Fourth Quarter 2023 Monitoring Report
Former Johnson Oil
280 E Columbia River Highway
Clatskanie, Oregon

Prepared for:
Oregon Department of Environmental Quality
Task Order No. 066-23-04

February 27, 2024
32-23005297/Task 3

Fourth Quarter 2023 Monitoring Report
Former Johnson Oil
280 E Columbia River Highway
Clatskanie, Oregon

Prepared for:
Oregon Department of Environmental Quality
Task Order No. 066-23-04

February 27, 2024
32-23005297/Task 3

Steve Misner, R.G.
Senior Associate

REGISTERED PROFESSIONAL ENGINEER 17,296 OREGON JULY 19, 1994 MICHAEL W. STEVENS EXPIRES JUNE 30, 2024

Michael Stevens, P.E.
Principal Engineer

Table of Contents

1.0 INTRODUCTION 1
1.1 Scope of Work 1
2.0 BACKGROUND 1
2.1 Site Location and Description 1
3.0 FIELD ACTIVITIES 2
3.1 Pre-Investigation Activities 2
3.2 Groundwater Monitoring 2
3.3 Soil Vapor Sampling 3
3.4 Ambient Air Sampling 3
3.5 Handling of Investigation-Derived Waste 4
4.0 CHEMICAL ANALYSES AND RESULTS 4
4.1 Analyses Performed 4
4.2 Chemical Results 4
5.0 CONCLUSIONS 7
6.0 REFERENCES 8

Tables

1 Groundwater Elevations and Field Parameters
2 Groundwater Analytical Results
3 Soil Vapor Analytical Results
4 Ambient Air Analytical Results

Figures

1 Site Location Map
2 Site Plan
3 Groundwater Elevations (November 2023)
4 Groundwater Analytical Results (November 2023)
5 Soil Vapor and Ambient Air Analytical Results (November 2023)

Appendices

A Sampling Documentation
B Laboratory Analytical Reports and Data Quality Review

1.0 Introduction

This Fourth Quarter Monitoring Report (QMR) describes the field activities and presents the results of a groundwater monitoring event and soil vapor and ambient air sampling completed in November 2023 at the Former Johnson Oil property and the adjacent property currently occupied by Turning Point Community Service Center (the Site; Figures 1 and 2) located at 280 East Columbia River Highway, Clatskanie, Oregon. The Site is located adjacent to the Clatskanie River in Columbia County. The monitoring event was conducted for the Oregon Department of Environmental Quality (DEQ) under Task 2 of Task Order No. 066-23-04, and this report was prepared under Task 3. The Site is listed in DEQ's Leaking Underground Storage Tank (LUST) database as LUST ID 05-87-0033.

1.1 Scope of Work

The scope of work was completed in accordance with the Supplemental Site Investigation Work Plan (Work Plan; Apex Companies, LLC [Apex], 2022). The scope of work for this monitoring event includes collection and analysis of groundwater samples from ten existing monitoring wells, collection and analysis of three soil vapor samples, and collection and analysis of four ambient air samples.

2.0 Background

This section presents a description of the Site, its anticipated geology and hydrogeology, and previous work that has been done at the Site.

2.1 Site Location and Description

The Site is located on an approximately 0.26-acre parcel (Figures 1 and 2) near the center of the City of Clatskanie on the south bank of the Clatskanie River and is bounded to the south by the Columbia River Highway (Hwy 30). The Site includes the former service station property and the adjacent property occupied by Turning Point Community Service Center (Turning Point). The former Johnson Oil property is improved with a vacant former service station with an associated pump island (dispensers have been removed) and canopy. The Site and surrounding properties are zoned commercial, but the zoning rules allow for residential use in conjunction with commercial use. Turning Point is located adjacent to the north and west, and the property to the east is currently vacant (formerly a produce market that burned down).

The Site is located at approximately 18 feet above mean sea level, and topography is generally level but slopes steeply down to the Clatskanie River along the north side of the Site. The Site is located within the Oregon Coast Range and is underlain by unconsolidated Quaternary alluvial deposits of silt and interbedded sand lenses to a depth of approximately 50 feet below ground surface (bgs). Sandstone and siltstone of the Astoria Formation underlie the alluvial deposits (Orr, 1999). Based on boring logs associated with Site

investigations, near surface geology generally consists of gravelly fill material to a depth of 1 to 5 feet bgs overlying sand.

Shallow groundwater is present beneath the Site at depths ranging from approximately 1-foot bgs on the northwestern portion of the Site to 10 feet bgs adjacent to the river and on the southwestern side of the Site. Groundwater generally flows toward the Clatskanie River with a less pronounced southwesterly component and may be tidally influenced. Some of the groundwater monitoring wells at the Site exhibit slow recovery based on data collected in 2019 through 2023.

3.0 Field Activities

3.1 Pre-Investigation Activities

Site Health and Safety Plan. A Site-specific health and safety plan (HASP) was prepared for the field activities and included in Appendix B of the Work Plan. The HASP was prepared in general accordance with the Occupational Safety and Health Administration (OSHA) and the Oregon Administrative Rules (OAR). A copy of the HASP was maintained onsite during the field activities.

Property Access. DEQ obtained access agreements with Columbia County (the Former Johnson Oil property owner) and Turning Point for access to the Site for the monitoring activities. Apex coordinated the timing of Site access with the County and Turning Point.

3.2 Groundwater Monitoring

Groundwater Levels. On November 7, 2023, groundwater levels were measured using an electronic water level indicator for monitoring wells MW-4 through MW-9 and MW-12 through MW-15. All wells were opened, and the water level was allowed to equilibrate before the measurements were taken. The depth to groundwater was measured in each well to the nearest 0.01 foot. The depth to groundwater and groundwater elevations are presented in Table 1. Water level documentation is included in Appendix A.

In general, the November 2023 groundwater elevation data suggest a significantly variable groundwater flow across the Site with primarily a southeast to south flow direction under a hydraulic gradient of approximately 0.02 feet per foot (ft/ft). The groundwater elevations and elevation contours are presented on Figure 3. The groundwater flow direction adjacent to the Clatskanie River is towards the river under a gradient of approximately 0.19 ft/ft and may be tidally influenced. The groundwater flow direction and gradients observed during the November 2023 monitoring event are consistent with previous events.

Groundwater Sampling. Samples were collected using a peristaltic pump and low-flow protocols. New tubing was used on each monitoring well. Field parameters collected during sampling included temperature, pH,

conductivity, dissolved oxygen concentration (DO), and oxidation-reduction potential (ORP). Field parameters are summarized in Table 1. Groundwater monitoring documentation is included in Appendix A.

Consistent with prior monitoring events, the field parameters measured in monitoring well MW-9 are distinct from the observations in the other nine monitoring wells; the pH and conductivity values are lower and the DO and ORP values are significantly higher (the DO and ORP measurements in the other wells consistently show an anaerobic and reducing environment while MW-9 exhibits a relatively aerobic and oxidizing environment). The low DO and ORP observed in the other monitoring wells are consistent with expectations in the vicinity of a hydrocarbon plume influenced by microbial degradation (as the available oxygen is being utilized by the micro-organisms), suggesting that MW-9 is not being influenced by this process. There may also be a relationship between the high (oxidizing) ORP and the relatively low pH observed in MW-9. Furthermore, the combination of the higher DO and ORP, the unique lack of detected analytes in the laboratory sample (discussed below), and the markedly lower groundwater elevation observed in MW-9 suggest that the well may be influenced by groundwater-surface water interaction with the adjacent Clatskanie River. However, there isn't enough data available to distinguish any specific relationship between the aquifer and the river or to compare results to the local aquifer outside of the influence of the petroleum plume. In addition, the field parameters observed in monitoring wells MW-14 and MW-15, which are approximately equidistant from the river as monitoring well MW-9, do not exhibit the same variation as the field parameters observed in MW-9, although the groundwater elevation is higher in these monitoring wells.

3.3 Soil Vapor Sampling

Soil vapor samples were collected on November 7, 2023 from sub-slab vapor points SG-7, SG-8 (located within the Turning Point building), and SG-10 (located within the former service station building). The locations of the soil vapor points are shown on Figure 2. Each soil vapor sample was collected in a 1-Liter Summa canister equipped with 200 cubic centimeters per minute (cc/min) flow controllers in accordance with the Standard Operating Procedure in Appendix A of the Work Plan.

3.4 Ambient Air Sampling

Radiello® radial diffusive sampling devices were used to collect three indoor ambient air samples (samples AMB-1 and AMB-2 within the Turning Point building and sample AMB-4 within the former service station building), and one outdoor ambient air sample (AMB-3 located under the awning on the southwest corner of the Turning Point building). The locations of the ambient air samples are shown on Figure 2. The ambient air samplers within and outside the Turning Point building were positioned approximately 6 feet above the ground surface. The ambient air sampler within the former service station building was positioned on a table in the office portion of the building. The ambient air samplers were deployed for a period of six days (deployed on November 7, 2023 and retrieved on November 13, 2023). At the conclusion of the deployment period, the adsorbent cartridges were placed back into their original tubes, the sample end time was added to the sample labels, and the samples were shipped to the analytical laboratory.

3.5 Handling of Investigation-Derived Waste

Investigation-derived waste (IDW) consisted of purge water and decontamination water. IDW water was placed in a 5-gallon bucket and temporarily stored inside the former service station building, pending characterization, disposal profiling, and removal from the Site. The container was labeled with the project name, general contents, and date.

Disposable items, such as sample tubing, gloves, paper towels, etc., were placed in plastic bags after use and deposited in trash receptacles for disposal.

4.0 Chemical Analyses and Results

Groundwater and soil vapor samples were submitted to Pace Analytical National located in Mount Juliet, Tennessee for analysis. The ambient air (Radiello) samples were submitted to Eurofins Air Toxics located in Folsom, California for analysis. Sample analysis was conducted on a standard turnaround basis. Copies of the analytical laboratory reports are included in Appendix B along with a quality assurance/quality control (QA/QC) review of the data. The results of the data quality review indicate that the data are of acceptable quality and are suitable for their intended purpose.

