation Workers</p> <p>(8): No other VOCs detected in sample</p> <p>(9): Other VOCs detected in sample; refer to Table 4 for other VOCs detected</p> <p>(10): Confirmation samples collected from Wells MW-4 and MW-7 on 1/11/2022</p> <p>(11): Wells EW-1, EW-2, and EW-3 abandoned on March 7 and 8, 2022</p> <p>(12): Wells EW-3R, EW-3R, and EW-4 installed on September 20 and 21, 2022</p> <p>-<: not analyzed / not measured / unknown</p> <p><: less than the laboratory method reporting limit</p> <p>>5: RBC exceeds the solubility limit</p> <p>µg/L: micrograms per Liter</p> <p>Active: groundwater well currently used for monitoring</p> <p>amsl: above mean sea level</p> <p>BTEX: benzene, toluene, ethylbenzene, and total xylenes</p> <p>btoc: below top of casing</p> <p>DTP: depth to product</p> <p>DTW: depth to water</p> <p>DTW Δ: Change in depth to water since last monitoring event</p> <p>DUP: duplicate sample</p> <p>E: reported result is an estimate because it exceeds the calibration range</p> <p>EB-1: equipment blank</p> <p>EDB: 1,2-dibromoethane</p> <p>EDC: 1,2-dichloroethane</p> <p>ft: feet</p> <p>GW: groundwater</p> <p>MTBE: Methyl tert-butyl ether</p> <p>na: not applicable</p> <p>ND: not detected</p> <p>PT: free-product thickness</p> <p>RBC: Risked Based Concentration established by the Oregon Department of Environmental Quality (ODEQ)</p> <p>TPH-Dx: total diesel-range petroleum hydrocarbons, analyzed by Northwest Method NWTPH-Dx</p> <p>TPH-Gx: total gasoline-range petroleum hydrocarbons, analyzed by Northwest Method NWTPH-Gx</p> <p>TPH-Ox: total oil-range petroleum hydrocarbons, analyzed by Northwest Method NWTPH-Ox</p>																				



TABLE 4
Additional VOCs detected in Groundwater
United Pacific #5468
Springfiled, Oregon
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Boring ID	Well Status	Date Sampled	CM	IPB	NPB	1,3,5-TMB	1,2,4-TMB	SBB	IPT	TBB	NBB	
			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Method 8260D												
MW-1	Active	03/30/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		06/23/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		09/23/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		12/22/21	33	<4.0	<1.0	41	36	<1.0	2.3	<1.0	<1.0	
		03/23/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		06/28/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		10/12/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		12/20/22	2.4	<4.0	<1.0	140	83	<1.0	9.7	<1.0	3.6	
		04/06/23	--	--	--	--	--	--	--	--	--	
		06/29/23	<2.0	<4.0	8.8	24	94	<1.0	1.3	<1.0	<1.0	
09/18/23 ⁽¹⁾	--	--	--	--	--	--	--	--	--			
MW-2	Active	03/30/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		06/23/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		09/23/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		12/22/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		03/23/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		6/28/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		10/12/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		12/20/22	24	31	99	150	560	<1.0	<1.0	<1.0	6.8	
		04/06/23	--	--	--	--	--	--	--	--	--	
		06/29/23	<2.0	36	130	230	880	7.0	15	<1.0	7.0	
09/18/23 ⁽¹⁾	--	--	--	--	--	--	--	--	--			
MW-3	Active	03/30/21	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		06/23/21	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		09/23/21	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		12/22/21	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		03/23/22	<2.0	<4.0	<1.0	<1.0	2.0	<1.0	<1.0	<1.0	<1.0	
		06/28/22	<2.0	<4.0	<1.0	5.8	<1.0	<1.0	<1.0	<1.0	<1.0	
		10/12/22	<2.0	<4.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	
		12/20/22	<2.0	<4.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	
		04/06/23	2.2	<4.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	
		06/29/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
09/19/23	--	--	--	--	--	--	--	--	--			
MW-4	Active	03/30/21	<2.0	74	190	430	1,700	<1.0	11	280	6.8	
		DUP-1	03/30/21	<2.0	73	220	460	1,800	<1.0	12	270	6.6
		06/23/21	24	52	94	750	2,800	<1.0	15	1.0	6.2	
	DUP-1	09/22/21	18	59	120	250	1,200	<1.0	12	1.0	4.6	
		09/23/21	15	52	110	340	1,200	<1.0	11	<1.0	4.1	
		12/22/21	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		03/23/22	<100	<200	140	500	1,700	<50	<50	250	<50	
		06/29/22	18	<4.0	<1.0	310	1,300	<1.0	<1.0	<1.0	<1.0	
		10/12/22	14	12	10	430	1,300	2.4	15	86	11	
		12/20/22	<20	<40	11	320	990	<10	11	<10	41	
		04/06/23	<20	<40	<10	46	14	<10	<10	<10	<10	
		06/29/23	<2.0	4.2	4.5	27	120	<1.0	2.5	<1.0	<1.0	
		09/18/23	--	--	--	--	--	--	--	--	--	
MW-5	Active	03/30/21	<2.0	94	300	600	2,600	<1.0	19	410	10	
		06/23/21	38	66	310	860	2,900	<1.0	25	<1.0	13	
		09/23/21	48	57	140	560	1,800	<1.0	20	<1.0	9	
		12/22/21	<2.0	71	1,700	590	2,100	<1.0	26	<1.0	<1.0	
		03/23/22	<100	<200	170	840	2,600	<50	<50	<50	<50	
		06/29/22	87	83	154	1,200	4,100	<1.0	31	570	107	
		10/12/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		12/20/22	<20	80	300	630	1,900	<10	24	<10	14	
		04/06/23 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		06/29/23 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
09/18/23 ⁽¹⁾	--	--	--	--	--	--	--	--	--			
MW-6	Active	03/30/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		06/23/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		09/23/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		12/22/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		03/23/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		06/28/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		10/12/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		12/20/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	



TABLE 4
Additional VOCs detected in Groundwater
United Pacific #5468
Springfiled, Oregon
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Boring ID	Well Status	Date Sampled	CM	IPB	NPB	1,3,5-TMB	1,2,4-TMB	SBB	IPT	TBB	NBB	
			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Method 8260D												
MW-6	Active	04/06/23 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		06/29/23 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		09/18/23 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
MW-7	Active	03/30/21	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		DUP-1	06/23/21	<2.0	<4.0	<1.0	3.7	12	<1.0	<1.0	<1.0	<1.0
			06/23/21	<2.0	<4.0	<1.0	1.1	3.5	<1.0	<1.0	<1.0	<1.0
	MW-7 Dup	09/23/21	8.4	<4.0	<1.0	1.8	6.9	<1.0	<1.0	<1.0	<1.0	
		12/22/21	18	3.9	8.9	19	71	<1.0	<1.0	<1.0	<1.0	
		12/22/21	21	4.7	11	24	89	<1.0	<1.0	<1.0	<1.0	
	DUP-2	03/23/22	4.1	7.9	20	41	130	<1.0	1.8	<1.0	<1.0	
		03/23/22	<100	<200	<50	<50	140	<50	<50	<50	<50	
		06/28/22	<2.0	5.2	14	35	162	<1.0	<1.0	23	5.8	
		10/12/22	<2.0	5.7	17	38	150	<1.0	<1.0	24	<1.0	
		12/20/22	<2.0	4.5	13	32	120	<1.0	1.4	<1.0	<1.0	
		04/06/23	--	--	--	--	--	--	--	--	--	
	DUP-1	06/29/23	<2.0	9.5	<1.0	55	300	1.6	2.3	<1.0	<1.0	
		06/29/23	<2.0	9.6	29	62	330	1.6	2.4	<1.0	<1.0	
		09/19/23	--	--	--	--	--	--	--	--	--	
09/19/23		--	--	--	--	--	--	--	--	--		
MW-8	Active	12/19/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		04/06/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	DUP-1	04/06/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		06/29/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-9	Active	12/19/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		04/06/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		06/29/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		09/18/23	--	--	--	--	--	--	--	--	--	
MW-10	Active	12/20/22	<2.0	<4.0	<1.0	<1.0	3.6	<1.0	<1.0	<1.0	<1.0	
		12/20/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	DUP-1	04/06/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		06/29/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		09/18/23	--	--	--	--	--	--	--	--	--	
MW-11	Active	12/20/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		04/06/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		06/29/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
		09/19/23	--	--	--	--	--	--	--	--	--	
EW-1	Active	03/30/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		06/23/21	46	100	490	930	3,900	<1.0	19	<1.0	9.3	
		09/22/21	13	22	63	130	520	<1.0	7.0	<1.0	3.6	
	DUP-1	12/22/21	29	29	91	220	742	<1.0	12	<1.0	<1.0	
		12/22/21	30	31	97	230	770	<1.0	11	<1.0	<1.0	
		03/23/22	--	--	--	--	--	--	--	--	--	
EW-1R ⁽⁷⁾	Active	09/18/23	--	--	--	--	--	--	--	--	--	
		10/12/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		12/20/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		04/06/23 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
EW-2	Active	06/29/23	<2.0	11	35	61	1,000	2.8	4.4	<1.0	2.8	
		09/19/23	--	--	--	--	--	--	--	--	--	
		03/30/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
	Abandoned ⁽⁶⁾	06/23/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		09/23/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
EW-2R ⁽⁷⁾	Active	12/22/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		03/23/22	--	--	--	--	--	--	--	--	--	
		10/12/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
	Abandoned ⁽⁶⁾	12/20/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		04/06/23	--	--	--	--	--	--	--	--	--	
EW-3	Active	06/29/23	<2.0	16	1.3	36	160	--	1.2	<1.0	1.3	
		09/19/23	--	--	--	--	--	--	--	--	--	
		03/30/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
	Abandoned ⁽⁶⁾	06/23/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		09/23/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
EW-4 ⁽⁷⁾	Active	12/22/21 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		03/23/22	--	--	--	--	--	--	--	--	--	
		10/12/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
	Abandoned ⁽⁶⁾	12/20/22 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
		04/06/23 ⁽¹⁾	--	--	--	--	--	--	--	--	--	
EW-4 ⁽⁷⁾	Active	06/29/23	<2.0	37	110	220	900	7.3	10	<1.0	8.1	
		09/19/23	--	--	--	--	--	--	--	--	--	
		09/19/23	--	--	--	--	--	--	--	--	--	



TABLE 4
Additional VOCs detected in Groundwater
United Pacific #5468
Springfiled, Oregon
Page 3 of 3

Boring ID	Well Status	Date Sampled	CM	IPB	NPB	1,3,5-TMB	1,2,4-TMB	SBB	IPT	TBB	NBB
			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Method 8260D											
QA/QC Samples											
EB-1		03/30/21	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		06/23/21	<2.0	<4.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0
		09/23/21	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		12/22/21	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		03/23/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		06/28/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		10/12/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		12/19/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		04/06/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		06/29/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/19/23	--	--	--	--	--	--	--	--	--	
EB-2 EB-2 Dup		06/29/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		12/20/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		12/20/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		06/29/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/19/23	--	--	--	--	--	--	--	--	--	
Trip Blank		06/23/21	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		12/22/21	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		03/23/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		10/12/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		12/20/22	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		04/06/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		06/29/23	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
		09/19/23	--	--	--	--	--	--	--	--	--
RBC: Injection/Inhalation from Tapwater ⁽²⁾			79	2,000	ne	280	250	ne	ne	ne	ne
RBC: Volatilization to Outdoor Air ⁽³⁾			1,800,000	>S	ne	>S	>S	ne	ne	ne	ne
RBC: Volatilization to Indoor Air ⁽⁴⁾			1,500/12,000	9,100/--	22,000/--	1,700/--	2,400/--	ne	ne	NITI	NITI
RBC: Groundwater in Excavations ⁽⁵⁾			22,000	51,000	ne	7,500	6,300	ne	ne	ne	ne
Notes:											
Results in BOLD indicate detections that exceed the ODEQ Risk-Based Concentrations (RBCs) for groundwater samples analyzed for gasoline-range organics using NWTPH-Gx and BTEX using Method 8260D; select samples further analyzed for diesel- and oil-range organics using NWTPH-Dx/Ox, for full scan VOCs using Method 8260											
(1): sample not collected due to liquid-phase hydrocarbons (LPH; free-product) in well											
(2): RBC for Groundwater - Injection and Inhalation from Tapwater, occupational receptor scenario (see ODEQ Table of RBCs - revised May 2018 amended June 2023)											
(3): RBC for Groundwater - Volatilization to Outdoor Air, occupational receptor scenario (see ODEQ Table of RBCs - revised May 2018 amended June 2023)											
(4): RBC for Groundwater - Volatilization to Indoor Air, Commercial scenario; Chronic/Acute screening values (see ODEQ Vapor Intrusion Risk-Based Concentration Table 1 - June 2023)											
(5): RBC for Groundwater in Excavation, Contact to Construction and Excavation Workers											
(6): Wells EW-1, EW-2, and EW-3 abandoned on March 7 and 8, 2022											
(7): Wells EW-1R, EW-2R, and EW-4 installed on September 20 and 21, 2022											
1,2,4-TMB: 1,2,4-trimethylbenzene											
1,3,5-TMB: 1,3,5-trimethylbenzene											
--: not analyzed											
<: not detected at or above stated laboratory reporting limit (RL)											
>S: groundwater RBC exceeds the solubility limit. Refer to RBC Table Appendix D for value of S. Groundwater concentration in excess of S indicate free product may be present											
BB: butylbenzene											
CM: chloromethane											
DUP: duplicate sample											
EB-1: Equipment blank											
ft bgs: feet below ground surface											
IPB: iso-propylbenzene (cumene)											
IPT: p-isopropyltoluene											
na: not applicable											
NBB: n-butylbenzene											
ne: not established on RBC Table											
NITI: listed as no inhalation toxicity information											
NPB: n-propylbenzene											
ODEQ RBCs: State of Oregon Department of Environmental Quality Risked-Based Concentrations											
ppmv: parts per million per volume											
SSB: sec-butylbenzene											
TBB: tert-butylbenzene											
VOCs: volatile organic compounds											