4.1 Analyses Performed

4.1.1 Groundwater

Groundwater samples were analyzed for gasoline-range total petroleum hydrocarbons (TPH-G) by Northwest Method NWTPH-Gx and for volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method 8260D.

4.1.2 Soil Vapor

Soil vapor samples were analyzed for VOCs, including low fraction total petroleum hydrocarbons, by EPA Method TO-15.

4.1.3 Ambient Air

Ambient air samples collected were analyzed by for selected VOCs by EPA Method TO-17- RAD145.

4.2 Chemical Results

The analytical results and risk screening of the groundwater, soil vapor, and ambient air samples collected in November 2023 are summarized below. The concentrations were screened against the risk-based concentrations (RBCs) that correspond to the potentially complete exposure pathways including groundwater

to indoor air (occupational receptor), groundwater in excavations (construction and excavation worker receptor), soil vapor intrusion, and indoor air published in *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (DEQ, updated June 2023). Section 4.2.4 provides a summary of potential exposure pathways.

4.2.1 Groundwater

Groundwater analytical results are presented in Table 2 and summarized on Figure 4 for the November 2023 groundwater monitoring event.

Total Petroleum Hydrocarbons. TPH-G was detected in each of the 10 groundwater samples collected during the November 2023 monitoring event. The detected concentrations of TPH-G ranged from 35.5 micrograms per liter (µg/L; MW-8) to 104,000 µg/L (MW-12) and exceeded the RBC of 520 µg/L in eight of the 10 samples. The TPH-G concentration in the sample collected from MW-12 also exceeded the RBC for groundwater in excavations for construction and excavation workers. In addition, the TPH-G concentration in the sample collected from monitoring well MW-12 may indicate the presence of light non-aqueous phase liquid in the vicinity of the well (the theoretical upper limit of dissolved-phase concentration for fresh gasoline is approximately 100,000 µg/L; Interstate Technology & Regulatory Council, 2018). The TPH-G concentrations in samples collected from monitoring wells MW-13, MW-14, and MW-15 are generally lower than in recent monitoring events. The TPH-G concentration detected in the sample collected from monitoring well MW-4 is consistent with previous 2023 monitoring events. The TPH-G concentrations detected in the samples collected from monitoring wells MW-8, MW-13, MW-14, and MW-15 are the lowest detected since sampling began in each of the respective monitoring wells. The TPH-G concentrations detected in the samples collected from monitoring wells MW-5, MW-6, and MW-12 are generally higher than in recent monitoring events but within the range of historically observed concentrations except for MW-12, which is the relative highest since sampling began in this monitoring well. The TPH-G concentration in the sample collected from monitoring well MW-7 is slightly higher than the September 2023 sampling event but is lower than other previous sampling events.

Volatile Organic Compounds. Several petroleum VOCs (benzene, ethylbenzene, xylenes, and naphthalene) were detected at concentrations that exceed the RBCs in seven of the 10 groundwater samples collected in November 2023. The benzene RBC for the groundwater to indoor air pathway (12 µg/L) was exceeded in seven of the 10 groundwater samples. The ethylbenzene RBC for the groundwater to indoor air pathway (31 µg/L) was exceeded in five of the 10 groundwater samples. The benzene and ethylbenzene concentrations in the groundwater sample collected from MW-12 were an order of magnitude higher than the other RBC exceedances for the groundwater to indoor air pathway and were the only concentrations to exceed the groundwater in excavation pathway. The total xylenes RBC (3,300 µg/L) was exceeded in the sample collected from monitoring well MW-12 (22,500 µg/L) but not in any of the other samples. The naphthalene RBC for the groundwater to indoor air pathway (50 µg/L) was exceeded in the groundwater samples collected from monitoring wells MW-4, MW-5, and MW-12 but not in any of the other samples.

The detected benzene and ethylbenzene concentrations are relatively consistent with previous monitoring events in samples collected from monitoring wells MW-8, MW-9 (no VOCs detected), and MW-13. They generally decrease in samples collected from monitoring wells MW-14 and MW-15 (lowest benzene concentration detected to date) and increase in samples collected from monitoring wells MW-4, MW-5, MW-6, and MW-7. The benzene concentrations in the samples collected from monitoring wells MW-4 and MW-5 are the highest since monitoring began in these wells. In the sample collected from MW-12, the benzene concentration decreased slightly, but the ethylbenzene concentration increased approximately threefold from the previous monitoring event to its highest concentration since monitoring began in MW-12.

4.2.2 Soil Vapor

Soil vapor results are presented in Table 3 and summarized on Figure 5. None of the VOCs or TPH-G detections in the soil-vapor samples collected in the November 2023 monitoring event contain concentrations in excess of RBCs for chronic exposure in a commercial setting.

TPH-G was detected in two of the collected soil vapor samples, SG-7 at 1,400 µg/m^3 and SG-10 at 1,160 µg/m^3. TPH-G has not been detected in SG-10 during previous monitoring events.

VOCs were detected in all three soil vapor samples collected in November 2023, including both petroleum VOCs and non-petroleum VOCs. The soil vapor samples collected from SG-7 and SG-10 had nearly equal total VOC concentrations of 171.77 µg/m^3 and 171.39 µg/m^3, respectively. The soil vapor sample collected from SG-8 contained low VOC concentrations and no detections of TPH-G.

Trichloroethylene (TCE) was not observed in any of the samples collected in November 2023. TCE was previously detected in the soil vapor sample collected from SG-10 during the April 2023 sampling event. Tetrachloroethylene (PCE) has not been previously detected in soil vapor samples collected from SG-7, but was present at a concentration of 2.96 µg/m^3 in the November 2023 sample. PCE has been detected in samples collected from locations SG-8 and SG-10 in previous sampling events but was not present in the November 2023 samples.

4.2.3 Ambient Air

Ambient air sample results are presented in Table 4 and summarized on Figure 5. VOCs were detected in all four collected samples, including both petroleum VOCs and non-petroleum VOCs. TPH analysis is not included in the passive RAD145 TO-17 analyte list.

Benzene was detected in each of the four ambient air samples collected, with concentrations exceeding the RBC of 1.6 µg/m^3 for commercial exposure in samples AMB-1 and AMB-2 (within the Turning Point building at detected concentrations of 2.1 µg/m^3 and 1.8 µg/m^3, respectively). The benzene concentrations in these

samples were above the concentration in the outdoor ambient sample (1.1 µg/m^3) by factors of 1.9 and 1.6, respectively. All other detections of VOCs were either not detected or were below applicable RBCs.

4.2.4 Site Data Screening Summary

The observed exceedances of Site-related contaminants for each exposure pathway are summarized below.

Contaminant	Exposure Pathways			
	Groundwater Pathways		Soil Vapor	Ambient Air
	Vapor Intrusion	Groundwater in Excavations	Vapor Intrusion	Vapor Intrusion
TPH-G	**Com (8)**	**Ex (1)**	No	No
Benzene	**Com (7)**	**Ex (1)**	No	**Com (2)**
Ethylbenzene	**Com (6)**	**Ex (1)**	No	No
Xylenes	**Com (1)**	No	No	No
Naphthalene	**Com (3)**	No	No	No

Notes: Ex = Exceeds Excavation Worker RBC
Com = Exceeds Commercial Chronic RBC
No = No exceedances of RBCs
(#) = Number of Samples Exceeding November 2023 RBC

5.0 Conclusions

Based on the fourth quarter 2023 groundwater, soil vapor, and ambient air monitoring event and previous events, impacts from gasoline-range hydrocarbons and petroleum-related VOCs continue to be present at the Site and extend beneath the former Johnson Oil and Turning Point buildings. The presence of observed concentrations of benzene in indoor air at concentrations above the commercial RBC (and the background ambient concentration) indicates a potentially unacceptable exposure risk, but additional data is needed for this determination. DEQ's occupational RBCs are based on an exposure frequency of 250 days/year and, therefore, this RBC is likely overly conservative and not representative of the actual exposure of Turning Point occupants due to their reduced operating hours of 3 days per week (156 days per year). Further, the indoor air concentrations only slightly exceeded the outdoor ambient air sample collected from the exterior of the Turning Point building and may be attributable to other sources (products, supplies) stored or used in the building or vehicle exhaust from nearby Highway 30.

Elevated concentrations of TPH-G and VOCs (benzene, ethylbenzene, total xylenes, and naphthalene) above the commercial vapor intrusion RBCs in groundwater suggest that the impacts to indoor air could be associated with the Site groundwater contamination, but additional data is needed to fully assess this relationship. The TPH-G and benzene concentrations in the groundwater sample collected from monitoring well MW-12 are the highest recorded since this well was installed in 2023. The TPH-G concentrations detected in the samples collected from monitoring wells MW-8, MW-13, MW-14, and MW-15 are the lowest

since monitoring began in these monitoring wells. Groundwater, soil vapor, and ambient air monitoring will continue through at least the first quarter of 2024.

6.0 References

Apex Companies, LLC, 2022. *Supplemental Site Investigation Work Plan, Former Johnson Oil*. December 8, 2022.

Interstate Technology & Regulatory Council, 2018. *TPH Risk Evaluation at Petroleum-Contaminated Sites*. ITRC Risk Evaluation Team, https://tphrisk-1.itrcweb.org.

Oregon Department of Environmental Quality, 2003. *Risk-Based Decision Making for the Remediation of Contaminated Sites*. September 22, 2003. Updated June 2023.

Orr, Elizabeth L. and Willian N. Orr, 1999. *Geology of Oregon*. January 1, 1999.

Table 1
Groundwater Elevations and Field Parameters
Former Johnson Oil
Clatskanie, Oregon

Monitoring Well	Well Information						Field Parameters				
	Date	Top of Casing Elevation (Feet[1])	Depth to Groundwater (Feet BTOC)	Depth to Product (Feet BTOC)	Product Thickness (Feet)	Groundwater Elevation (Feet[1])	pH	Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)
MW-4	5/10/2018	94.43	1.12	--	--	93.31	6.71	13.57	290	0.27	-67.4
	6/13/2018		1.30	--	--	93.13	--	--	--	--	--
	5/23/2019		0.97	--	--	93.46	6.44	13.34	283	--	-84.7
	7/10/2023		2.43	--	--	92.00	--	--	--	--	--
	9/16/2019		2.61	--	--	91.82	--	--	--	--	--
	10/17/2019		1.38	--	--	93.05	--	--	--	--	--
	3/29/2023		1.00	--	--	93.43	7.14	11.90	466	0.17	-136.1
	5/22/2023		1.77	--	--	92.66	6.92	13.50	460	0.28	-106.6
	9/21/2023		4.27	--	--	90.16	5.73	17.74	464	0.68	-115.4
	11/7/2023		0.9	--	--	93.53	6.43	15.82	585	0.23	-98.1
MW-5	5/23/2019	94.30	4.65	--	--	89.65	6.06	13.70	189	--	30.6
	7/10/2019		4.86	--	--	89.44	--	--	--	--	--
	9/16/2019		5.79	--	--	88.51	--	--	--	--	--
	10/17/2019		4.59	--	--	89.71	--	--	--	--	--
	3/29/2023		3.76	--	--	90.54	6.92	11.50	448	0.50	-137.5
	5/22/2023		3.94	--	--	90.36	6.64	13.00	339	0.80	-120.7
	9/21/2023		6.79	--	--	87.51	5.37	16.51	324	0.66	-98.5
	11/7/2023		2.56	--	--	91.74	6.24	15.35	417	0.18	-104
MW-6	5/23/2019	95.57	4.57	--	--	91.00	5.95	13.76	181.000	--	3.00
	7/10/2019		6.55	--	--	89.02	--	--	--	--	--
	9/16/2019		7.31	--	--	88.26	--	--	--	--	--
	10/17/2019		7.48	--	--	88.09	--	--	--	--	--
	3/29/2023		4.61	--	--	90.96	6.94	12.30	576	0.30	-118.6
	5/22/2023		6.66	--	--	88.91	6.62	13.50	479	0.28	-84.8
	9/21/2023		7.68	--	--	87.89	5.64	17.73	452	0.62	-117.5
	11/7/2023		4.93	--	--	90.64	6.13	17.28	432	0.21	-78.8
MW-7	3/23/2019	95.04	8.02	--	--	87.02	5.64	15.12	644	2.65	45.8
	7/10/2019		6.23	--	--	88.81	--	--	--	--	--
	9/16/2019		7.33	--	--	87.71	--	--	--	--	--
	10/17/2019		10.39	--	--	84.65	--	--	--	--	--
	3/29/2023		5.37	--	--	89.67	6.79	13.60	673	0.07	-111.0
	5/22/2023		10.62	--	--	84.42	6.53	14.80	708	1.28	-73.2
	9/20/2023		6.20	--	--	88.84	5.35	19.00	491	0.61	-92.6
	11/7/2023		7.71	--	--	87.33	5.96	17.00	383	0.23	-32.0

Please see notes at end of table.

Table 1
Groundwater Elevations and Field Parameters
Former Johnson Oil
Clatskanie, Oregon

Monitoring Well	Well Information						Field Parameters				
	Date	Top of Casing Elevation (Feet[1])	Depth to Groundwater (Feet BTOC)	Depth to Product (Feet BTOC)	Product Thickness (Feet)	Groundwater Elevation (Feet[1])	pH	Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)
MW-8	5/24/2019	96.22	5.43	--	--	90.79	6.25	14.55	886	--	-72.4
	7/10/2019		6.01	--	--	90.21	--	--	--	--	--
	9/16/2019		6.32	--	--	89.90	--	--	--	--	--
	10/17/2019		6.43	--	--	89.79	--	--	--	--	--
	3/29/2023		5.17	--	--	91.05	6.65	12.30	946	0.68	-99.6
	5/22/2023		5.74	--	--	90.48	6.41	14.20	827	0.23	-76.0
	9/20/2023		6.80	--	--	89.42	5.44	19.53	868	0.07	-130.4
	11/7/2023		6.11	--	--	90.11	6.11	18.30	902	0.34	-127.1
MW-9	5/23/2019	94.54	10.41	--	--	84.13	4.62	12.90	610	2.88	34.1
	7/10/2019		10.28	--	--	84.26	--	--	--	--	--
	9/16/2019		8.21	--	--	86.33	--	--	--	--	--
	10/17/2019		4.68	--	--	89.86	--	--	--	--	--
	9/20/2023		9.09	--	--	85.45	3.71	15.44	146	3.77	256.0
	11/7/2023		5.07	--	--	89.47	4.99	14.47	52	2.19	223.0
MW-12	3/29/2023	99.06	4.41	--	--	94.65	6.51	11.80	389	1.36	71.5
	5/22/2023		4.78	--	--	94.28	6.47	13.20	371	0.32	-59.1
	9/21/2023		7.50	--	--	91.56	5.33	18.73	544	0.58	-103.8
	11/7/2023		5.26	--	--	93.80	6.11	16.18	325	0.38	-67.8
MW-13	3/29/2023	98.28	2.75	--	--	95.53	7.95	10.60	670	0.00	-103.2
	5/22/2023		3.40	--	--	94.88	7.27	12.70	541	0.42	-87.9
	9/20/2023		5.67	--	--	92.61	6.03	18.42	912	0.60	-116.3
	11/7/2023		2.54	--	--	95.74	6.79	16.15	901	0.25	-65.3
MW-14	3/29/2023	99.28	7.95	--	--	91.33	6.51	11.40	507	0.08	-31.6
	5/22/2023		6.83	--	--	92.45	6.58	12.00	594	0.46	-38.6
	9/20/2023		10.00	--	--	89.28	5.69	15.44	705	0.58	-131.6
	11/7/2023		7.97	--	--	91.31	5.98	14.87	425	0.18	-90.5
MW-15	3/29/2023	100.32	8.30	--	--	92.02	6.46	11.90	699	4.83	51.6
	5/22/2023		6.78	--	--	93.54	6.63	12.00	445	0.30	-86.7
	9/20/2023		9.67	--	--	90.65	5.2	14.18	577	0.73	-72.9
	11/7/2023		7.87	--	--	92.45	5.95	13.72	348	0.21	-59.4

Notes:

1. Elevations are relative to an assumed reference datum of 100 feet (point located at the northwest corner of a concrete pad for a metal sign along Highway 30).
2. BTOC = Below Top of Casing.
2. NS = Not surveyed.
3. °C = Degrees Celsius.
4. µS/cm = MicroSiemens per centimeter
5. mg/L = Milligrams per liter.
6. ORP (mV) = Oxidation-reduction potential (millivolts).

Table 2
Groundwater Analytical Results
Former Johnson Oil
Clatskanie, Oregon

Monitoring Well Number	Sample Date	Concentrations in µg/L								
		TPH-G	Benzene	Toluene	Ethylbenzene	Total Xylenes	Methyl tert-butyl ether	Naphthalene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene
MW-4	5/10/2018	14,400	18.5	10.9 J	619	1,720	<0.367	283 J	1,190	404
	5/10/2018 DUP	14,000	17.1	4.19 J	590	1,570	<0.367	278 J	1,170	392
	5/23/2019	7,340	117	2.07	436	43.2	<0.0367	284	58.3	22.9
	5/23/2019 DUP	7,600	115	1.67	444	38.5	<0.367	291	52.6	21.8
	3/29/2023	5,720	84.5	1.83	196	3.43	<0.101	213	1.05	0.934 J
	5/22/2023	4,660	87.6	<10.0	188	<30.0	<10.0	117 J-	<10.0	<10.0
	9/21/2023	4,950	60.8	1.29	287	2.69 J	<1.00	363	0.412 J	0.292 J
	11/8/2023	4,870	199.0	<20.0	354	9.63 J	<20.0	137	<20.0	<20.0
MW-5	5/23/2019	3,590	46.2	5.82	428	45.8	<0.367	151	48.6	22.7
	3/30/2023	6,270	68.4	4.24	380	14.3	<0.101	178	0.561 J	1.99
	5/23/2023	4,790	56.3	3.2 J	208	7.81 J	<10.0	54.9 J-	<10.0	<10.0
	9/21/2023	3,430	32.0	2.13	200	9.57	<1.00	120	0.341 J	0.975 J
	11/8/2023	6,100	141.0	13.1	244	29.4 J	<10.0	220	<10.0	2.58 J
MW-6	5/23/2019	28,100	1,690	1,500	2,250	4,180	<18.4	241 J	809	206
	3/29/2023	1,490	609	8.50	240	194	<0.101	45.1	42.9	10.3
	5/22/2023	4,720	665	14.2 J	297	88.9 J	<50.0	<250 UJ	<50.0	11.1 J
	9/21/2023	2,450	379	6.25	92.7	41.1	<1.00	9.88	<1.00	2.57
	11/8/2023	6,250	772	11.20	230	74.3	<10.0	28.0 J	6.60 J	5.36 J
MW-7	5/23/2019	5,610	524	<8.24	396	1,020	45.7	37.4 J	269	49.3
	3/29/2023	42.7 J	96.6	1.93	70.5	138	24.3	12.8	28.2	7.53
	5/22/2023	4,910	518	4.15	410	411	36.9	71.5 J-	148	39.0
	9/21/2023	876	49.6	1.44	35.6	99.3	14.6	2.66 J	18.0	5.3
	11/8/2023	1,640	166	0.981 J	163	92.2	12.4	17.1	22.6	4.7
MW-8	5/24/2019	88.0	2.16	<0.412	<0.384	26.0	<0.367	<1.00	4.53	1.43
	3/29/2023	4,550	<0.0941	<0.278	<0.137	3.21	0.331 J	<1.00	0.486 J	0.258 J
	5/22/2023	189 J+	<1.00	<1.00	<1.00	11.5	0.273 J	<5.00 UJ	3.64	1.15
	9/20/2023	54.5 J	<1.00	<1.00	0.231 J	1.47 J	0.297 J	<5.00	<1.00	0.137 J
	11/7/2023	35.5	0.125 J	<1.00	0.587 J	0.923 J	<1.00	1.33 J	<1.00	<1.00
MW-9	5/23/2019	3,760	1,320	15.0	40.7	563.0	<0.376	3.31 J	141	44.3
	9/20/2023	<100	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<1.00	<1.00
	11/7/2023	55.7 J	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<1.00	<1.00
MW-12	3/30/2023	49,600	1,510	12,600	2,720	11,800	<2.02	508	1,980	519
	5/23/2023	82,400	2,930	13,600	3,090	14,300	<500	<2,500 UJ	1,910	621

Please see notes at end of table.