Table 5
Summary of Groundwater Flow Direction and Gradient Data
United Pacific #5468
Springfield, Oregon
Page 1 of 1

Date	Groundwater Gradient (ft/ft)	Groundwater Flow Direction																
		North	North-northeast	Northeast	East-northeast	East	East-southeast	Southeast	South-southeast	South	South-southwest	Southwest	West-southwest	West	West-northwest	Northwest	North-northwest	
03/30/21	0.003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
06/23/21	0.004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
09/22/21	0.004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
12/22/21	0.002	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
03/23/22	0.0014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
06/28/22	0.005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
10/12/22	0.024	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
12/20/22	0.004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
04/06/23	0.0077	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
06/29/23	0.012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
09/19/23	0.013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
TOTAL		0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	9	1
Notes: ft/ft: feet per foot																		



CHARTS

CHART 1
Groundwater Elevation Trends
United Pacific #5468
Springfield, Oregon

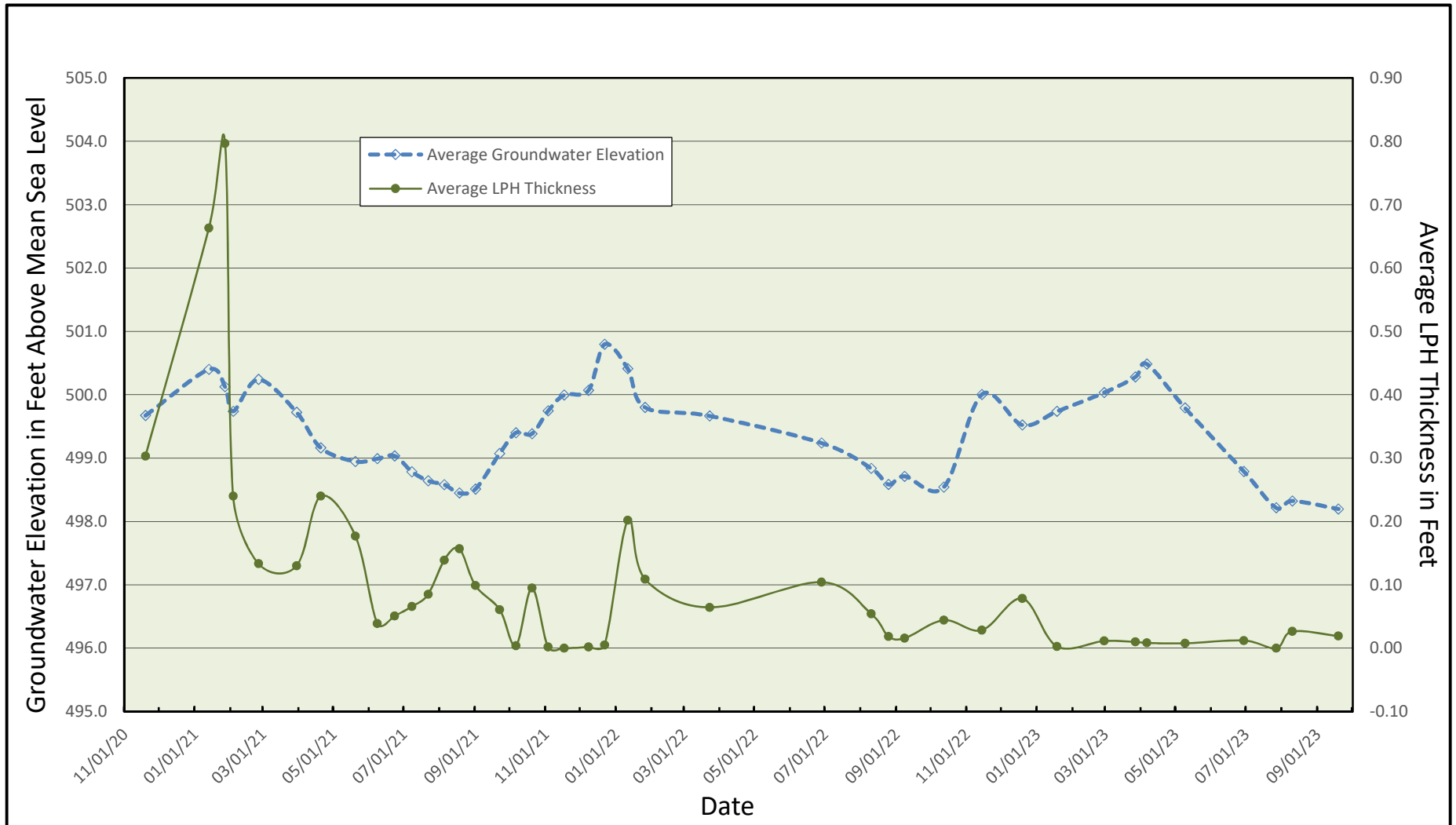


Chart 2
TPH-Gx Concentration Trends
United Pacific #5468
Springfield, Oregon

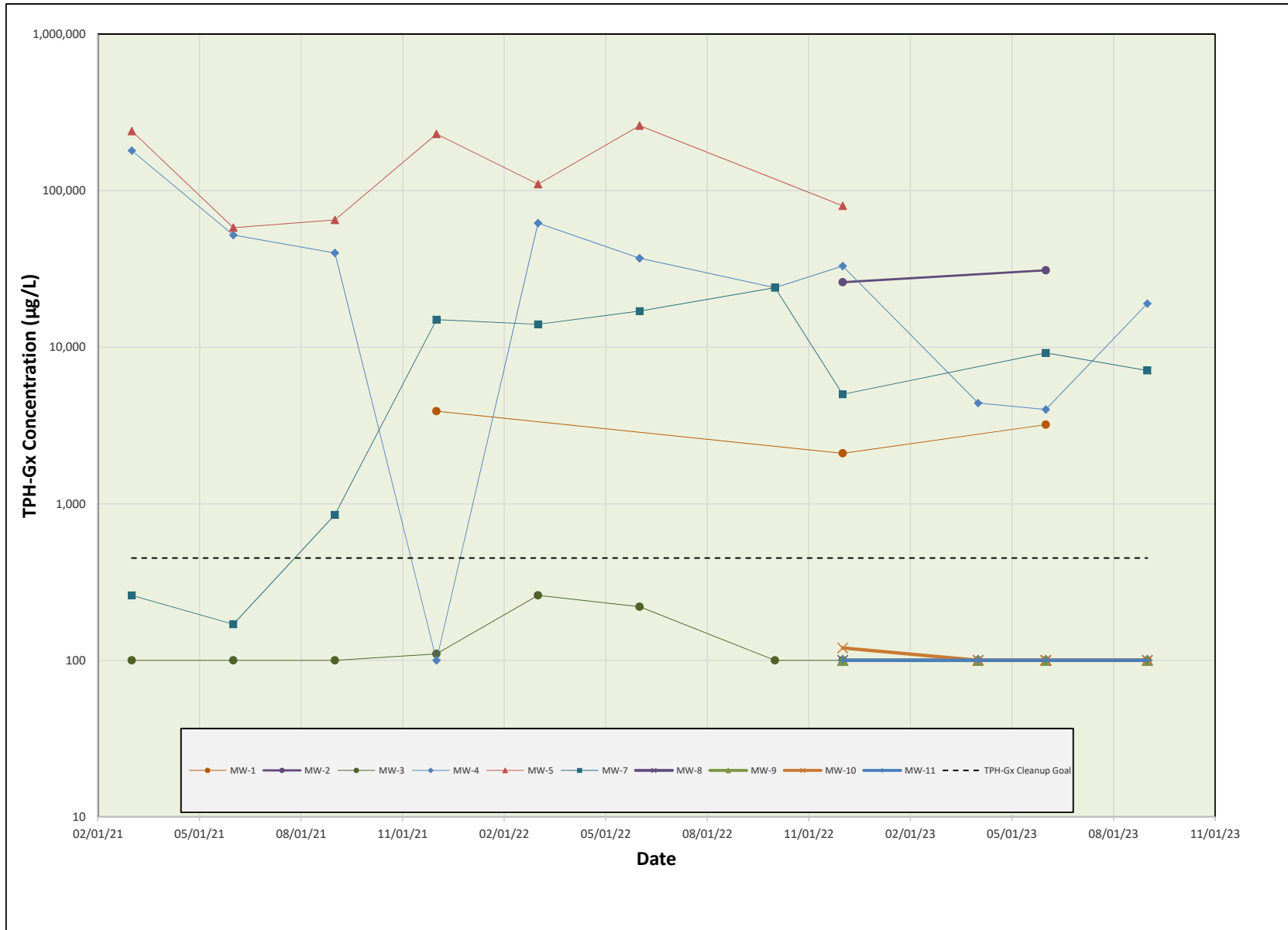
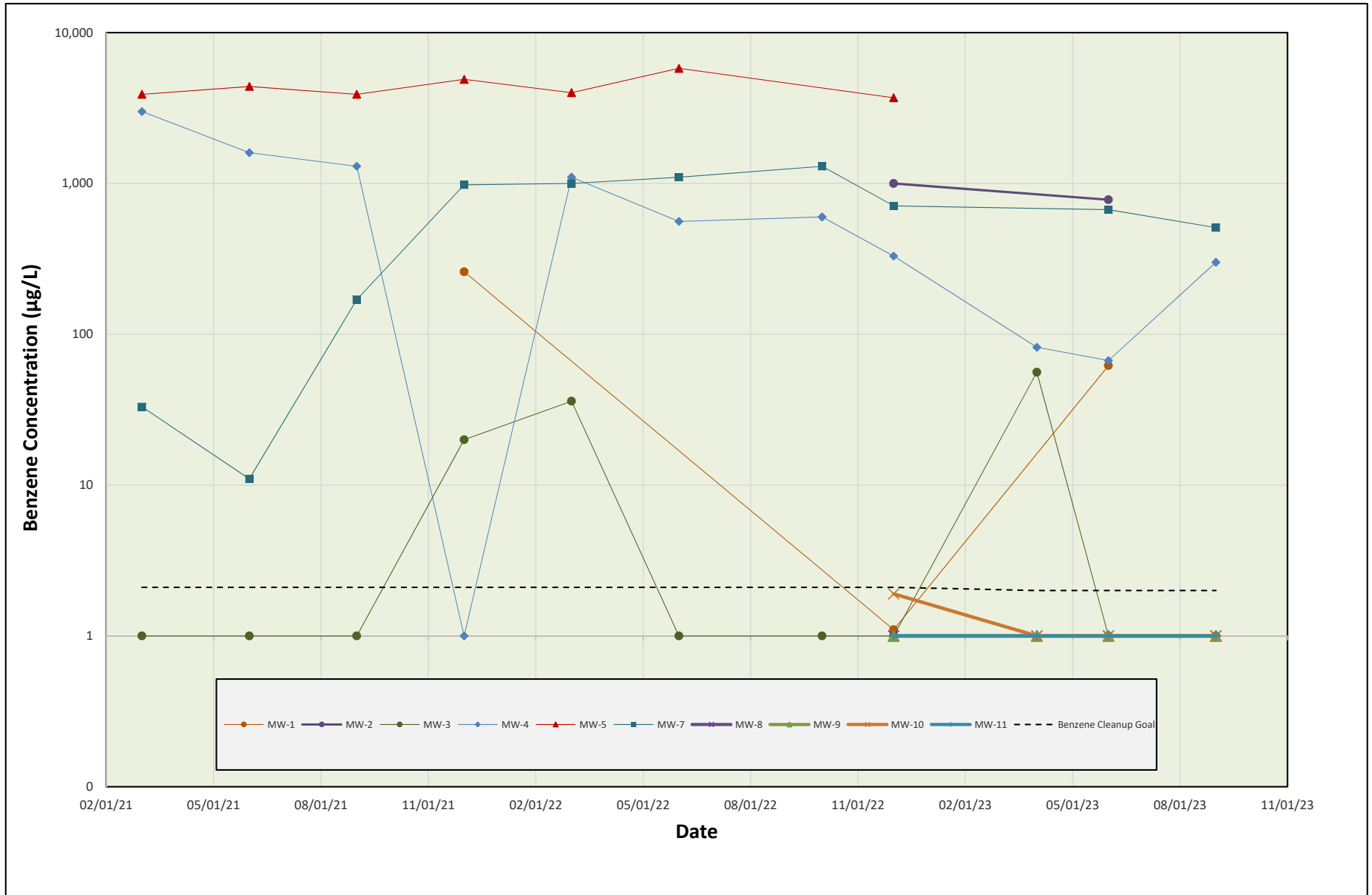