Table 2
Groundwater Analytical Results
Former Johnson Oil
Clatskanie, Oregon

Monitoring Well Number	Sample Date	Concentrations in µg/L								
		TPH-G	Benzene	Toluene	Ethylbenzene	Total Xylenes	Methyl tert-butyl ether	Naphthalene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene
MW-12 CONT.	9/21/2023	**31,000**	**4,540**	**145**	**1,490**	**3,870**	**15.3**	**193 J**	**1,120**	**297**
	11/8/2023	**104,000**	**4,150**	**13,200**	**4,650**	**22,500**	<50.0	**288**	**2,380**	**649**
MW-13	3/30/2023	**2,300**	**59.7**	**5.48**	**217**	**264**	<0.101	**53.5**	**205**	**117**
	5/23/2023	**2,550**	**123**	<10.0	**226**	**50.2**	<10.0	**18.8 J-**	**46.3**	**57.1**
	9/20/2023	**3,170**	**166**	<20.0	**279**	**16.1 J**	<1.00	**14.3**	**114**	**36.5**
	9/20/2023 DUP	**4,050**	**157**	**1.39**	**284**	**21.3**	<1.00	**5.90**	**99.4**	**33.6**
	11/7/2023	**271**	**2.79**	<1.00	**10.4**	**1.47 J**	<1.00	<5.00	**1.96**	**0.177 J**
	11/7/2023 DUP	**682**	**4.48**	**0.750 J**	**9.54**	**7.6**	<1.00	<5.00	**2.24**	**0.455 J**
MW-14	3/30/2023	**4,190**	**107**	**1.64**	**58.7**	**18.1**	<0.101	**15.3**	**9.54**	**1.68**
	3/30/2023 DUP	**4,490**	**103**	**1.37**	**48.4**	**14.1**	<0.101	**8.95**	**6.64**	**1.20**
	5/23/2023	**6,080**	**1,230**	**8.69**	**34.6**	**15.6**	<1.00	**6.45 J-**	**38.0**	**23.8**
	5/23/2023 DUP	**5,920**	**1,220**	**8.82**	**41.6**	**17.9**	<1.00	**8.55 J-**	**47.7**	**26.9**
	9/20/2023	**4,570**	**703**	**4.08**	**46.7**	**7.73 J**	<1.01	**7.83**	<25.0	**22.4**
	11/8/2023	**3,300**	**370**	**6.99 J**	<25.0	**21.5 J**	<25.0	<125	<25.0	<25.0
MW-15	3/30/2023	**2,160**	**990**	**16.6**	**35.6**	**19.8**	**10.6**	**3.80 J**	**8.70**	**10.2**
	5/23/2023	**2,340**	**92.8**	<10.0	**45.1**	**11.2 J**	<10.0	<50 UJ	<10.0	<10.0
	9/20/2023	**2,590**	**250**	**2.96**	**20.9**	**2.98 J**	**6.43**	**1.84 J**	<10.0	<10.0
	11/7/2023	**709**	**28.7**	**0.377 J**	**14.5**	**2.69 J**	<1.00	**3.84 J**	**0.727 J**	**0.157 J**
DEQ Human Health RBCs										
Groundwater to Indoor Air	Commercial/Chronic	520	12	150,000	31	3,300	3,200	50	2,400	1,700
Groundwater in Excavation	Construction/Excavation Worker	14,000	1,800	220,000	4,500	23,000	63,000	500	6,300	7,500

Notes:

1. Volatile organic compounds by EPA Method 8260D.
2. GRO = Gasoline range organics by NWTPH-Gx Method.
3. µg/L = Micrograms per liter.
4. Only compounds of potential interest are present in table.
5. Bold values indicate concentration detected above the method detection limit.
6. < = Concentration was not detected above the shown minimum reporting limit.
7. J = Result is an estimated value.
8. J- = Result is an estimated value and may be biased low.
9. UJ = The analyte was not detected but the reporting limit may be inaccurate or imprecise.
10. DEQ Human Health RBC = Risk-Based Concentrations from the DEQ's *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (updated June 2023).
11. Shaded values represent exceedances of applicable RBCs:

Table 3
Soil Vapor Analytical Results
Former Johnson Oil
Clatskanie, Oregon

Sample Location	SG-7			SG-8			SG-10			DEQ RBCs
Date	5/23/2019	4/4/2023	11/7/2023	5/23/2019	4/4/2023	11/7/2023	5/23/2019	4/4/2023	11/7/2023	Commercial Soil Vapor (Chronic)
Volatile Organic Compounds (VOCs) by EPA Method TO-15 in µg/m ^{3}										
Acetone	**1,360**	<2.97	**8.72**	**73.7**	**14.1**	**11.9**	**212**	<2.97	**20.5**	--
Allyl Chloride	--	<0.626	<0.626	--	<0.626	<0.626	--	<0.626	<0.626	68
Benzene	<12.5	<0.639	<0.639	<1.28	**0.684**	<0.639	**2.24**	<0.639	**0.684**	52
Benzyl Chloride	--	<1.04	<1.04	--	<1.04	<1.04	--	<1.04	<1.04	8.3
Bromodichloromethane	--	<1.34	<1.34	--	<1.34	<1.34	--	<1.34	<1.34	11
Bromoform	--	<6.21	<6.21	--	<6.21	<6.21	--	<6.21	<6.21	370
Bromomethane	--	<0.776	<0.776	--	<0.776	<0.776	--	<0.776	<0.776	730
1,3-Butadiene	--	<4.43	<4.43	--	<4.43	<4.43	--	<4.43	<4.43	14
Carbon Disulfide	<12.4	<0.622	<0.622	<1.24	**4.17**	<0.622	**3.46**	<0.622	**0.89**	100,000
Carbon Tetrachloride	--	<1.26	<1.26	--	<1.26	<1.26	--	<1.26	<1.26	68
Chlorobenzene	--	<0.924	<0.924	--	<0.924	<0.924	--	<0.924	<0.924	7,300
Chloroethane	--	<0.528	<0.528	--	<0.528	<0.528	--	**2.85**	<0.528	580,000
Chloroform	--	<0.973	<0.973	--	<0.973	<0.973	--	<0.973	<0.973	18
Chloromethane	--	<0.413	**0.591**	--	<0.413	**1.06**	--	**3.53**	**0.554**	13,000
2-Chlorotoluene	--	<1.03	<1.03	--	<1.03	<1.03	--	<1.03	<1.03	--
Cyclohexane	<13.8	<0.689	<0.689	<1.38	<0.689	<0.689	<1.38	**1.69**	**8.16**	880,000
Chlorodibromomethane	--	<1.70	<1.70	--	<1.70	<1.70	--	<1.70	<1.70	--
1,2-Dibromoethane	<30.8	<1.54	<1.54	<3.08	<1.54	<1.54	<3.08	<1.54	<1.54	0.68
1,2-Dichlorobenzene	--	<1.20	<1.20	--	<1.20	<1.20	--	<1.20	<1.20	29,000
1,3-Dichlorobenzene	--	<1.20	<1.20	--	<1.20	<1.20	--	<1.20	<1.20	--
1,4-Dichlorobenzene	--	<1.20	<1.20	--	<1.20	<1.20	--	<1.20	<1.20	37
1,2-Dichloroethane	<16.2	<0.810	<0.810	<1.62	<0.810	<0.810	<1.62	<0.810	<0.810	16
1,1-Dichloroethane	--	<0.802	<0.802	--	<0.802	<0.802	--	<0.802	<0.802	260
1,1-Dichloroethene	--	<0.793	<0.793	--	<0.793	<0.793	--	<0.793	<0.793	29,000
cis-1,2-Dichloroethene	--	<0.793	<0.793	--	<0.793	<0.793	--	**2.14**	<0.793	5,800
trans-1,2-Dichloroethene	--	<0.793	<0.793	--	<0.793	<0.793	--	<0.793	<0.793	5,800
1,2-Dichloropropane	--	<0.924	<0.924	--	<0.924	<0.924	--	<0.924	<0.924	110
cis-1,3-Dichloropropene	--	<0.908	<0.908	--	<0.908	<0.908	--	<0.908	<0.908	100
trans-1,3-Dichloropropene	--	<0.908	<0.908	--	<0.908	<0.908	--	<0.908	<0.908	100

Please see notes at end of table.