Chart 3
Benzene Concentration Trends
United Pacific #5468
Springfield, Oregon



APPENDIX A
LPH Removal Field Forms

WELL GAUGING AND FREE PRODUCT BAILING FORM

Site Name: UNITED PACIFIC
 Project Number: 5468

Location: Spring Field, OR
 Date: 8/10/23
 Technician: E.RIVERA / MGH

Well ID	Time Sounded	Depth to Top of Product	Depth to Bottom of Product/Top of Water	Total Well Depth (Below TOC)	Well Dia (inch)	Sheen/ Odor	Survey Pt (TOC/GS)	NOTES
MW-10	1109	—	12.94	18.02	4"	N/A	TOC	
MW-8	1115	—	12.34	18.07	4"	N/A	TOC	
MW-9	1128	—	11.44	17.38	4"	N/A	TOC	
MW-11	1137	—	12.60	19.74	2"	N/A	TOC	
MW-3	1144	—	12.51	26.35	4"	N/A	TOC	
MW-4	1152	—	11.26	23.97	4"	N/A	TOC	
MW-2 ^x	1207	12.86	12.91	—	4"	0.05	TOC	Product Detected took pic
MW-7	1215	—	13.29	24.97	4"	—	TOC	
MW-1 ^x	1224	14.18	14.25	0.07	4"	0.07	TOC	Product Detected
MW-4	1232	—	13.04	22.83	4"	N/A	TOC	
MW-5 ⁺	1239	10.90	10.97	—	4"	0.07	TOC	Product Detected Reset Skimmer Replaced Pore
EW-2R	1248	12.44	12.45	—	4"	0.01	TOC	Product Detected P.V.
EW-1R	1250	12.32	12.33	—	4"	0.01	TOC	Product Detected Reset Skimmer
MW-6 ^x	1300	12.28	12.45	—	4"	0.17	TOC	Product Detected
NE OBS	1340	—	13.25	15.26	4"	N/A	TOC	Needs 4" CAP
NW OBS	1312	13.14	13.15	—	4"	Sheen 0.01	TOC	Product Detected
SE OBS	1345	—	12.88	14.90	4"	N/A	TOC	
SW OBS	1335	—	12.14	13.93	4"	N/A	TOC	Needs 4" CAP

APPENDIX B

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.

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



APPENDIX C

Laboratory Analytical Report



Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

Phone (360) 352-2110 • libbyenv@gmail.com

October 03, 2023

Laura Skow
Montrose Environmental Group, Inc.
4150 B Place NW, Suite 106
Auburn, WA 98001

RE: Springfield
Work Order Number: L23I079

Enclosed are the results of analyses for samples received by our laboratory on 9/20/2023.

Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please feel free to contact us. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry Chilcutt
Senior Chemist

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506

Ph: 360-352-2110
Fax: 360-352-4154

Date: 20/Sep/23

Page: 1 of 1

Client: Montrose Environmental

Project Manager: Laura Skow (714-743-7855)

Address:

Project Name: Springfield

City: State: Zip:

Location: 5720 Main St City, State: Springfield, OR

Phone: 425-293-6570 Fax: -

Collector: Matt Engel Date of Collection: 18-19/Sep/23

Client Project # PO-052551

Email: maengel@montrose-env.com / lskow@montrose-env.com



Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	MTCA	PCE & Daughter Prod.	NWTPH-Gx	BTEX (8260) / (8021)	NWTPH-HCID	NWTPH-Dx / Dx	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	c PAH 8270	PAH 8270	Semi Vol 8270	Lead	Field Notes		
1 MW-1 (No Sample)	-	-	✓	✓																Product found in these 3 wells, no sample.	
2 MW-2 (No Sample)	-	-	✓	✓																	
3 EW-1R (No Sample)	-	-	✓	✓																	
4 MW-3	12.50	0950			✓	✓														Unless otherwise noted all samples from September 19 th , 2023. 18/Sep/23 18/Sep/23 18/Sep/23 VOCs checked are MTCA VOCs	
5 MW-4	11.40	1155			✓	✓															
6 MW-7	13.62	1255			✓	✓															
7 MW-8	12.57	1740			✓	✓															
8 MW-9	11.54	1650			✓	✓															
9 MW-10	13.12	1820			✓	✓															
10 MW-11	12.90	0910			✓	✓															
11 EW-2R	12.50	1040			✓	✓															
12 EW-4	13.15	1635			✓	✓															
13 EB-1	N/A	0815			✓	✓															
14 EB-2	N/A	0925			✓	✓															
15 DUP-1	N/A	N/A			✓	✓															
16																					
17																					

Relinquished by: Matt Engel 20/Sep/23 1440

Received by: Joshie Chubb 9/20/23 1440

Sample Receipt

Good Condition? Y N
Cooler Temp. °C
Sample Temp. °C

Relinquished by: Date / Time

Received by: Date / Time

Relinquished by: Date / Time

Received by: Date / Time

Total Number of Containers

Remarks:

TAT: 1-Day 2-Day 5-DAY



Libby Environmental, Inc.

Montrose Environmental Group, Inc.
4150 B Place NW, Suite 106
Auburn, WA 98001

Project: Springfield
Project Number: 052551
Project Manager: Laura Skow

City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Notes and Definitions

Item	Definition
R	High Relative Percent Difference observed.
RL	Reporting Limit
ND	Analyte NOT DETECTED at or above the reporting limit
DET	Analyte DETECTED at or above the reporting limit
Qual	Qualifier
	All results reported on an "as received" basis unless indicated by "Dry"
RPD	Relative Percent Difference
%REC	Percent Recovery
Parent	Sample that was matrix spiked or duplicated

Work Order Sample Summary

Lab ID	Sample	Matrix	Date Sampled	Date Received
L23I079-01	MW-1	Product	09/19/2023	09/20/2023
L23I079-02	MW-2	Product	09/19/2023	09/20/2023
L23I079-03	EW-1R	Product	09/19/2023	09/20/2023
L23I079-04	MW-3	Water	09/19/2023	09/20/2023
L23I079-05	MW-4	Water	09/19/2023	09/20/2023
L23I079-06	MW-7	Water	09/19/2023	09/20/2023
L23I079-07	MW-8	Water	09/18/2023	09/20/2023
L23I079-08	MW-9	Water	09/18/2023	09/20/2023
L23I079-09	MW-10	Water	09/18/2023	09/20/2023
L23I079-10	MW-11	Water	09/19/2023	09/20/2023
L23I079-11	EW-2R	Water	09/19/2023	09/20/2023
L23I079-12	EW-4	Water	09/19/2023	09/20/2023
L23I079-13	EB-1	Water	09/19/2023	09/20/2023
L23I079-14	EB-2	Water	09/19/2023	09/20/2023
L23I079-15	DUP-1	Water	09/19/2023	09/20/2023



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Project: Springfield
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City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Libby Environmental Sample Detection Summary

Analyte	Result	Qual	Units	RL	Method
Sample: MW-4			Lab#: L23I079-05		
Gasoline	19000		ug/L	5000	NWTPH-Gx
Benzene	300		ug/L	50	8260D
Toluene	140		ug/L	100	8260D
Ethylbenzene	3.9		ug/L	1.0	8260D
Total Xylenes	5100		ug/L	100	8260D
Naphthalene	130		ug/L	100	8260D
2-Methylnaphthalene	27		ug/L	25	8260D
1-Methylnaphthalene	40		ug/L	5.0	8260D
Sample: MW-7			Lab#: L23I079-06		
Gasoline	7100		ug/L	2000	NWTPH-Gx
Benzene	510		ug/L	20	8260D
Toluene	210		ug/L	40	8260D
Ethylbenzene	180		ug/L	20	8260D
Total Xylenes	1200		ug/L	40	8260D
Naphthalene	37		ug/L	36	8260D
2-Methylnaphthalene	15		ug/L	5.0	8260D
1-Methylnaphthalene	10		ug/L	5.0	8260D
Sample: EW-2R			Lab#: L23I079-11		
Gasoline	840		ug/L	100	NWTPH-Gx
Benzene	6.5		ug/L	1.0	8260D
Toluene	3.4		ug/L	2.0	8260D
Total Xylenes	140		ug/L	4.0	8260D
Naphthalene	6.2		ug/L	5.0	8260D
Sample: EW-4			Lab#: L23I079-12		
Gasoline	17000		ug/L	10000	NWTPH-Gx
Benzene	1200		ug/L	100	8260D
Toluene	2000		ug/L	200	8260D
1,2-Dibromoethane (EDB)	0.023		ug/L	0.010	8260D
Ethylbenzene	110		ug/L	100	8260D
Total Xylenes	2000		ug/L	200	8260D
Naphthalene	48		ug/L	48	8260D
2-Methylnaphthalene	43		ug/L	5.0	8260D
1-Methylnaphthalene	25		ug/L	5.0	8260D



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Work Order: L23I079
Reported: 10/03/2023 14:42

Libby Environmental Sample Detection Summary (Continued)

Analyte	Result	Qual	Units	RL	Method
Sample: DUP-1			Lab#: L23I079-15		
Gasoline	3300		ug/L	2000	NWTPH-Gx
Benzene	250		ug/L	20	8260D
Toluene	76		ug/L	40	8260D
Ethylbenzene	57		ug/L	20	8260D
Total Xylenes	580		ug/L	40	8260D
Naphthalene	21		ug/L	20	8260D
2-Methylnaphthalene	12		ug/L	5.0	8260D
1-Methylnaphthalene	7.6		ug/L	5.0	8260D

Note: If no entry is made, then no target compounds were detected.