Table 3
Soil Vapor Analytical Results
Former Johnson Oil
Clatskanie, Oregon

Sample Location	SG-7			SG-8			SG-10			DEQ RBCs
Date	5/23/2019	4/4/2023	11/7/2023	5/23/2019	4/4/2023	11/7/2023	5/23/2019	4/4/2023	11/7/2023	Commercial Soil Vapor (Chronic)
Volatile Organic Compounds (VOCs) by EPA Method TO-15 in µg/m ^{3}										
1,4-Dioxane	<14.4	<0.721	<0.721	**3.52**	<0.721	<0.721	<1.44	<0.721	<0.721	82
Ethanol	**1,380**	**35.3**	**14.9**	**43.7**	**54.3**	**31.1**	**259**	<4.71	**58.6**	--
Ethylbenzene	**45.1**	**2.37**	**2.44**	<1.73	**5.20**	<0.867	<1.73	<0.867	<0.867	160
4-Ethyltoluene	**516**	<0.982	**6.43**	**3.75**	<0.982	<0.982	<1.96	<0.982	<0.982	--
Trichlorofluoromethane	<22.5	<1.12	**1.48**	**3.46**	<1.12	**1.17**	<3.07	**1.20**	<1.12	--
Dichlorodifluoromethane	<34.0	<0.989	**1.7**	**2.27**	**2.11**	**2.06**	**2.08**	**2.84**	**1.99**	15,000
1,1,2-Trichlorotrifluoroethane	--	<1.53	<1.53	--	<1.53	<1.53	--	<1.53	<1.53	730,000
1,2-Dichlorotetrafluoroethane	--	<1.40	<1.40	--	<1.40	<1.40	--	<1.40	<1.40	--
Heptane	<16.4	<0.818	<0.818	<1.64	<0.818	<0.818	<1.64	**8.51**	**2.57**	58,000
Hexachloro-1,3-butadiene	--	<6.73	<6.73	--	<6.73	<6.73	--	<6.73	<6.73	19
n-Hexane	<14.1	<2.22	<2.22	<1.41	<2.22	<2.22	**1.58**	**15.7**	<2.22	--
Isopropylbenzene	**60.6**	**3.24**	**4.09**	<1.97	<0.983	<0.983	<1.97	<0.983	<0.983	58,000
Methylene Chloride	<13.9	<0.694	**1.5**	**1.43**	<0.694	**3.09**	**2.89**	<0.694	**5.17**	41,000
Methyl Butyl Ketone	--	<5.11	<5.11	--	<5.11	<5.11	--	<5.11	<5.11	--
2-Butanone (MEK)	**403**	<3.69	<3.69	**16.1**	**9.94**	<3.69	**20.6**	<3.69	**12.7**	730,000
4-Methyl-2-pentanone (MIBK)	--	<5.12	<5.12	--	<5.12	<5.12	--	<5.12	<5.12	440,000
Methyl methacrylate	--	<0.819	<0.819	--	<0.819	<0.819	--	<0.819	<0.819	100,000
MTBE	<14.4	<0.721	<0.721	<1.44	<0.721	<0.721	<1.44	<0.721	<0.721	1,600
Naphthalene	**146**	<3.30	**9.32**	<6.60	<3.30	<3.30	<6.60	<3.30	<3.30	12
2-Propanol	**263**	<3.07	**4.99**	**102**	**7.25**	**9.78**	**19.4**	<3.07	**49.9**	29,000
Propene	<13.8	<2.15	<2.15	**1.43**	<2.15	<2.15	**2.71**	<2.15	<2.15	440,000
n-Propylbenzene	**134**	**6.97**	**8.2**	<1.96	<0.982	<0.982	<1.96	<0.982	<0.982	150,000
Styrene	<17.0	<0.851	<0.851	<1.70	<0.851	<0.851	<1.70	<0.851	<0.851	150,000
1,1,2,2-Tetrachloroethane	--	<1.37	<1.37	--	<1.37	<1.37	--	<1.37	<1.37	7.1
Tetrachloroethylene	<27.2	<1.36	**2.96**	**5.31**	**6.22**	<1.36	**3.14**	<1.36	<1.36	1,600
Tetrahydrofuran	<11.8	<0.590	<0.590	**3.88**	<0.590	<0.590	<1.18	<0.590	**1.3**	290,000
Toluene	**25.6**	**4.44**	**3.35**	**3.04**	**10.1**	**3.09**	**6.13**	<1.88	**6.55**	730,000
1,2,4-Trichlorobenzene	--	<4.66	<4.66	--	<4.66	<4.66	--	<4.66	<4.66	290
1,1,1-Trichloroethane	--	<1.09	<1.09	--	<1.09	<1.09	--	<1.09	<1.09	730,000

Please see notes at end of table.

Table 3
Soil Vapor Analytical Results
Former Johnson Oil
Clatskanie, Oregon

Sample Location	SG-7			SG-8			SG-10			DEQ RBCs
Date	5/23/2019	4/4/2023	11/7/2023	5/23/2019	4/4/2023	11/7/2023	5/23/2019	4/4/2023	11/7/2023	Commercial Soil Vapor (Chronic)
Volatile Organic Compounds (VOCs) by EPA Method TO-15 in µg/m^3										
1,1,2-Trichloroethane	--	<1.09	<1.09	--	<1.09	<1.09	--	<1.09	<1.09	26
Trichloroethylene	--	<1.07	<1.07	--	<1.07	<1.07	--	**163**	<1.07	100
1,2,4-Trimethylbenzene	**844**	**49.1**	**52.5**	**6.77**	**1.13**	<0.982	<1.96	<0.982	<0.982	8,800
1,3,5-Trimethylbenzene	**320**	**23.9**	**25.9**	<1.96	<0.982	<0.982	<1.96	<0.982	<0.982	8,800
2,2,4-Trimethylpentane	<18.7	**1.45**	<1.07	<1.87	<0.934	<0.934	<1.87	<0.934	<0.934	--
Vinyl Chloride	--	<0.511	<0.511	--	<0.511	<0.511	--	**1.85**	<0.511	93
Vinyl Bromide	--	<0.875	<0.875	--	<0.875	<0.875	--	<0.875	<0.875	27
Vinyl Acetate	<14.1	<0.704	<0.704	<1.41	<0.704	<0.704	<1.41	<0.704	<0.704	29,000
m&p-Xylene	--	**12.0**	**12.1**	--	**10.0**	<1.73	--	<1.73	**1.82**	15,000
o-Xylene	--	**9.93**	**10.6**	--	**2.11**	<0.867	--	<0.867	<0.867	15,000
Total Xylenes	**377**	--	--	**7.67**	--	--	**3.81**	--	--	15,000
TPH Low Fraction	**39,200**	**1,300 J+**	**1400**	**531**	<826	<826	<413	<826	**1160**	40,000

Notes:

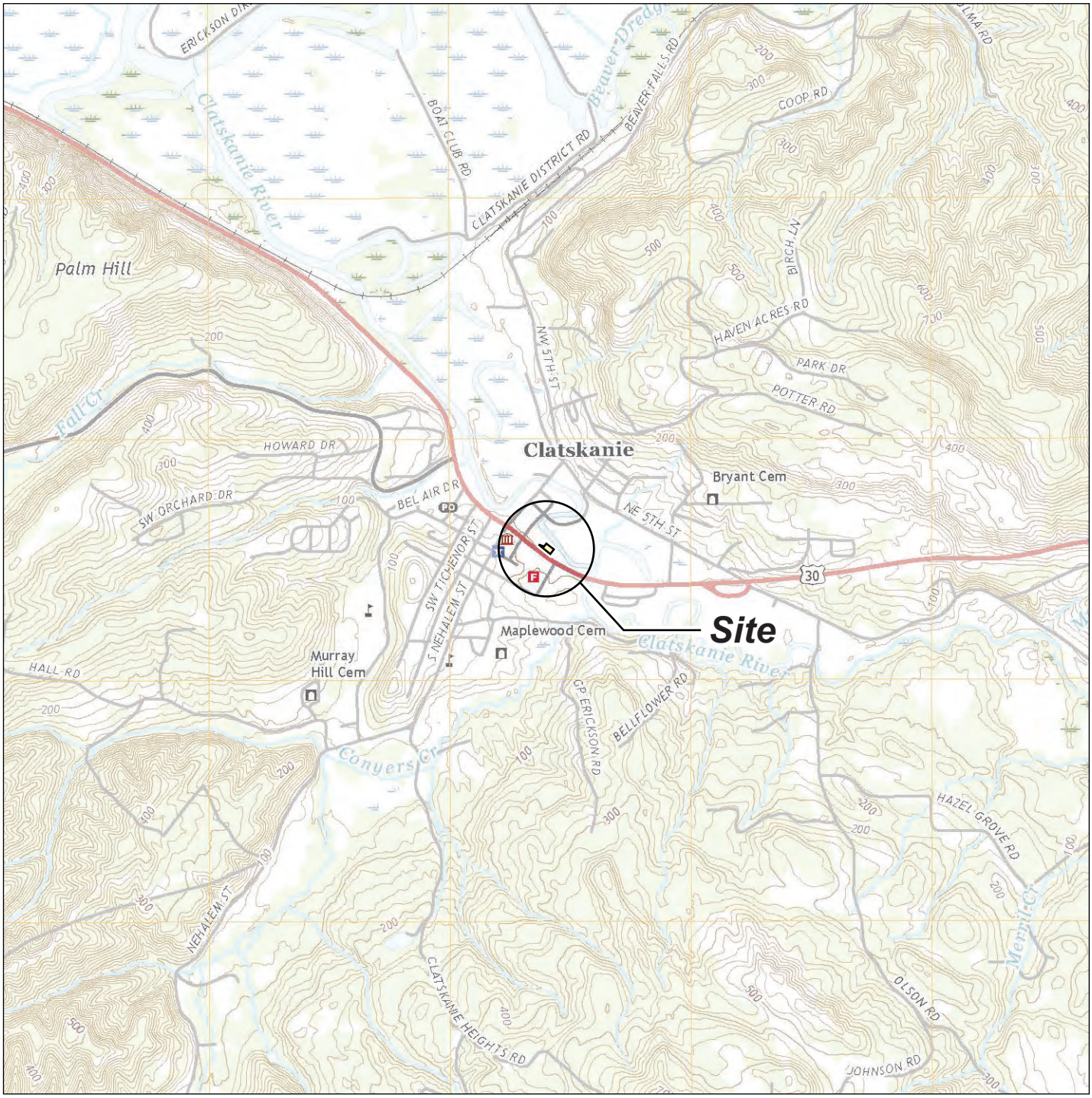
1. µg/m^3 = Micrograms per cubic meter.
2. Bold values indicate concentration detected above the minimum reporting limit.
3. Shaded values indicate concentrations detected above one or more applicable RBC.
4. -- = Not available.
5. J+ = Estimated concentration that may be biased high.
6. DEQ RBCs = Risk-Based Concentrations from the DEQ's *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (updated June 2023).

Table 4
Ambient Air Analytical Results
Former Johnson Oil
Clatskanie, Oregon

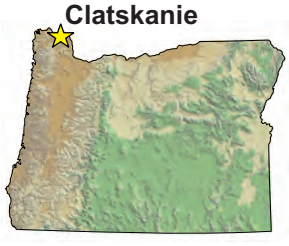
Sample Location	AMB-1 (TP)	AMB-2 (TP)	AMB-3 (OD)	AMB-4 (FS)	DEQ RBCs
Date	11/13/2023	11/13/2023	11/13/2023	11/13/2023	
Volatile Organic Compounds (VOCs) by EPA Method TO-17 Passive RAD145 in µg/m^3					
Benzene	**2.1**	**1.8**	**1.1**	**0.79**	1.6
Cyclohexane	**0.91**	**0.73**	**0.19**	**0.076**	26,000
Ethylbenzene	**2.8**	**2.7**	**0.2**	**0.16**	4.9
Styrene	**0.62**	**0.66**	**0.25**	**0.19**	4,400
Tetrachloroethylene	**0.079**	**0.095**	**0.065**	**1.000**	47.0
Toluene	**18E**	**18E**	**0.90**	**0.81**	22,000
1,1,1-Trichloroethane	<0.058	<0.058	<0.058	<0.058	22,000
Trichloroethylene	<0.021	<0.021	<0.021	**0.042**	3.0
m&p-Xylene	**11E**	**0.550**	**0.55**	**0.5**	880
o-Xylene	**3.6**	**0.22**	**0.22**	**0.19**	440

Notes:

1. µg/m^3 = Micrograms per cubic meter.
2. Bold values indicate concentration detected above the minimum reporting limit.
3. Shaded values indicate concentrations detected above one or more applicable RBC.
4. -- = Not available.
5. J+ = Estimated concentration that may be biased high.
6. DEQ RBCs = Risk-Based Concentrations from the DEQ's *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (updated June 2023).
7. TP = Turning Point building, OD = outdoor, FS = former station building



Note: Base map prepared from USGS 7.5-minute quadrangle of Clatskanie, OR, dated 2020 as provided by USGS.gov.



0 2,000 4,000

Approximate Scale in Feet

Site Location Map

Fourth Quarter Groundwater Monitoring - Former Johnson Oil Site
280 East Columbia River Highway
Clatskanie, Oregon

APEX Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 32-23005297	Drawn: JP	Approved: SM/TC	Figure 1
	February 2024			

I:\Client\DEQ\Oregon\32-23005297 Johnson Oil\GW Monitoring\Q4 2023\32-23005297 01 (Site Location).des

NOTE: Base map prepared from Haley Aldrich *Extent of Groundwater Contamination Exceeding Groundwater in Excavation RBCs* (August 2022) and Google Earth Pro Imagery. Aerial dated June 18, 2021.

Legend:

- 2023 Ambient Air Location
- 2023 Monitoring Well
- Historic Monitoring Well
- 2023 Sediment/Porewater Sample
- Historic Excavation Confirmation Sample
- Historic Soil Gas Sample
- Historic Soil And Groundwater Probe
- Historic Soil Probe
- Historic Decommissioned Monitoring Well
- Historic Groundwater Sample
- Historic Riverbank Porewater Sample
- Historic Soil Sample
- Historic Test Pit
- Gas Line
- Overhead Electrical Line
- Underground Electrical Line
- Sanitary Sewer Line
- Water Line
- Decommissioned Product Piping
- Asphalt Concrete Pad Installed June 22, 2022
- [10'] Extent Of Excavation and [Depth in Feet]
- Excavation Limits (2008)
- Underground Storage Tank (UST) Decommissioned in Place
- (4) Removed UST and Designation
- Property Boundary

0 20 40
Approximate Scale in Feet

Site Plan

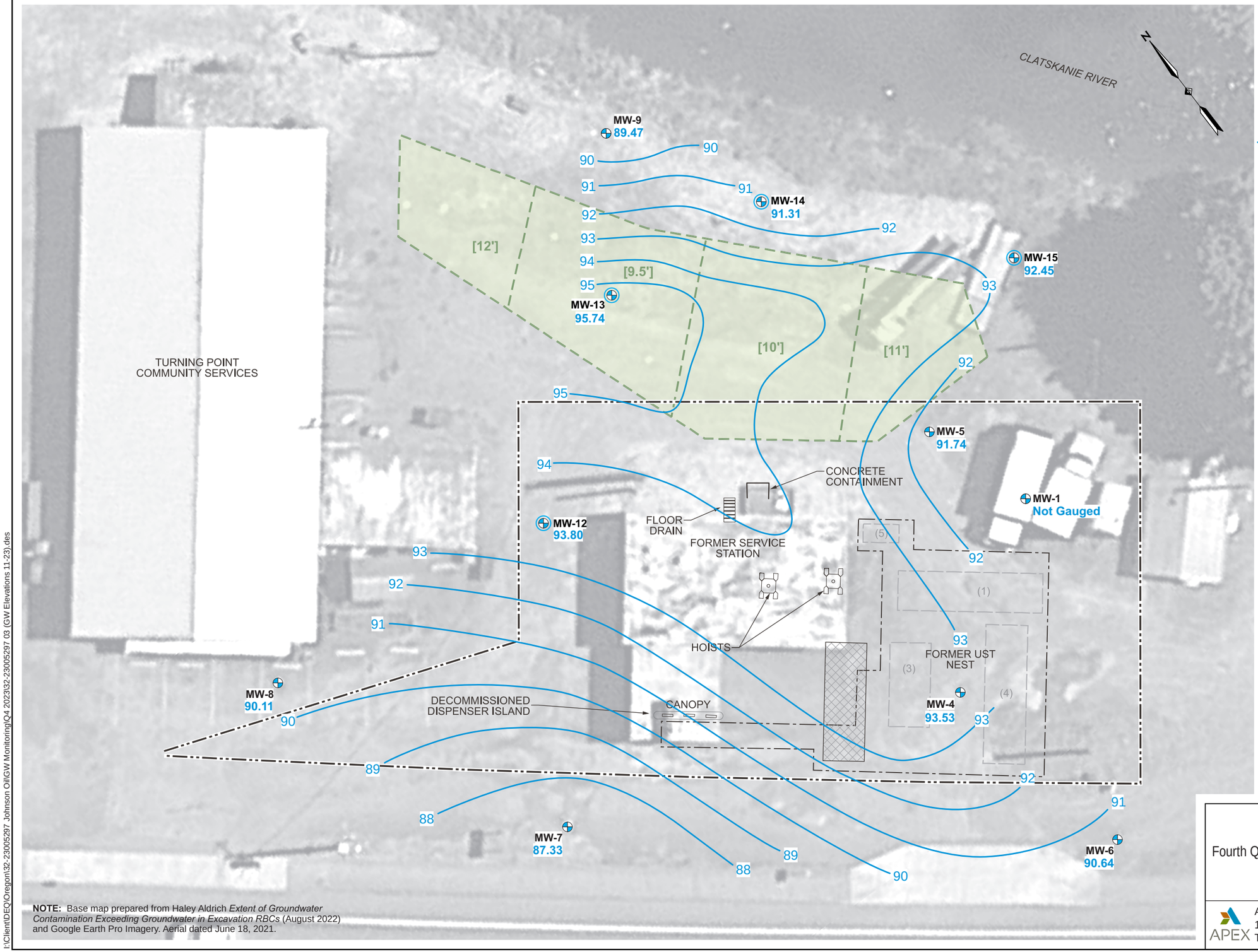
Fourth Quarter Groundwater Monitoring - Former Johnson Oil Site
280 East Columbia River Highway
Clatskanie, Oregon

Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Project Number:	Drawn:	Approved:	Figure
32-23005297	--	SM/TC	2

February 2024

I:\Client\DEQ\Oregon\32-23005297 Johnson Oil\GW Monitoring\Q4 2023\32-23005297 02 (Site Plan).des



Legend:

- 2023 Monitoring Well
- Historic Monitoring Well
- 93.53 — Groundwater Elevation in Feet Relative to Mean Sea Level
- 88 — Groundwater Elevation Contour in Feet Relative to Mean Sea Level (Dashed Where Inferred)
- [10'] — Extent of Excavation and [Depth in Feet]
- Excavation Limits (2008)
- Underground Storage Tank (UST) Decommissioned in Place
- (4) — Removed UST and Designation
- Property Boundary

0 20 40
Approximate Scale in Feet

NOTE: Base map prepared from Haley Aldrich *Extent of Groundwater Contamination Exceeding Groundwater in Excavation RBCs* (August 2022) and Google Earth Pro Imagery. Aerial dated June 18, 2021.

Groundwater Elevations (November 2023)

Fourth Quarter Groundwater Monitoring - Former Johnson Oil Site
280 East Columbia River Highway
Clatskanie, Oregon

APEX Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 32-23005297	Drawn: --	Approved: SM/TC	Figure 3
	February 2024			

I:\Client\DEQ\Oregon\32-23005297 Johnson Oil\GW Monitoring\Q4 2023\32-23005297 03 (GW Elevations 11-23).des

NOTE: Base map prepared from Haley Aldrich *Extent of Groundwater Contamination Exceeding Groundwater in Excavation RBCs* (August 2022) and Google Earth Pro Imagery. Aerial dated June 18, 2021.