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Project: Springfield
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City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Sample Results

Client Sample ID: MW-3

Lab ID: L23I079-04 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
<u>Volatile Organic Compounds by EPA Method 8260D</u>						
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L	09/21/2023	SG
Benzene	ND		1.0	ug/L	09/21/2023	SG
1,2-Dichloroethane (EDC)	ND		1.0	ug/L	09/21/2023	SG
Toluene	ND		2.0	ug/L	09/21/2023	SG
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L	09/21/2023	SG
Ethylbenzene	ND		1.0	ug/L	09/21/2023	SG
Total Xylenes	ND		2.0	ug/L	09/21/2023	SG
Naphthalene	ND		5.0	ug/L	09/21/2023	SG
2-Methylnaphthalene	ND		5.0	ug/L	09/21/2023	SG
1-Methylnaphthalene	ND		5.0	ug/L	09/21/2023	SG
<i>Surrogate: Dibromofluoromethane</i>	<i>103%</i>		<i>22.9-220</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.4%</i>		<i>32.2-196</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: Toluene-d8</i>	<i>84.4%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.8%</i>		<i>38.4-136</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Gasoline by Method NWTPH-Gx</u>						
Gasoline	ND		100	ug/L	09/21/2023	SG
<i>Surrogate: Toluene-d8</i>	<i>84.4%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Total Metals by EPA Method 7010</u>						
Lead	ND		5.0	ug/L	09/21/2023	KD



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City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Sample Results (Continued)

Client Sample ID: MW-4

Lab ID: L23I079-05 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
<u>Volatile Organic Compounds by EPA Method 8260D</u>						
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L	09/21/2023	SG
Benzene	300		50	ug/L	09/21/2023	SG
1,2-Dichloroethane (EDC)	ND		1.0	ug/L	09/21/2023	SG
Toluene	140		100	ug/L	09/21/2023	SG
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L	09/21/2023	SG
Ethylbenzene	3.9		1.0	ug/L	09/21/2023	SG
Total Xylenes	5100		100	ug/L	09/21/2023	SG
Naphthalene	130		100	ug/L	09/21/2023	SG
2-Methylnaphthalene	27		25	ug/L	09/21/2023	SG
1-Methylnaphthalene	40		5.0	ug/L	09/21/2023	SG
<i>Surrogate: Dibromofluoromethane</i>	<i>89.8%</i>		<i>22.9-220</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.0%</i>		<i>32.2-196</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: Toluene-d8</i>	<i>100%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>127%</i>		<i>38.4-136</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Gasoline by Method NWTPH-Gx</u>						
Gasoline	19000		5000	ug/L	09/21/2023	SG
<i>Surrogate: Toluene-d8</i>	<i>82.0%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Total Metals by EPA Method 7010</u>						
Lead	ND		5.0	ug/L	09/21/2023	KD



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City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Sample Results (Continued)

Client Sample ID: MW-7

Lab ID: L23I079-06 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
<u>Volatile Organic Compounds by EPA Method 8260D</u>						
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L	09/21/2023	SG
Benzene	510		20	ug/L	09/21/2023	SG
1,2-Dichloroethane (EDC)	ND		1.0	ug/L	09/21/2023	SG
Toluene	210		40	ug/L	09/21/2023	SG
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L	09/21/2023	SG
Ethylbenzene	180		20	ug/L	09/21/2023	SG
Total Xylenes	1200		40	ug/L	09/21/2023	SG
Naphthalene	37		36	ug/L	09/21/2023	SG
2-Methylnaphthalene	15		5.0	ug/L	09/21/2023	SG
1-Methylnaphthalene	10		5.0	ug/L	09/21/2023	SG
<i>Surrogate: Dibromofluoromethane</i>	<i>95.6%</i>		<i>22.9-220</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>88.8%</i>		<i>32.2-196</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: Toluene-d8</i>	<i>82.8%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>115%</i>		<i>38.4-136</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Gasoline by Method NWTPH-Gx</u>						
Gasoline	7100		2000	ug/L	09/21/2023	SG
<i>Surrogate: Toluene-d8</i>	<i>81.6%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Total Metals by EPA Method 7010</u>						
Lead	ND		5.0	ug/L	09/21/2023	KD



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Project: Springfield
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Project Manager: Laura Skow

City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Sample Results (Continued)

Client Sample ID: MW-8

Lab ID: L23I079-07 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
<u>Volatile Organic Compounds by EPA Method 8260D</u>						
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L	09/21/2023	SG
Benzene	ND		1.0	ug/L	09/21/2023	SG
1,2-Dichloroethane (EDC)	ND		1.0	ug/L	09/21/2023	SG
Toluene	ND		2.0	ug/L	09/21/2023	SG
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L	09/21/2023	SG
Ethylbenzene	ND		1.0	ug/L	09/21/2023	SG
Total Xylenes	ND		2.0	ug/L	09/21/2023	SG
Naphthalene	ND		5.0	ug/L	09/21/2023	SG
2-Methylnaphthalene	ND		5.0	ug/L	09/21/2023	SG
1-Methylnaphthalene	ND		5.0	ug/L	09/21/2023	SG
<i>Surrogate: Dibromofluoromethane</i>	<i>96.9%</i>		<i>22.9-220</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>100%</i>		<i>32.2-196</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: Toluene-d8</i>	<i>78.6%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.4%</i>		<i>38.4-136</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Gasoline by Method NWTPH-Gx</u>						
Gasoline	ND		100	ug/L	09/21/2023	SG
<i>Surrogate: Toluene-d8</i>	<i>78.6%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Total Metals by EPA Method 7010</u>						
Lead	ND		5.0	ug/L	09/21/2023	KD



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City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Sample Results (Continued)

Client Sample ID: MW-9

Lab ID: L23I079-08 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
<u>Volatile Organic Compounds by EPA Method 8260D</u>						
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L	09/21/2023	SG
Benzene	ND		1.0	ug/L	09/21/2023	SG
1,2-Dichloroethane (EDC)	ND		1.0	ug/L	09/21/2023	SG
Toluene	ND		2.0	ug/L	09/21/2023	SG
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L	09/21/2023	SG
Ethylbenzene	ND		1.0	ug/L	09/21/2023	SG
Total Xylenes	ND		2.0	ug/L	09/21/2023	SG
Naphthalene	ND		5.0	ug/L	09/21/2023	SG
2-Methylnaphthalene	ND		5.0	ug/L	09/21/2023	SG
1-Methylnaphthalene	ND		5.0	ug/L	09/21/2023	SG
<i>Surrogate: Dibromofluoromethane</i>	<i>108%</i>		<i>22.9-220</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102%</i>		<i>32.2-196</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: Toluene-d8</i>	<i>88.6%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.2%</i>		<i>38.4-136</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Gasoline by Method NWTPH-Gx</u>						
Gasoline	ND		100	ug/L	09/21/2023	SG
<i>Surrogate: Toluene-d8</i>	<i>88.6%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Total Metals by EPA Method 7010</u>						
Lead	ND		5.0	ug/L	09/21/2023	KD



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Project: Springfield
Project Number: 052551
Project Manager: Laura Skow

City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Sample Results (Continued)

Client Sample ID: MW-10

Lab ID: L23I079-09 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
<u>Volatile Organic Compounds by EPA Method 8260D</u>						
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L	09/21/2023	SG
Benzene	ND		1.0	ug/L	09/21/2023	SG
1,2-Dichloroethane (EDC)	ND		1.0	ug/L	09/21/2023	SG
Toluene	ND		2.0	ug/L	09/21/2023	SG
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L	09/21/2023	SG
Ethylbenzene	ND		1.0	ug/L	09/21/2023	SG
Total Xylenes	ND		2.0	ug/L	09/21/2023	SG
Naphthalene	ND		5.0	ug/L	09/21/2023	SG
2-Methylnaphthalene	ND		5.0	ug/L	09/21/2023	SG
1-Methylnaphthalene	ND		5.0	ug/L	09/21/2023	SG
<i>Surrogate: Dibromofluoromethane</i>	<i>97.3%</i>		<i>22.9-220</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.0%</i>		<i>32.2-196</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: Toluene-d8</i>	<i>78.3%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.4%</i>		<i>38.4-136</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Gasoline by Method NWTPH-Gx</u>						
Gasoline	ND		100	ug/L	09/21/2023	SG
<i>Surrogate: Toluene-d8</i>	<i>78.3%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Total Metals by EPA Method 7010</u>						
Lead	ND		5.0	ug/L	09/21/2023	KD



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Project: Springfield
Project Number: 052551
Project Manager: Laura Skow

City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Sample Results (Continued)

Client Sample ID: MW-11

Lab ID: L23I079-10 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
<u>Volatile Organic Compounds by EPA Method 8260D</u>						
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L	09/21/2023	SG
Benzene	ND		1.0	ug/L	09/21/2023	SG
1,2-Dichloroethane (EDC)	ND		1.0	ug/L	09/21/2023	SG
Toluene	ND		2.0	ug/L	09/21/2023	SG
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L	09/21/2023	SG
Ethylbenzene	ND		1.0	ug/L	09/21/2023	SG
Total Xylenes	ND		2.0	ug/L	09/21/2023	SG
Naphthalene	ND		5.0	ug/L	09/21/2023	SG
2-Methylnaphthalene	ND		5.0	ug/L	09/21/2023	SG
1-Methylnaphthalene	ND		5.0	ug/L	09/21/2023	SG
<i>Surrogate: Dibromofluoromethane</i>	<i>99.6%</i>		<i>22.9-220</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.8%</i>		<i>32.2-196</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: Toluene-d8</i>	<i>78.8%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>87.5%</i>		<i>38.4-136</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Gasoline by Method NWTPH-Gx</u>						
Gasoline	ND		100	ug/L	09/21/2023	SG
<i>Surrogate: Toluene-d8</i>	<i>78.8%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Total Metals by EPA Method 7010</u>						
Lead	ND		5.0	ug/L	09/21/2023	KD



Libby Environmental, Inc.

Montrose Environmental Group, Inc.
4150 B Place NW, Suite 106
Auburn, WA 98001

Project: Springfield
Project Number: 052551
Project Manager: Laura Skow

City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Sample Results (Continued)

Client Sample ID: EW-2R

Lab ID: L23I079-11 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
<u>Volatile Organic Compounds by EPA Method 8260D</u>						
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L	09/21/2023	SG
Benzene	6.5		1.0	ug/L	09/21/2023	SG
1,2-Dichloroethane (EDC)	ND		1.0	ug/L	09/21/2023	SG
Toluene	3.4		2.0	ug/L	09/21/2023	SG
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L	09/21/2023	SG
Ethylbenzene	ND		1.0	ug/L	09/21/2023	SG
Total Xylenes	140		4.0	ug/L	09/21/2023	SG
Naphthalene	6.2		5.0	ug/L	09/21/2023	SG
2-Methylnaphthalene	ND		5.0	ug/L	09/21/2023	SG
1-Methylnaphthalene	ND		5.0	ug/L	09/21/2023	SG
<i>Surrogate: Dibromofluoromethane</i>	<i>95.0%</i>		<i>22.9-220</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94.0%</i>		<i>32.2-196</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: Toluene-d8</i>	<i>80.4%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>111%</i>		<i>38.4-136</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Gasoline by Method NWTPH-Gx</u>						
Gasoline	840		100	ug/L	09/21/2023	SG
<i>Surrogate: Toluene-d8</i>	<i>80.4%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Total Metals by EPA Method 7010</u>						
Lead	ND		5.0	ug/L	09/21/2023	KD



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Work Order: L23I079
Reported: 10/03/2023 14:42

Sample Results (Continued)

Client Sample ID: EW-4

Lab ID: L23I079-12 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
<u>Volatile Organic Compounds by EPA Method 8260D</u>						
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L	09/21/2023	SG
Benzene	1200		100	ug/L	09/22/2023	SG
1,2-Dichloroethane (EDC)	ND		1.0	ug/L	09/21/2023	SG
Toluene	2000		200	ug/L	09/22/2023	SG
1,2-Dibromoethane (EDB) (SIM)	0.023		0.010	ug/L	09/21/2023	SG
Ethylbenzene	110		100	ug/L	09/22/2023	SG
Total Xylenes	2000		200	ug/L	09/22/2023	SG
Naphthalene	48		48	ug/L	09/22/2023	SG
2-Methylnaphthalene	43		5.0	ug/L	09/21/2023	SG
1-Methylnaphthalene	25		5.0	ug/L	09/21/2023	SG
<i>Surrogate: Dibromofluoromethane</i>	<i>79.9%</i>		<i>22.9-220</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>90.0%</i>		<i>32.2-196</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: Toluene-d8</i>	<i>86.7%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>110%</i>		<i>38.4-136</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Gasoline by Method NWTPH-Gx</u>						
Gasoline	17000		10000	ug/L	09/22/2023	SG
<i>Surrogate: Toluene-d8</i>	<i>80.2%</i>		<i>47.3-146</i>		<i>09/22/2023</i>	<i>SG</i>
<u>Total Metals by EPA Method 7010</u>						
Lead	ND		5.0	ug/L	09/21/2023	KD



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City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Sample Results (Continued)

Client Sample ID: EB-1

Lab ID: L23I079-13 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
<u>Volatile Organic Compounds by EPA Method 8260D</u>						
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L	09/22/2023	SG
Benzene	ND		1.0	ug/L	09/22/2023	SG
1,2-Dichloroethane (EDC)	ND		1.0	ug/L	09/22/2023	SG
Toluene	ND		2.0	ug/L	09/22/2023	SG
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L	09/22/2023	SG
Ethylbenzene	ND		1.0	ug/L	09/22/2023	SG
Total Xylenes	ND		2.0	ug/L	09/22/2023	SG
Naphthalene	ND		5.0	ug/L	09/22/2023	SG
2-Methylnaphthalene	ND		5.0	ug/L	09/22/2023	SG
1-Methylnaphthalene	ND		5.0	ug/L	09/22/2023	SG
<i>Surrogate: Dibromofluoromethane</i>	<i>98.1%</i>		<i>22.9-220</i>		<i>09/22/2023</i>	<i>SG</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>93.0%</i>		<i>32.2-196</i>		<i>09/22/2023</i>	<i>SG</i>
<i>Surrogate: Toluene-d8</i>	<i>79.6%</i>		<i>47.3-146</i>		<i>09/22/2023</i>	<i>SG</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88.6%</i>		<i>38.4-136</i>		<i>09/22/2023</i>	<i>SG</i>
<u>Gasoline by Method NWTPH-Gx</u>						
Gasoline	ND		100	ug/L	09/22/2023	SG
<i>Surrogate: Toluene-d8</i>	<i>79.6%</i>		<i>47.3-146</i>		<i>09/22/2023</i>	<i>SG</i>
<u>Total Metals by EPA Method 7010</u>						
Lead	ND		5.0	ug/L	09/21/2023	KD



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Work Order: L23I079
Reported: 10/03/2023 14:42

Sample Results (Continued)

Client Sample ID: EB-2

Lab ID: L23I079-14 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
<u>Volatile Organic Compounds by EPA Method 8260D</u>						
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L	09/22/2023	SG
Benzene	ND		1.0	ug/L	09/22/2023	SG
1,2-Dichloroethane (EDC)	ND		1.0	ug/L	09/22/2023	SG
Toluene	ND		2.0	ug/L	09/22/2023	SG
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L	09/22/2023	SG
Ethylbenzene	ND		1.0	ug/L	09/22/2023	SG
Total Xylenes	ND		2.0	ug/L	09/22/2023	SG
Naphthalene	ND		5.0	ug/L	09/22/2023	SG
2-Methylnaphthalene	ND		5.0	ug/L	09/22/2023	SG
1-Methylnaphthalene	ND		5.0	ug/L	09/22/2023	SG
<i>Surrogate: Dibromofluoromethane</i>	<i>93.5%</i>		<i>22.9-220</i>		<i>09/22/2023</i>	<i>SG</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96.1%</i>		<i>32.2-196</i>		<i>09/22/2023</i>	<i>SG</i>
<i>Surrogate: Toluene-d8</i>	<i>78.8%</i>		<i>47.3-146</i>		<i>09/22/2023</i>	<i>SG</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.8%</i>		<i>38.4-136</i>		<i>09/22/2023</i>	<i>SG</i>
<u>Gasoline by Method NWTPH-Gx</u>						
Gasoline	ND		100	ug/L	09/22/2023	SG
<i>Surrogate: Toluene-d8</i>	<i>78.8%</i>		<i>47.3-146</i>		<i>09/22/2023</i>	<i>SG</i>
<u>Total Metals by EPA Method 7010</u>						
Lead	ND		5.0	ug/L	09/21/2023	KD



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City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Sample Results (Continued)

Client Sample ID: DUP-1

Lab ID: L23I079-15 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
<u>Volatile Organic Compounds by EPA Method 8260D</u>						
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L	09/21/2023	SG
Benzene	250		20	ug/L	09/22/2023	SG
1,2-Dichloroethane (EDC)	ND		1.0	ug/L	09/21/2023	SG
Toluene	76		40	ug/L	09/22/2023	SG
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L	09/21/2023	SG
Ethylbenzene	57		20	ug/L	09/22/2023	SG
Total Xylenes	580		40	ug/L	09/22/2023	SG
Naphthalene	21		20	ug/L	09/22/2023	SG
2-Methylnaphthalene	12		5.0	ug/L	09/21/2023	SG
1-Methylnaphthalene	7.6		5.0	ug/L	09/21/2023	SG
<i>Surrogate: Dibromofluoromethane</i>	<i>89.2%</i>		<i>22.9-220</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.9%</i>		<i>32.2-196</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: Toluene-d8</i>	<i>84.6%</i>		<i>47.3-146</i>		<i>09/21/2023</i>	<i>SG</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>118%</i>		<i>38.4-136</i>		<i>09/21/2023</i>	<i>SG</i>
<u>Gasoline by Method NWTPH-Gx</u>						
Gasoline	3300		2000	ug/L	09/22/2023	SG
<i>Surrogate: Toluene-d8</i>	<i>79.6%</i>		<i>47.3-146</i>		<i>09/22/2023</i>	<i>SG</i>
<u>Total Metals by EPA Method 7010</u>						
Lead	ND		5.0	ug/L	09/21/2023	KD



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City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Quality Control

Volatile Organic Compounds by EPA Method 8260D

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BXI0126 - VOA

Blank (BXI0126-BLK1)

Prepared & Analyzed: 9/21/2023

Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L						
Benzene	ND		1.0	ug/L						
1,2-Dichloroethane (EDC)	ND		1.0	ug/L						
Toluene	ND		2.0	ug/L						
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L						
Ethylbenzene	ND		1.0	ug/L						
Total Xylenes	ND		2.0	ug/L						
Naphthalene	ND		5.0	ug/L						
2-Methylnaphthalene	ND		5.0	ug/L						
1-Methylnaphthalene	ND		5.0	ug/L						
Surrogate: Dibromofluoromethane			20.7	ug/L	20.0		104	22.9-220		
Surrogate: 1,2-Dichloroethane-d4			19.3	ug/L	20.0		96.4	32.2-196		
Surrogate: Toluene-d8			17.1	ug/L	20.0		85.5	47.3-146		
Surrogate: 4-Bromofluorobenzene			18.6	ug/L	20.0		93.1	38.4-136		

LCS (BXI0126-BS1)

Prepared & Analyzed: 9/21/2023

Methyl tert-Butyl Ether (MTBE)	6.78		5.0	ug/L	5.00		136	17.2-189		
Benzene	4.83		1.0	ug/L	5.00		96.7	56.1-138		
1,2-Dichloroethane (EDC)	4.52		1.0	ug/L	5.00		90.4	39.6-177		
Toluene	4.28		2.0	ug/L	5.00		85.7	54-132		
1,2-Dibromoethane (EDB) (SIM)	4.56		0.010	ug/L	5.00		91.2	21.9-165		
Ethylbenzene	4.13		1.0	ug/L	5.00		82.5	53.8-127		
Total Xylenes	11.3		2.0	ug/L	15.0		75.3	37.5-127		
Naphthalene	3.02		2.0	ug/L	5.00		60.5	10-186		
2-Methylnaphthalene	5.25		5.0	ug/L	5.00		105	13.2-160		
1-Methylnaphthalene	3.30		2.0	ug/L	5.00		66.0	10-181		
Surrogate: Dibromofluoromethane			20.6	ug/L	20.0		103	22.9-220		
Surrogate: 1,2-Dichloroethane-d4			18.9	ug/L	20.0		94.6	32.2-196		
Surrogate: Toluene-d8			16.8	ug/L	20.0		84.0	47.3-146		
Surrogate: 4-Bromofluorobenzene			22.2	ug/L	20.0		111	38.4-136		

Duplicate (BXI0126-DUP1)

Parent: L23I079-04

Prepared & Analyzed: 9/21/2023

Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L		ND				35
Benzene	ND		1.0	ug/L		ND				35
1,2-Dichloroethane (EDC)	ND		1.0	ug/L		ND				35
Toluene	ND		2.0	ug/L		ND				35
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L		ND				35
Ethylbenzene	ND		1.0	ug/L		ND				35
Total Xylenes	ND		2.0	ug/L		ND				35
Naphthalene	ND		5.0	ug/L		ND				35
2-Methylnaphthalene	ND		5.0	ug/L		ND				35
1-Methylnaphthalene	ND		5.0	ug/L		ND				35
Surrogate: Dibromofluoromethane			19.2	ug/L	20.0		95.9	22.9-220		
Surrogate: 1,2-Dichloroethane-d4			19.4	ug/L	20.0		97.2	32.2-196		
Surrogate: Toluene-d8			16.1	ug/L	20.0		80.3	47.3-146		
Surrogate: 4-Bromofluorobenzene			17.8	ug/L	20.0		88.8	38.4-136		



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Project: Springfield
Project Number: 052551
Project Manager: Laura Skow

City/State: Springfield, OR
Work Order: L231079
Reported: 10/03/2023 14:42

Quality Control (Continued)

Volatile Organic Compounds by EPA Method 8260D (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Matrix Spike (BXI0126-MS1)		Parent: L231079-04			Prepared & Analyzed: 9/21/2023					
Methyl tert-Butyl Ether (MTBE)	5.75		5.0	ug/L	5.00	ND	115	10-240		
Benzene	5.80		1.0	ug/L	5.00	0.329	109	10-188		
1,2-Dichloroethane (EDC)	4.40		1.0	ug/L	5.00	ND	87.9	38.2-189		
Toluene	4.36		2.0	ug/L	5.00	ND	87.3	10-251		
1,2-Dibromoethane (EDB) (SIM)	4.54		0.010	ug/L	5.00	ND	90.7	23.7-168		
Ethylbenzene	3.95		1.0	ug/L	5.00	ND	78.9	10-267		
Total Xylenes	12.0		2.0	ug/L	15.0	ND	79.8	10-184		
Naphthalene	3.46		2.0	ug/L	5.00	ND	69.1	10-346		
2-Methylnaphthalene	4.75		2.0	ug/L	5.00	ND	95.0	10-217		
1-Methylnaphthalene	1.82		1.0	ug/L	5.00	ND	36.3	10-173		
<i>Surrogate: Dibromofluoromethane</i>			18.8	ug/L	20.0		94.0	22.9-220		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			19.1	ug/L	20.0		95.3	32.2-196		
<i>Surrogate: Toluene-d8</i>			16.0	ug/L	20.0		80.2	47.3-146		
<i>Surrogate: 4-Bromofluorobenzene</i>			21.4	ug/L	20.0		107	38.4-136		
Matrix Spike Dup (BXI0126-MSD1)		Parent: L231079-04			Prepared & Analyzed: 9/21/2023					
Methyl tert-Butyl Ether (MTBE)	5.54		5.0	ug/L	5.00	ND	111	10-240	3.77	35
Benzene	5.49		1.0	ug/L	5.00	0.329	103	10-188	5.38	35
1,2-Dichloroethane (EDC)	3.98		1.0	ug/L	5.00	ND	79.6	38.2-189	9.88	35
Toluene	4.21		2.0	ug/L	5.00	ND	84.2	10-251	3.59	35
1,2-Dibromoethane (EDB) (SIM)	4.64		0.010	ug/L	5.00	ND	92.9	23.7-168	2.35	35
Ethylbenzene	4.02		1.0	ug/L	5.00	ND	80.3	10-267	1.71	35
Total Xylenes	11.7		2.0	ug/L	15.0	ND	78.0	10-184	2.32	35
Naphthalene	3.70		2.0	ug/L	5.00	ND	73.9	10-346	6.74	35
2-Methylnaphthalene	5.06		5.0	ug/L	5.00	ND	101	10-217	6.36	35
1-Methylnaphthalene	3.50		2.0	ug/L	5.00	ND	70.1	10-173		35
<i>Surrogate: Dibromofluoromethane</i>			19.0	ug/L	20.0		95.2	22.9-220		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			19.1	ug/L	20.0		95.5	32.2-196		
<i>Surrogate: Toluene-d8</i>			16.0	ug/L	20.0		80.0	47.3-146		
<i>Surrogate: 4-Bromofluorobenzene</i>			22.6	ug/L	20.0		113	38.4-136		
Blank (BXI0136-BLK1)					Prepared & Analyzed: 9/22/2023					
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L						
Benzene	ND		1.0	ug/L						
1,2-Dichloroethane (EDC)	ND		1.0	ug/L						
Toluene	ND		2.0	ug/L						
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L						
Ethylbenzene	ND		1.0	ug/L						
Total Xylenes	ND		2.0	ug/L						
Naphthalene	ND		5.0	ug/L						
2-Methylnaphthalene	ND		5.0	ug/L						
1-Methylnaphthalene	ND		5.0	ug/L						
<i>Surrogate: Dibromofluoromethane</i>			19.9	ug/L	20.0		99.7	22.9-220		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			19.3	ug/L	20.0		96.6	32.2-196		
<i>Surrogate: Toluene-d8</i>			15.8	ug/L	20.0		79.2	47.3-146		
<i>Surrogate: 4-Bromofluorobenzene</i>			17.4	ug/L	20.0		87.2	38.4-136		



Libby Environmental, Inc.