Legend:

- 2023 Monitoring Well
- Historic Monitoring Well
- [10'] Extent of Excavation and [Depth in Feet]
- Excavation Limits (2008)
- Underground Storage Tank (UST) Decommissioned in Place
- (4) Removed UST and Designation
- Property Boundary

MW-15	
TPH-G	709
BEN	28.7
TOL	0.377
ETH	14.5
XYL	2.69
NAP	3.84

- Sample Identification
- Concentration in Micrograms Per Cubic Meter (µg/m^3)
- Analyte Sampled (See Table Below)

Highlight Exceeds Risk-Based Concentrations (RBCs) for Commercial Vapor Intrusion (RBCwi)

ND = Not Detected Above Laboratory Reporting Limit

Abbreviations		DEQ RBC for Commercial Vapor Intrusion (µg/m^3)
TPH-G	Gasoline-Range Organics	**520**
BEN	Benzene	**12**
TOL	Toluene	**150,000**
ETH	Ethylbenzene	**31**
XYL	Total Xylenes	**3,300**
NAP	Naphthalene	**50**

0 20 40

Approximate Scale in Feet

Groundwater Analytical Results (November 2023)

Fourth Quarter Groundwater Monitoring - Former Johnson Oil Site
280 East Columbia River Highway
Clatskanie, Oregon

Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Project Number:	Drawn:	Approved:	Figure
32-23005297	--	SM/TC	4

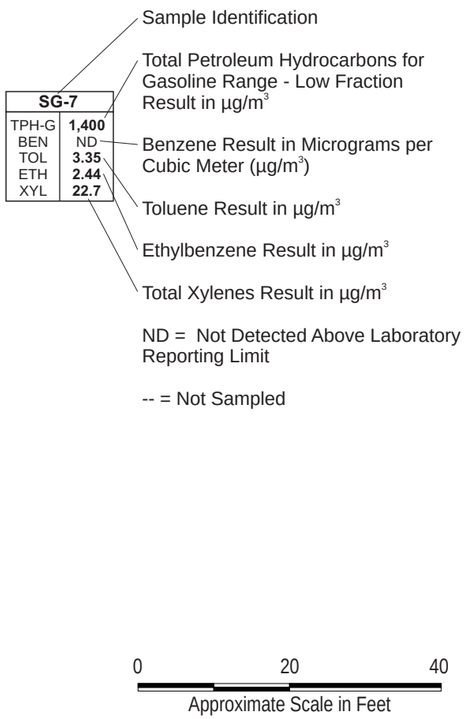
February 2024

I:\Client\DEQ\Oregon\32-23005297 Johnson Oil\GW Monitoring\Q4 2023\32-23005297 04 (GW Results 11-23).des

NOTE: Base map prepared from Haley Aldrich *Extent of Groundwater Contamination Exceeding Groundwater in Excavation RBCs* (August 2022) and Google Earth Pro Imagery. Aerial dated June 18, 2021.

Legend:

- 2023 Ambient Air Location
- Porewater Sample
- Soil Gas Sample (From Existing Probe)
- 2023 Monitoring Well
- Historic Monitoring Well
- [10'] Extent of Excavation and [Depth in Feet]
- Excavation Limits (2008)
- Underground Storage Tank (UST) Decommissioned in Place
- (4) Removed UST and Designation
- Property Boundary



ND = Not Detected Above Laboratory Reporting Limit

-- = Not Sampled

0 20 40

Approximate Scale in Feet

Soil Vapor and Ambient Air Results (November 2023)

SSI Report - Former Johnson Oil Site
280 East Columbia River Highway
Clatskanie, Oregon

Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 32-23005297	Drawn: --	Approved: SM/TC	Figure 5
	February 2024			

I:\Client\DEQ\Oregon\32-23005297 Johnson Oil\GW Monitoring\Q4 2023\32-23005297 05 (Soil Gas Results 11-23).des

Appendix A

Sampling Documentation

WELL GAGING DATA SHEET

APEX

		Job Number:	23005297
Client:	DEQ	Date:	11/7/26
Project:	Johnson Oil	Sampler:	DK/CW
Weather:	50° partly Cloudy	Time In/Out:	800/1520

WATER LEVEL DATA

Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
MW-4	1033	-	0.90	20	-	19.10	
MW-5	1034	-	2.56	20	-	17.44	
MW-6	1036	-	4.93	20	-	15.07	
MW-7	1038	-	7.71	20	-	12.29	
MW-8	1021	-	6.11	15	-	8.89	
MW-9	1025	-	5.07	15	-	9.93	
MW-12	1029	-	5.26	15	-	9.74	
MW-13	1039	-	2.54	17	-	14.46	
MW-14	1031	-	7.97	20	-	12.03	
MW-15	1026	-	7.87	20	-	12.13	

WELL MONITORING DATA SHEET

APEX	Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-4	Job Number:	23005297
		Client:	DEQ	Date:	11/8/2023
		Project:	Johnson Oil	Sampler:	DK/CW
		Weather:	52°F, sunny	Time In/Out:	1420 / 1448

WELL DATA

Well Depth:	20	Well Diameter:	2 inches	Water Height	
Depth to Water:	0.98	Screened Interval:		x Multiplier	-
Water Column Length:		Depth to Free Product:	-	x Casing Volumes	-
Purge Volume:		Free Product Thickness:	-	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:			Pump Intake Depth:						Comments		
Sampling Method:	Low Flow		Tubing Type:								
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1430			0.98	0.21	6.38	15.38	589	0.26	-82.2		clear
1433			0.98	0.21	6.41	15.58	590	0.24	-92.2		clear
1436			0.98	0.21	6.43	15.82	585	0.23	-98.1		clear

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-4	Sampling Flow Rate	0.21	Analytical Laboratory:	Pace Analytical
Sample Time:	1439	Final Depth to Water:	0.98	Did Well Dewater?	no

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3	HCl	NWTPH-Gx	yes no	n/a		
3	HCl	VOCs	yes no	n/a		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

WELL MONITORING DATA SHEET

APEX	Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-5	Job Number:	23005297
		Client:	DEQ	Date:	11/8/2023
		Project:	Johnson Oil	Sampler:	DK ~~CW~~
		Weather:	50°F, sunny	Time In/Out:	1145 / 1215

WELL DATA

Well Depth:	20		Well Diameter:	2 inches		Water Height	
Depth to Water:	2.69		Screened Interval:			x Multiplier	-
Water Column Length:	17.31		Depth to Free Product:	-		x Casing Volumes	-
Purge Volume:			Free Product Thickness:	-		= Purge Volume	
Water Height Multipliers (gal)		1-inch = 0.041	2-inch = 0.162	4-inch = 0.653		1 gallon = 3.785 liters	

PURGING DATA

Purge Method:					Pump Intake Depth:						Comments
Sampling Method:		Low Flow			Tubing Type:						
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1156			3.62	0.148	6.20	15.25	417	0.22	-96.4		Cl
1159			3.92	0.148	6.23	15.30	418	0.20	-99.1		Cl
1202			4.36	0.148	6.24	15.35	417	0.18	-104.0		Cl

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-5	Sampling Flow Rate	0.148	Analytical Laboratory:	Pace Analytical	
Sample Time:	1206	Final Depth to Water:	4.05	Did Well Dewater?	no	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3	HCl	NWTPH-Gx	yes no	n/a		
3	HCl	VOCs	yes no	n/a		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

WELL MONITORING DATA SHEET

APEX	Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-6	Job Number:	23005297
		Client:	DEQ	Date:	11/8/2023
		Project:	Johnson Oil	Sampler:	DK/~~CW~~
		Weather:	51°F, sunny	Time In/Out:	1225/

WELL DATA

Well Depth:	20	Well Diameter:	2 inches	Water Height	
Depth to Water:	4.60	Screened Interval:		x Multiplier	-
Water Column Length:	15.4	Depth to Free Product:	-	x Casing Volumes	-
Purge Volume:		Free Product Thickness:	-	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:		Pump Intake Depth:		Comments	
Sampling Method:	Low Flow	Tubing Type:			

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1234			5.18	0.15	5.95	17.38	437	0.26	-64.0		Clear
1237			5.78	0.15	5.96	17.52	438	0.19	-71.3		Clear
1240			6.60	0.15	5.95	17.53	437	0.18	-75.9		Clear
1243			7.46	0.15	6.12	17.46	436	0.19	-78.0		Clear
1246	5		8.08	0.15	6.13	17.33	434	0.20	-78.6		Clear
1248	8		8.83	0.15	6.13	17.28	432	0.21	-78.8		Clear

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-6	Sampling Flow Rate	0.15 L/min	Analytical Laboratory:	Pace Analytical
Sample Time:	1252	Final Depth to Water:	9.23	Did Well Dewater?	no

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3	HCl	NWTPH-Gx	yes no	n/a		
3	HCl	VOCs	yes no	n/a		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Sunlight was on sensor and was affecting temp, so protected from sun light @ 1243

WELL MONITORING DATA SHEET

APEX	Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-7	Job Number:	23005297
		Client:	DEQ	Date:	11/8/2023
		Project:	Johnson Oil	Sampler:	DK/CW
		Weather:	51°F, sunny	Time In/Out:	1325 / 1553

WELL DATA

Well Depth:	20	Well Diameter:	2 inches	Water Height	
Depth to Water:	6.57	Screened Interval:		x Multiplier	-
Water Column Length:	13.43	Depth to Free Product:	-	x Casing Volumes	-
Purge Volume:		Free Product Thickness:	-	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:			Pump Intake Depth:						Comments		
Sampling Method:	Low Flow		Tubing Type:								
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1338			7.42	0.18	5.88	13.39	288	0.28	1.5		clear
1341			8.13	0.18	5.86	17.31	280	0.21	8.2		clear
1344			8.68	0.18	5.80	17.23	269	0.19	14.7		clear
1347			9.67	0.18	5.84	17.15	314	0.20	2.3		clear
1350			10.00	0.18	5.87	16.57	320	0.40	-3.6		clear
1353			10.51	0.18	5.86	16.63	300	0.21	-0.7		clear
1356			11.28	0.18	5.85	16.91	305	0.20	-0.5		clear
1359			11.93	0.18	5.90	17.04	350	0.24	-15.8		clear
1402			12.67	0.18	5.96	17.00	383	0.23	-32.0		clear

Clarity: VC = very cloudy, CI = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-7	Sampling Flow Rate	0.18	Analytical Laboratory:	Pace Analytical
Sample Time:	1540	Final Depth to Water:	12.57	Did Well Dewater?	yes

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3	HCl	NWTPH-Gx	yes no	n/a		
3	HCl	VOCs	yes no	n/a		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

WELL MONITORING DATA SHEET

APEX	Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-8	Job Number:	23005297
		Client:	DEQ	Date:	11/7/23
		Project:	Johnson Oil	Sampler:	CW/DK
		Weather:	52° Sunny	Time In/Out:	1215/1257