Montrose Environmental Group, Inc.
4150 B Place NW, Suite 106
Auburn, WA 98001

Project: Springfield
Project Number: 052551
Project Manager: Laura Skow

City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Quality Control (Continued)

Volatile Organic Compounds by EPA Method 8260D (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
LCS (BXI0136-BS1)										
Prepared & Analyzed: 9/22/2023										
Methyl tert-Butyl Ether (MTBE)	6.54		5.0	ug/L	5.00		131	17.2-189		
Benzene	6.01		1.0	ug/L	5.00		120	56.1-138		
1,2-Dichloroethane (EDC)	5.16		1.0	ug/L	5.00		103	39.6-177		
Toluene	4.99		2.0	ug/L	5.00		99.7	54-132		
1,2-Dibromoethane (EDB) (SIM)	5.07		0.010	ug/L	5.00		101	21.9-165		
Ethylbenzene	4.70		1.0	ug/L	5.00		93.9	53.8-127		
Total Xylenes	13.1		2.0	ug/L	15.0		87.4	37.5-127		
Naphthalene	3.81		2.0	ug/L	5.00		76.1	10-186		
2-Methylnaphthalene	5.25		5.0	ug/L	5.00		105	13.2-160		
1-Methylnaphthalene	3.75		2.0	ug/L	5.00		75.0	10-181		
Surrogate: Dibromofluoromethane			20.2	ug/L	20.0		101	22.9-220		
Surrogate: 1,2-Dichloroethane-d4			19.8	ug/L	20.0		99.2	32.2-196		
Surrogate: Toluene-d8			17.3	ug/L	20.0		86.4	47.3-146		
Surrogate: 4-Bromofluorobenzene			23.2	ug/L	20.0		116	38.4-136		
Duplicate (BXI0136-DUP1)										
Parent: L23I079-14										
Prepared & Analyzed: 9/22/2023										
Methyl tert-Butyl Ether (MTBE)	ND		5.0	ug/L		ND				35
Benzene	ND		1.0	ug/L		ND				35
1,2-Dichloroethane (EDC)	ND		1.0	ug/L		ND				35
Toluene	ND		2.0	ug/L		ND				35
1,2-Dibromoethane (EDB) (SIM)	ND		0.010	ug/L		ND				35
Ethylbenzene	ND		1.0	ug/L		ND				35
Total Xylenes	ND		2.0	ug/L		ND				35
Naphthalene	ND		5.0	ug/L		ND				35
2-Methylnaphthalene	ND		5.0	ug/L		ND				35
1-Methylnaphthalene	ND		5.0	ug/L		ND				35
Surrogate: Dibromofluoromethane			19.2	ug/L	20.0		96.2	22.9-220		
Surrogate: 1,2-Dichloroethane-d4			19.2	ug/L	20.0		95.9	32.2-196		
Surrogate: Toluene-d8			15.9	ug/L	20.0		79.6	47.3-146		
Surrogate: 4-Bromofluorobenzene			18.9	ug/L	20.0		94.5	38.4-136		
Matrix Spike (BXI0136-MS1)										
Parent: L23I079-14										
Prepared & Analyzed: 9/22/2023										
Methyl tert-Butyl Ether (MTBE)	5.79		5.0	ug/L	5.00	ND	116	10-240		
Benzene	5.48		1.0	ug/L	5.00	0.520	99.2	10-188		
1,2-Dichloroethane (EDC)	4.19		1.0	ug/L	5.00	ND	83.9	38.2-189		
Toluene	4.21		2.0	ug/L	5.00	0.268	78.9	10-251		
1,2-Dibromoethane (EDB) (SIM)	4.63		0.010	ug/L	5.00	ND	92.5	23.7-168		
Ethylbenzene	4.26		1.0	ug/L	5.00	ND	85.2	10-267		
Total Xylenes	11.2		2.0	ug/L	15.0	ND	74.5	10-184		
Naphthalene	3.49		2.0	ug/L	5.00	ND	69.9	10-346		
2-Methylnaphthalene	4.80		2.0	ug/L	5.00	ND	96.0	10-217		
1-Methylnaphthalene	2.41		2.0	ug/L	5.00	ND	48.3	10-173		
Surrogate: Dibromofluoromethane			19.3	ug/L	20.0		96.4	22.9-220		
Surrogate: 1,2-Dichloroethane-d4			19.0	ug/L	20.0		94.8	32.2-196		
Surrogate: Toluene-d8			16.2	ug/L	20.0		81.2	47.3-146		
Surrogate: 4-Bromofluorobenzene			21.7	ug/L	20.0		108	38.4-136		



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Project: Springfield
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City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Quality Control (Continued)

Volatile Organic Compounds by EPA Method 8260D (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Matrix Spike Dup (BXI0136-MSD1)		Parent: L23I079-14			Prepared & Analyzed: 9/22/2023					
Methyl tert-Butyl Ether (MTBE)	5.93		5.0	ug/L	5.00	ND	119	10-240	2.37	35
Benzene	5.08		1.0	ug/L	5.00	0.520	91.3	10-188	7.50	35
1,2-Dichloroethane (EDC)	4.11		1.0	ug/L	5.00	ND	82.2	38.2-189	2.02	35
Toluene	4.18		2.0	ug/L	5.00	0.268	78.3	10-251	0.715	35
1,2-Dibromoethane (EDB) (SIM)	4.55		0.010	ug/L	5.00	ND	90.9	23.7-168	1.72	35
Ethylbenzene	4.16		1.0	ug/L	5.00	ND	83.2	10-267	2.37	35
Total Xylenes	11.0		2.0	ug/L	15.0	ND	73.4	10-184	1.45	35
Naphthalene	3.35		2.0	ug/L	5.00	ND	67.1	10-346	4.09	35
2-Methylnaphthalene	5.04		5.0	ug/L	5.00	ND	101	10-217	4.80	35
1-Methylnaphthalene	3.98	R	2.0	ug/L	5.00	ND	79.6	10-173	49.0	35
<i>Surrogate: Dibromofluoromethane</i>			19.7	ug/L	20.0		98.6	22.9-220		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			19.1	ug/L	20.0		95.4	32.2-196		
<i>Surrogate: Toluene-d8</i>			16.6	ug/L	20.0		83.0	47.3-146		
<i>Surrogate: 4-Bromofluorobenzene</i>			22.3	ug/L	20.0		111	38.4-136		



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Quality Control (Continued)

Gasoline by Method NWTPH-Gx

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BXI0126 - VOA										
Blank (BXI0126-BLK1)										
Gasoline	ND		100	ug/L						
		<i>Surrogate: Toluene-d8</i>		17.1	ug/L	20.0	85.5	47.3-146		
Prepared & Analyzed: 9/21/2023										
Duplicate (BXI0126-DUP1)										
Gasoline	ND		100	ug/L		ND				35
		<i>Surrogate: Toluene-d8</i>		16.1	ug/L	20.0	80.3	47.3-146		
Parent: L23I079-04 Prepared & Analyzed: 9/21/2023										
Matrix Spike (BXI0126-MS1)										
		<i>Surrogate: Toluene-d8</i>		16.0	ug/L	20.0	80.2	47.3-146		
Parent: L23I079-04 Prepared & Analyzed: 9/21/2023										
Blank (BXI0136-BLK1)										
Gasoline	ND		100	ug/L						
		<i>Surrogate: Toluene-d8</i>		15.8	ug/L	20.0	79.2	47.3-146		
Prepared & Analyzed: 9/22/2023										
LCS (BXI0136-BS1)										
Gasoline	ND		100	ug/L				80-120		
Prepared & Analyzed: 9/22/2023										
Duplicate (BXI0136-DUP1)										
Gasoline	ND		100	ug/L		ND				35
		<i>Surrogate: Toluene-d8</i>		15.9	ug/L	20.0	79.6	47.3-146		
Parent: L23I079-14 Prepared & Analyzed: 9/22/2023										



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Project: Springfield
Project Number: 052551
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City/State: Springfield, OR
Work Order: L23I079
Reported: 10/03/2023 14:42

Quality Control (Continued)

Total Metals by EPA Method 7010

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BXI0124 - Metals Digest										
Blank (BXI0124-BLK1)										
Lead	ND		5.0	ug/L						
					Prepared: 9/20/2023	Analyzed: 9/21/2023				
LCS (BXI0124-BS1)										
Lead	49.9		5.0	ug/L	50.0		99.7	80-120		
					Prepared: 9/20/2023	Analyzed: 9/21/2023				
LCS Dup (BXI0124-BSD1)										
Lead	57.3		5.0	ug/L	50.0		115	80-120	13.8	20
					Prepared: 9/20/2023	Analyzed: 9/21/2023				
Duplicate (BXI0124-DUP1)										
Lead	ND		5.0	ug/L		1.87				20
					Prepared: 9/20/2023	Analyzed: 9/21/2023				
Duplicate (BXI0124-DUP2)										
Lead	ND		5.0	ug/L		1.87				20
					Prepared: 9/20/2023	Analyzed: 9/21/2023				
Matrix Spike (BXI0124-MS1)										
Lead	45.3		5.0	ug/L	50.0	1.87	86.9	75-125		
					Prepared: 9/20/2023	Analyzed: 9/21/2023				
Matrix Spike Dup (BXI0124-MSD1)										
Lead	45.6		5.0	ug/L	50.0	1.87	87.4	75-125	0.554	20
					Prepared: 9/20/2023	Analyzed: 9/21/2023				
Post Spike (BXI0124-PS1)										
Lead	3400		1000	ug/L	4000	ND	84.9	75-125		
					Prepared: 9/20/2023	Analyzed: 9/21/2023				
Post Spike (BXI0124-PS2)										
Lead	3210		1000	ug/L	4000	ND	80.2	75-125		
					Prepared: 9/20/2023	Analyzed: 9/21/2023				

Libby Environmental, Inc.

3322 South Bay Road NE

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Email: libbyenv@gmail.com

Springfield Project

Montrose Environmental Group, Inc.

Libby Work Order # L23I079

Date Received 9/20/2023

Time Received 2:40 PM

Received By JC

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody is complete? Yes No
2. How was the sample delivered? Hand Delivered Picked Up Shipped

Log In

3. Cooler or Shipping Container is present. Yes No N/A
4. Cooler or Shipping Container is in good condition. Yes No N/A
5. Cooler or Shipping Container has Custody Seals present. Yes No N/A
6. Was an attempt made to cool the samples? Yes No N/A
7. Temperature of cooler (0°C to 8°C recommended) 2.5 °C
8. Temperature of sample(s) (0°C to 8°C recommended) 7.4 °C
9. Did all containers arrive in good condition (unbroken)? Yes No
10. Is it clear what analyses were requested? Yes No
11. Did container labels match Chain of Custody? Yes No
12. Are matrices correctly identified on Chain of Custody? Yes No
13. Are correct containers used for the analysis indicated? Yes No
14. Is there sufficient sample volume for indicated analysis? Yes No
15. Were all containers properly preserved per each analysis? Yes No
16. Were VOA vials collected correctly (no headspace)? Yes No N/A
17. Were all holding times able to be met? Yes No

Discrepancies/ Notes

18. Was client notified of all discrepancies? Yes No N/A

Person Notified: _____

Date: _____

By Whom: _____

Via: _____

Regarding: VOA Headspace Bubbles

19. Comments. EB-1 VOA 2of3 has 7mm buuble, VOA 3of3 has 8mm bubble.

Dup-1 VOA 3of3 has 3mm bubble.

APPENDIX D

Groundwater Monitoring Field Forms

WELL GAUGING DATA FORM

Site Name: UP #5468
 Project No: PROJ-006811

Location: Springfield, OR
 Date: 9-19/sep/23
 Technician: Matt Engel

Well ID	Time	Well Dia (inch)	Sheen / Odor	Depth to Product (feet)	Thickness of Product (feet)	Depth to Water (feet)	Total Well Depth (feet below TOC)	Survey Point (TOC/GS)	NOTES
MW-9	1610	4"	N/A	-	-	11.54	17.40	TOC	TOC unless otherwise noted
MW-8	1510	4"	N/A	-	-	12.51	17.95 ^{ME}	-	
MW-10	1800	4"	N/A	-	-	13.08	17.92	-	Last of Sep 18th
MW-11	0845	2"	N/A	-	-	12.69	19.96	-	First of Sep 19th
MW-3	0935	4"	N/A	-	-	12.48	26.32	-	
EW-2R	1020	4"	N/A	-	-	12.46	22.77	-	
MW-4	1133	4"	N/A	-	-	11.29	23.81	-	
MW-7	1225	4"	N/A	-	-	13.34	24.97	-	
MW-1	1320	4" ^{ME}	Sheen	14.23	0.02	14.25	24.30	-	No sample collected
MW-2	1445	4"	Both	12.98	0.06	13.04	24.98	-	No sample
EW-4	1545	4"	Odor	13.0 ^{ME}	-	13.07	22.88	-	
EW-1R	1725	4"	Both	12.30	0.15	12.45	14.02	-	Skimmer / No sample
^{ME}	All above were hoped to be sampled, all below were not.								
NW-obs	1825	4"	N/A	-	-	13.15	16.80	-	
NE-obs	1835	4"	N/A	-	-	12.26	14.92	-	
SE-obs	1847	4"	N/A	-	-	12.87	14.90	-	
SW-obs	1908	4"	N/A	-	-	12.13	13.50	-	No cap in well box
MW-6	1920	4"	Both	12.26	0.04	12.30	24.71	-	Skimmer worked great
MW-5	1940	4"	Odor	-	-	11.98	23.27	-	Skimmer pulled some

Notes:
 N - No
 Y - Yes
 GS - ground surface
 NA - not applicable
 NM - not measured
 TOC - top of casing



WELLHEAD INSPECTION FORM

PN: 5468 Date: 18-19/Sep/23 Page: 1 of 2
 Site: Springfield, OR Client: UP
 Technician: Matt Engel

Well ID	Well inspected - No corrective action required	Cap non-functional	Lock non-functional	Bolts missing (list quantity)	Tabs stripped (list quantity)	Tabs broken (list quantity)	Annular seal incomplete	Apron damaged	Rim/tid broken	Trip hazard	Below grade	Other (explain in notes)	Well not inspected (explain in notes)	NOTES - please note if cap or lock is replaced, if there are access issues associated with repairs, if traffic control is required, if stand pipe is damaged, or any other details not covered by checklist
MW-1	X	-	-	3	3	1	X	-	-	-	-	-	-	
MW-2	X	-	-	1	1	-	X	-	-	-	-	-	-	very heavy sheen in fluids in apron
MW-3	X	-	-	-	-	-	X	-	-	-	-	-	-	
MW-4	X	-	-	-	-	-	X	-	-	-	-	-	-	
MW-5	✓	-	-	-	-	-	-	-	-	-	-	-	-	Skimmer height adjusted
MW-6	✓	-	-	-	-	-	-	-	-	-	-	-	-	
MW-7	X	-	-	1	1	-	-	-	-	-	-	-	-	
MW-8	✓	-	-	-	-	-	-	-	-	-	-	-	-	
MW-9	✓	-	-	-	-	-	-	-	-	-	-	-	-	
MW-10	X	-	-	1	1	-	-	-	-	-	-	-	-	
MW-11	X	-	-	-	1	-	X	-	-	-	-	-	-	
EW-1R	X	-	-	0	1	-	X	-	-	-	-	X	-	Needs shorter skimmer, ~2 Ft tall max.
EW-2R	✓	-	-	-	-	-	-	-	-	-	-	-	-	
EW-4	X	-	-	0	2	-	X	-	-	-	-	-	-	
NW-obs	✓	-	-	-	-	-	-	-	-	-	-	-	-	
NE-obs	✓	-	-	-	-	-	-	-	-	-	-	-	-	

16 SE-Obs } Next page
 SW-Obs }



LOW-FLOW GROUNDWATER SAMPLING LOG

Project Name: Springfield
 Project Number: 5468
 Date: 19/Sep/23
 ES Personnel: Matt Engel

Well Number: MW-1
 Equipment: —
 Sample ID/Time: —
 Contractor: —

Well Diameter: 4"
 Reference: Top of Casing
 Casing Material: PVC
 Before After
 Depth to Water (ft) 14.25
 Depth of Well (ft) 24.30 NA
 Water Column Height (ft) 10.05
 Calculated Drawdown (ft) NA
 Depth to Top of Screen 5'
 Screen Length (ft) 20'
 Pump depth (ft) —

System Volume^(a) (ml) = bladder + discharge tubing
 Volume of bladder pump (ml): _____
 Volume of flow through cell (ml): _____
 Radius of discharge tubing (ft): _____
 Length of discharge tubing (ft): _____
 System Volume (ml): _____
 Total Volume Purged (ml): _____
 Total No. of SV Purged: _____
 Notes/Calcs: (a) flow cell disconnected before sample collection
 1ft of tubing = 10ml

WATER QUALITY INDICATOR PARAMETERS

Time	Volume (ml)	Water Level (ft)	Pumping Rate (ml)	Temp (°C)	pH	Conductivity (µs/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Color
No sample										
				Stability:	± 0.2 units	± 0.2 units	± 3-5%	± 10%	± 0.2 mg/L	± 20 mv

Notes: (weather, well and well box conditions, etc...) No sample collected, LPH visibly present

Dissolved Iron (Fe⁺²) = _____



LOW-FLOW GROUNDWATER SAMPLING LOG

Project Name: Springfield
 Project Number: 5469
 Date: 19/Sep/23
 ES Personnel: Matt Engel

Well Number: MW-2
 Equipment: VSE, per pump
 Sample ID/Time: _____
 Contractor: _____

Well Diameter: 4"
 Reference: Top of Casing
 Depth to Water (ft): 13.04
 Depth of Well (ft): 24.96
 Water Column Height (ft): 11.94
 Calculated Drawdown (ft): NA
 Depth to Top of Screen: 5'
 Screen Length (ft): 20'
 Pump depth (ft): —

Casing Material: PVC
 Before After

13.04	NA
24.96	NA
11.94	NA
NA	NA
5'	NA
20'	NA
—	NA

System Volume^(a) (ml) = bladder + discharge tubing
 Volume of bladder pump (ml): _____
 Volume of flow through cell (ml): _____
 Radius of discharge tubing (ft): _____
 Length of discharge tubing (ft): _____
 System Volume (ml): _____
 Total Volume Purged (ml): _____
 Total No. of SV Purged: _____

Notes/Calcs: (a) flow cell disconnected before sample collection
 1ft of casing = 10ml

WATER QUALITY INDICATOR PARAMETERS

Time	Volume (ml)	Water Level (ft)	Pumping Rate (ml)	Temp (°C)	pH	Conductivity (µs/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Color
No sample										
				Stability:	± 0.2 units	± 0.2 units	± 3-5%	± 10%	± 0.2 mg/L	± 20 mv

Notes: (weather, well and well box conditions, etc...) No sample collected, LPH visibly present

Dissolved Iron (Fe²⁺) = _____



LOW-FLOW GROUNDWATER SAMPLING LOG

Project Name: Springfield
 Project Number: 5468
 Date: 19/Sep/23
 ES Personnel: Matt Engel

Well Number: EW-1R
 Equipment: -
 Sample ID/Time: -
 Contractor: _____

Well Diameter: 4" Casing Material: PVC
 Reference: Top of Casing Before After

Depth to Water (ft)	<u>12.45</u>	NA
Depth of Well (ft)	<u>14.02</u>	
Water Column Height (ft)	<u>1.57</u>	
Calculated Drawdown (ft)	NA	
Depth to Top of Screen	<u>13'</u>	
Screen Length (ft)	<u>10'</u>	
Pump depth (ft)	<u>-</u>	

System Volume^(a) (ml) = bladder + discharge tubing
 Volume of bladder pump (ml): _____
 Volume of flow through cell (ml): _____
 Radius of discharge tubing (ft): _____
 Length of discharge tubing (ft): _____
 System Volume (ml): _____
 Total Volume Purged (ml): _____
 Total No. of SV Purged: _____

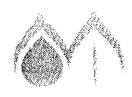
Notes/Calcs: (a) flow cell disconnected before sample collection
 1ft of tubing = 10ml

WATER QUALITY INDICATOR PARAMETERS

Time	Volume (ml)	Water Level (ft)	Pumping Rate (ml)	Temp (°C)	pH	Conductivity (µs/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Color
No sample										
				Stability:	± 0.2 units	± 0.2 units	± 3-5%	± 10%	± 0.2 mg/L	± 20 mv

Notes: (weather, well and well box conditions, etc...) No sample collected, LPH visibly present.

Dissolved Iron (Fe⁺²) = _____



LPH Removal Field Sheet

Project No.: <u>5469</u> PROJ-006811	United Pacific #5468
Sampler: <u>Matt Engel</u>	Gauging Date: <u>19/Sep/23</u>
Well ID: <u>MW-1</u>	Well Diameter (in): <u>4"</u>
Total Well Depth (ft): <u>24.30</u>	Depth to Water (ft): <u>14.25</u>
Depth to Free Product: <u>14.23</u>	Thickness of Free Product (ft): <u>0.02</u>
to: <u>14.25</u>	Equipment: <u>Golinast</u>

Purge Method: <u>Bailing</u>	Other: _____
Sampling Method: <u>None</u>	Other: _____

Purge Start Time: 1330 Flow Rate: — Pump Depth (ft): —

Time	DTP (feet btoc)	DTW	Water Removed	LPH Removed	
<u>1330</u>	<u>14.23</u>	<u>14.25</u>	<u>0.6 g</u>	<u>0.05</u>	

Note: water and LPH measurements are in gallons unless otherwise noted.

Did well dewater? : <u>No</u>	Amount of H2O actually evacuated: <u>0.6 gal</u>
Sampling Time: <u>—</u>	Sampling Date: <u>—</u>
Sample ID: <u>—</u>	Laboratory: <u>—</u>
Analyzed for: <u>—</u>	
Equipment Blank ID: <u>—</u>	Duplicate ID: <u>—</u>
Other Information:	

LPH Removal Field Sheet

Project No.: <u>5469</u>	PROJ-006811	United Pacific #5468
Sampler: <u>Matt Engel</u>		Gauging Date: <u>19/sep/23</u>
Well ID: <u>MW-2</u>		Well Diameter (in): <u>4"</u>
Total Well Depth (ft): <u>24.98</u>		Depth to Water (ft): <u>13.04</u>
Depth to Free Product: <u>12.98</u>		Thickness of Free Product (ft): <u>0.06</u>
to: <u>13.04</u>		Equipment: <u>Solinet</u>

Purge Method: <u>Bailing</u>	Other:
Sampling Method: <u>None</u>	

Purge Start Time: 1500 Flow Rate: - Pump Depth (ft): -

Time	DTP (feet btoc)	DTW	Water Removed	LPH Removed
<u>1500</u>	<u>12.98</u>	<u>13.04</u>	<u>99</u>	<u>99</u>

Did well dewater?: <u>No</u>	Amount of H2O actually evacuated: <u>1.20 gal</u>
Sampling Time: <u>-</u>	Sampling Date: <u>-</u>
Sample ID: <u>-</u>	Laboratory: <u>-</u>
Analyzed for: <u>-</u>	
Equipment Blank ID: <u>-</u>	Duplicate ID: <u>-</u>
Other Information:	

LPH Removal Field Sheet

Project No.: 5468	PROJ-006811	United Pacific #5468
Sampler: Matt Engel		Gauging Date: 19/sep/23
Well ID: EW-1R		Well Diameter (in): 4"
Total Well Depth (ft): 14.02		Depth to Water (ft): 12.45
Depth to Free Product: 12.30		Thickness of Free Product (ft): 0.15
to: 12.45		Equipment: Solinst

Purge Method: Bailing	Other: _____
Sampling Method: None	Other: _____

Purge Start Time: **1730** Flow Rate: **—** Pump Depth (ft): **—**

Time	DTP (feet btoc)	DTW	Water Removed	LPH Removed	
1725	12.30	12.45	3.25	0.15 (appx)	

Note: product was removed via skimmers. This skimmer was likely too tall to work well.

Did well dewater?: No	Amount of H2O actually evacuated: 3.25 gal
Sampling Time: —	Sampling Date: —
Sample ID: —	Laboratory: —
Analyzed for: —	
Equipment Blank ID: —	Duplicate ID: —
Other Information:	

LPH Removal Field Sheet

Project No.: 5468	PROJ-006811	United Pacific #5468
Sampler: Matt Engel		Gauging Date: 19/Sep/23
Well ID: MW-6		Well Diameter (in): 4"
Total Well Depth (ft): 24.71		Depth to Water (ft): 12.30
Depth to Free Product: 12.26		Thickness of Free Product (ft): 0.04
to: 12.30		Equipment: Solinst

Purge Method: Bailing	Other:
Sampling Method: None	

Purge Start Time: 1922 Flow Rate: - Pump Depth (ft): -

Time	DTP (feet btoc)	DTW	Water Removed	LPH Removed
1922	12.26	12.30	0.25	1.0 gal

Note: product was removed via skimmers.

Did well dewater?: No	Amount of H2O actually evacuated: 0.25 gal
Sampling Time: -	Sampling Date: -
Sample ID: -	Laboratory: -
Analyzed for: -	
Equipment Blank ID: -	Duplicate ID: -
Other Information:	

LPH Removal Field Sheet

Project No.: <u>5468</u>	PROJ-006811	United Pacific #5468
Sampler: <u>Matt Engel</u>	Gauging Date: <u>19/Sep/23</u>	
Well ID: <u>MW-5</u>	Well Diameter (in): <u>4"</u>	
Total Well Depth (ft): <u>23.27</u>	Depth to Water (ft): <u>11.98</u>	
Depth to Free Product: <u>N/A measurable</u>	Thickness of Free Product (ft): <u>None measured</u>	
to: <u>-</u>	Equipment: <u>Solinst</u>	

Purge Method: <u>Bailing</u>	Other:
Sampling Method: <u>None</u>	

Purge Start Time: 1942 Flow Rate: - Pump Depth (ft): -

Time	DTP (feet btoc)	DTW	Water Removed	LPH Removed
<u>1942</u>	<u>-</u>	<u>11.98</u>	<u>0.0</u>	<u>0.35</u>

Note: product was removed via skimmers.

Did well dewater?: <u>No</u>	Amount of H2O actually evacuated: <u>None</u>
Sampling Time: <u>-</u>	Sampling Date: <u>-</u>
Sample ID: <u>-</u>	Laboratory: <u>-</u>
Analyzed for: <u>-</u>	
Equipment Blank ID: <u>-</u>	Duplicate ID: <u>-</u>
Other Information:	

APPENDIX E

Montrose Groundwater Sampling Field Procedures

MONITORING WELL SAMPLING PROTOCOLS

The groundwater sampling procedures used by Montrose Environmental (Montrose) are designed to comply with local regulatory guidance and reflect the current professional standards and practices employed in the industry. A description of the groundwater sampling procedures is provided below.

Well Gauging

Initial site activities include determination of well locations based on a current site map. The area around each well is inspected to ensure that it is free of debris that could potentially fall into the well. A clean plastic trash bag or a piece of visqueen plastic sheeting is placed adjacent to the well to stage sampling equipment and supplies. Indications of well or well box damage are noted on appropriate field forms.

Prior to sampling, the construction details of each groundwater monitoring well to be sampled are reviewed to establish their respective depths and the length and placement of their screened intervals.

When the well is opened, the Technician will immediately measure the concentration of volatile organic vapors in the upper portion of the well casing with a photo-ionization detector (PID) calibrated to hexane. This measurement will guide the selection of respiratory protection equipment for sampling (as dictated by Montrose's Health and Safety Plan) at that particular well. Historical air monitoring data should also be referred to when selecting appropriate respiratory protection.

Prior to purging or sampling, initial static water levels are measured and recorded for all site wells. Depth to groundwater measurements accurate to 0.01 feet are obtained with an electronic sounding instrument that can also distinguish between liquid phase hydrocarbon (LPH) and water. The depths to LPH (if present), to water, and to the bottom of the well are measured from the top of the well casing (surveyors mark or notch if present). These measurements and the approximate thickness of potential LPH are recorded on the Fluid Level Measurement Form. Field forms are included in the Groundwater Monitoring Report as an Appendix.

As the measuring device is removed, it is thoroughly washed with a Liqui-nox/ water mixture and rinsed with distilled water. The tape is wiped dry with a paper towel as it is re-wound.

Note, wells that are found to contain LPH are not purged or sampled.

Traditional Well Purging

If purging is required, depth to groundwater measurements and well construction details are used to calculate the volume of water within each well casing.



During purging, the water quality parameters consisting of temperature, pH, conductivity, and turbidity are monitored as each well volume is removed. In some cases, additional water quality parameters, such as dissolved oxygen (DO) and oxidation-reduction potential (ORP), are also measured during purging. Purging continues until these parameters vary less than 10 percent from the previous reading, three well volumes are removed, or 80 percent of the well volume has been removed with no significant well recharge. Groundwater samples are collected without additional purging if the volume of groundwater in a well does not recover to at least 80 percent of its initial pre-purge measurement within two hours.

Depth to groundwater measurements, purge volumes, and water quality parameters obtained as each well is purged are recorded on Groundwater Monitoring Field Forms.

Instruments used for groundwater parameter measurements are calibrated daily in accordance with the manufacturer's instructions.

Purge water is generally collected in labeled 55-gallon, DOT-approved drums for disposal. Drums may be left on site in a secure location for disposal by others, or transported to a collection location for eventual transfer to a licensed treatment or recycling facility. In some cases, purge water is collected directly from the site by a licensed vacuum truck company, or treated on site by an active remediation system.

Low Flow, Minimal Drawdown Sampling

For non-LNAPL (floating product) sites: This procedure is designed to assist the user in taking representative groundwater samples from groundwater monitoring wells. The groundwater samples will be collected using low-flow (minimal drawdown) purging and sampling methods and is based upon U.S. EPA, Ground Water Issue, Publication #EPA/540/S-95/504, April 1996.

The field sampler's objective is to purge and sample the well so that the water that is discharged from the pump, and subsequently collected, is representative of the formation water from the aquifer's identified zone of interest.

1. Calibrate all field instruments at the start of each day's deployment per the instrument manufacturer's instruction. Record calibration data on the appropriate field calibration documentation form.
2. Begin sampling at the least contaminated and preferably upgradient well(s). Make notes describing the well condition, personnel, weather, location, etc.



3. Use only new, dedicated and/or clean (phosphate-free detergent, rinse and triple rinsed) equipment and sampling supplies. The water level meter, low-flow pump, discharge tubing and/or bailer will either be new or decontaminated before well gauging and sampling. Note - anything placed into a monitoring well must be CLEANED and DECONTAMINATED beforehand.
4. Measure the depth to water from the surveyed reference mark on the wellhead and record the measurement on the gauging and sampling sheet. Lock the water level meter in place so that the level can be monitored during purging and sampling. When placing the probe in the well, take precautions to not disturb or agitate the water. Where compounds of interest are known to concentrate near the top or the bottom the screen zone, locate the pump intake or end of tubing in the upper one-third or lower one-third of the interval, respectively.
5. Connect the compressed air source's airline to the pump controller's "AIR IN" connection (if utilizing a gas-engine operated generator, locate the generator at least 25 feet downwind from the wellhead). If using a peristaltic pump located at the surface, connect the flexible tubing to the pump drive head.
6. Connect the pump controller "AIR OUT" air-line to the bladder pump's air supply fitting at the wellhead (if using an electric pump, connect to generator's electric panel). If using a peristaltic pump, connect downhole tubing to flexible tubing in pump drive head.
7. Connect the pump discharge line to the in-line flow cell's "IN" fitting. If electric, same as above. If using a peristaltic pump, connect the discharge tubing to the "IN" fitting of the flow cell.
8. Connect the flow cell's "OUT" line and secure to drain the purge water into the purge water collection container.
9. Turn on or start the air supply to the pump. Set the pump controller settings to the documented settings for the specific well. Confirm the flow rate is equal to the well's established optimum flow rate, not to exceed 1 liter (1,000 ml) per minute. Modify as necessary and document any required modification. If electric, document MHz pump frequency for optimum flow rate.
10. Monitor the water level and confirm that the water level drawdown has stabilized within the well's allowable limits. Minimal drawdown is to be achieved which is less than 1/3-foot.



11. After a single pump-system's volume (bladder volume + discharge tubing volume, or for peristaltic pump downhole tubing volume + flexible tubing volume) has been adequately purged, read and record water quality field measurements every three to five minutes until all parameters have stabilized within their allowable ranges for at least three consecutive measurements. When stabilization has been achieved, sample collection may begin.
12. Disconnect the flow cell and its tubing from the pump line before collecting samples. Decrease the pump (MHz) rate to 100 millimeters per minute or less by lowering the controller's air pressure setting or MHz pump frequency prior to collecting samples for volatiles. If using a peristaltic pump, cut the discharge tubing between the pump head drive and the "IN" fitting on the flow cell. Place the samples in a cooler with enough ice to keep them at four degrees Celsius.
13. Once samples for volatiles have been collected, re-established pump flow rate to the original purge flow rate by inputting the documented controller settings for the well without the In-Line Flow Cell connected and collect remaining samples.
14. When all sample containers have been filled, make a final measurement of the well's Static Water Level and record the measurement on the gauging and sampling sheet.
15. Measure and record total purge volume collected. Consolidate generated purge water.
16. Remove and decontaminate the In-Line Flow Cell with phosphate-free detergent and triple rinse. If using a peristaltic pump, disconnect flexible tubing portion from the pump drive head. If dedicating the downhole tubing to the well, place tubing in the well in such a way that it will be easily retrievable during the next sampling event.
17. Disconnect the controller air supply to the pump. Disconnect electric cables to generator.
18. Secure the wellhead cover and secure with its lock. Move equipment to next well to be sampled.

Groundwater Sampling

After wells are purged, or not purged, according to agency-approved instructions or guidelines, groundwater samples are collected for laboratory analysis.



Groundwater samples will be collected from each well directly from the discharge tubing, of which the intake end is located within the screened interval. Groundwater samples should NOT be passed through the low-flow cell, or through any groundwater quality measuring device prior to collection. Groundwater brought to the surface is conveyed into appropriate laboratory prepared containers for each required analysis.

After filling, sample containers are immediately capped. Particular care is given to containers for volatile organic analysis (VOAs), which require filling to zero headspace and fitting with Teflon-sealed caps.

Each sample container is labeled with the project number (or site ID), well designation, sample date, and the samplers initials, and then immediately sealed in a zip lock bag and placed in a pre-chilled, insulated chest with ice. Samples remain chilled prior to and during transport to a state-certified laboratory for analysis. Sample container description and requested analyses are entered onto a chain-of-custody form to provide instruction for the laboratory. The chain-of-custody form accompanies the samples during transportation to provide a continuous record of possession from the point of collection to the laboratory. If a freight or overnight carrier transports the samples, the carrier is noted on the form along with the package tracking number.

For wells that are connected to a treatment system, samples are taken from the sample ports of actively pumping remediation wells.

Sequence of Gauging, Purging, and Sampling

The sequence in which monitoring activities are conducted is determined on a site-specific basis. In general, wells are gauged beginning with the least-affected well and ending with the well that has the highest contaminant concentration based on previous analytical results. After gauging is completed, wells are purged and/or sampled in the order of least-affected to most-affected wells.

Field QA/QC Procedures

A trip blank field sample is used to ensure that sample collection and handling procedures do not introduce contaminants into the groundwater samples. The trip blank is prepared by filling sample containers in the field with de-ionized water. The sample containers are labeled as "Trip Blank," placed in the cooler with other groundwater samples, and transported to the laboratory for analysis.

Silica Gel Cleanup of Groundwater Samples

Unless clearly specified by the project manager and subsequently noted on the chain-of-custody, groundwater samples that are to be analyzed for diesel and heavy oil using Methods NWTPH-Dx/Ox will not be 'cleaned-up' using silica gel or any other agents.

If samples that are to be analyzed for TPH-Dx/Ox are subjected to silica gel cleanup



procedures, that fact will be noted on the chain-of-custody, the analytical report and in the groundwater monitoring report.

Decontamination

To reduce the potential for cross-contamination between wells, strict isolation and decontamination procedures are observed.

Portable pumps are not used in wells with LPH. Technicians wear nitrile gloves during all gauging, purging and sampling activities. Gloves are changed between wells and more often if warranted. Any equipment that may come in contact with fluids is either dedicated to a particular well, decontaminated prior to each use, or discarded after a single use. Decontamination consists of a four-stage decontamination process: a phosphate-free detergent (Liqui-nox) wash, a double potable-water rinse, and a final deionized water rinse.

Exceptions

Additional tasks or non-standard procedures that may be requested or required for a particular site are documented on the appropriate field notes/forms.

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