WELL DATA

Well Depth:	15	Well Diameter:	2 inches	Water Height	
Depth to Water:	6.46'	Screened Interval:		x Multiplier	-
Water Column Length:	8.54'	Depth to Free Product:	-	x Casing Volumes	-
Purge Volume:		Free Product Thickness:	-	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:				Pump Intake Depth:						Comments	
Sampling Method:	Low Flow			Tubing Type:							
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1225			7.37	0.189	6.18	18.64	857	0.30	-130.9		Cl
1228			8.07	0.189	6.10	18.59	862	0.31	-129.7		Cl
1231			8.69	0.189	6.06	18.53	863	0.40	-127.7		Cl
1234			9.32	0.189	6.17	18.44	870	0.41	-126.7		Cl
1237			9.91	0.189	6.15	18.34	870	0.38	-126.3		Cl
1240			10.56	0.189	6.11	18.30	902	0.34	-127.1		

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-8	Sampling Flow Rate		Analytical Laboratory:	Pace Analytical	
Sample Time:	1247	Final Depth to Water:	10.10	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3	HCl	NWTPH-Gx	yes (no)	n/a		
3	HCl	VOCs	yes (no)	n/a		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

1 cup → 1 min 15sec → 1.25 min = 1 cup .24 = 1 cup

WELL MONITORING DATA SHEET

APEX	Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-9	Job Number:	23005297
		Client:	DEQ	Date:	11/8/23
		Project:	Johnson Oil	Sampler:	CW/DK
		Weather:	52° mostly Cloudy	Time In/Out:	1300/1348

WELL DATA

Well Depth:	15	Well Diameter:	2 inches	Water Height	
Depth to Water:	5.26	Screened Interval:		x Multiplier	-
Water Column Length:	9.74	Depth to Free Product:	-	x Casing Volumes	-
Purge Volume:		Free Product Thickness:	-	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:				Pump Intake Depth:						Comments	
Sampling Method:	Low Flow			Tubing Type:							
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1317			6.15	0.18	5.38	14.52	73	1.90	114.9		AC
1320			6.71	0.18	5.37	14.62	55	2.32	118.9		AC
1323			7.32	0.18	5.22	14.60	48	2.42	152		AC
1326			7.93	0.18	5.16	14.58	49	2.41	173.7		AC
1329			8.54	0.18	5.11	14.44	49	2.38	188.9		AC
1332			9.17	0.18	5.07	14.45	51	2.31	203.0		AC
1335			9.79	0.18	5.04	14.35	51	2.25	214.7		AC
1338			10.41	0.18	4.99	14.47	52	2.19	223.0		AC

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-9	Sampling Flow Rate	0.18	Analytical Laboratory:	Pace Analytical
Sample Time:	1341	Final Depth to Water:	10.35	Did Well Dewater?	NO

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3	HCl	NWTPH-Gx	yes no	n/a		
3	HCl	VOCs	yes no	n/a		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

1.33 min / cup → .24 L
.75 cup/min

WELL MONITORING DATA SHEET

APEX	Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-12	Job Number:	23005297
		Client:	DEQ	Date:	11/8/2023
		Project:	Johnson Oil	Sampler:	D. Kolpacki
		Weather:	52°F, sunny	Time In/Out:	1456 / 1535

WELL DATA

Well Depth:	15	Well Diameter:	2 inches	Water Height	
Depth to Water:	5.22	Screened Interval:		x Multiplier	-
Water Column Length:	9.78	Depth to Free Product:	-	x Casing Volumes	-
Purge Volume:		Free Product Thickness:	-	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:				Pump Intake Depth:						Comments	
Sampling Method:	Low Flow			Tubing Type:							
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1509			5.49	0.20	6.27	15.66	493	0.80	-97.9		
1512			5.58	0.20	6.21	15.97	367	0.32	-86.1		
1515			5.67	0.20	6.16	15.98	334	0.36	-74.1		
1518			5.72	0.20	6.13	16.14	325	0.35	-69.0		
1521			5.79	0.20	6.11	16.18	325	0.38	-67.8		

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-12	Sampling Flow Rate	0.20 L/min	Analytical Laboratory:	Pace Analytical
Sample Time:	1525	Final Depth to Water:	5.82	Did Well Dewater?	no

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3	HCl	NWTPH-Gx	yes no	n/a		
3	HCl	VOCs	yes no	n/a		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

WELL MONITORING DATA SHEET

APEX	Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-13	Job Number:	23005297
		Client:	DEQ	Date:	11/7/23
		Project:	Johnson Oil	Sampler:	CW/DK
		Weather:	52° partly cloudy	Time In/Out:	1430/1510

WELL DATA

Well Depth:	17'	Well Diameter:	2 inches	Water Height	
Depth to Water:	2.59'	Screened Interval:		x Multiplier	-
Water Column Length:	14.41	Depth to Free Product:	-	x Casing Volumes	-
Purge Volume:		Free Product Thickness:	-	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:				Pump Intake Depth:						Comments	
Sampling Method:	Low Flow			Tubing Type:							
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1444			2.60	0.18	6.69	15.98	907	0.32	-55.9		C, Petroleum odor
1447			2.61	0.18	6.74	15.97	902	0.27	-61.6		C, "
1456			2.60	0.18	6.79	16.15	901	0.25	-65.3		C, "

Clarity: VC = very cloudy, CI = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-13 DUP	Sampling Flow Rate		Analytical Laboratory:	Pace Analytical
Sample Time:	1454, 1458	Final Depth to Water:	2.60'	Did Well Dewater?	NO

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3	HCl	NWTPH-Gx	yes (no)	n/a		
3	HCl	VOCs	yes (no)	n/a		
3	HCl	NWTPH-Gx	yes (no)	N/A		DUP
3	HCl	VOCs	yes (no)	N/A		DUP
			yes no			
			yes no			

COMMENTS

1.33 min/cup

WELL MONITORING DATA SHEET

APEX	Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-14	Job Number:	23005297
		Client:	DEQ	Date:	11/8/2023
		Project:	Johnson Oil	Sampler:	D. Kolpacki
		Weather:	48°F, sunny	Time In/Out:	1100 / 1130

WELL DATA

Well Depth:	20	Well Diameter:	2 inches	Water Height	
Depth to Water:	8.55	Screened Interval:		x Multiplier	-
Water Column Length:	11.45	Depth to Free Product:	-	x Casing Volumes	-
Purge Volume:	2.25 L	Free Product Thickness:	-	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:				Pump Intake Depth:						Comments	
Sampling Method:	Low Flow			Tubing Type:							
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1108			9.26	0.187	5.97	14.97	428	0.22	-76.4		Clear
1111			9.67	0.187	5.97	14.92	425	0.19	-84.3 -51.8		Clear
1113			10.06	0.187	5.98	14.87	425	0.17	-88.0		Clear
1115			10.35	0.187	5.98	14.87	425	0.18	-90.5		Clear

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-14	Sampling Flow Rate	0.187 L/min	Analytical Laboratory:	Pace Analytical
Sample Time:	1120	Final Depth to Water:	10.40	Did Well Dewater?	No

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3	HCl	NWTPH-Gx	yes no	n/a		
3	HCl	VOCs	yes no	n/a		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

0.25 L / 1.33 min

WELL MONITORING DATA SHEET

APEX	Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-15	Job Number:	23005297
		Client:	DEQ	Date:	11/8/23
		Project:	Johnson Oil	Sampler:	CW/DK
		Weather:	50° Cloudy	Time In/Out:	1401 / 1425

WELL DATA

Well Depth:	20	Well Diameter:	2 inches	Water Height	
Depth to Water:	8.20	Screened Interval:		x Multiplier	-
Water Column Length:	11.80	Depth to Free Product:	-	x Casing Volumes	-
Purge Volume:		Free Product Thickness:	-	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:				Pump Intake Depth:					Comments		
Sampling Method:	Low Flow			Tubing Type:							
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1409			8.37	0.153	5.85	13.87	341	0.32	-39.9		AC
1412			8.53	0.153	5.91	13.85	342	0.25	-52.3		AC
1415			8.64	0.153	5.95	13.72	348	0.21	-59.4		AC

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-15	Sampling Flow Rate		Analytical Laboratory:	Pace Analytical		
Sample Time:	1420	Final Depth to Water:	8.16	Did Well Dewater?	NO		
# Containers/Type	Preservative	Analysis/Method	Field Filtered		Filter Size	MS/MSD	Duplicate ID
3	HCl	NWTPH-Gx	yes	no	n/a		
3	HCl	VOCs	yes	no	n/a		
			yes	no			
			yes	no			
			yes	no			
			yes	no			

COMMENTS

1 cup = 1 min 38 sec

Appendix B

Laboratory Analytical Reports and Data Quality Review

Appendix B – QA/QC Review

This appendix documents the results of a quality assurance/quality control (QA/QC) review of the analytical data for the fourth quarter 2023 monitoring event at the former Johnson Oil Site in Clatskanie, Oregon. The groundwater and soil vapor samples were submitted to Pace Analytical Services, LLC (Pace) in Mt. Juliet, Tennessee under their Price Agreement with the Oregon Department of Environmental Quality (DEQ). The ambient air samples were submitted to Eurofins Air Toxics of Folsom, California. Copies of the analytical laboratory reports are included in this appendix.

Laboratory Report	Date Reported
L1676670	November 22, 2023
L1675803	November 17, 2023
2311294	November 29, 2023

1.0 Analytical Methods

Chemical analyses of groundwater samples included in this QA/QC Review consisted of the following:

- TPH as gasoline (TPH-Gx) by Northwest Method NWTPH-Gx; and
- Volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260D.

Chemical analyses of soil vapor samples included in this QA/QC review consisted of the following:

- TPH (low fraction) and VOCs by U.S. Environmental Protection Agency (EPA) Method TO-15.

Chemical analyses of ambient air samples included in this QA/QC review consisted of the following:

- VOCs by EPA Method TO-17 using Radiello 145 sorbent tubes.

2.0 Data Validation

The QA/QC review included examination and validation of the laboratory data packages for the following:

- Analytical preparation and quantitation methods;
- Analytical method holding times;
- Sample handling;
- Chain of custody procedures;
- Detection and reporting limits;
- Method blank detections;
- Laboratory control samples, matrix spikes, and surrogates to assess accuracy; and

- Laboratory control sample duplicates and matrix spike duplicates.

The QA/QC review did not include a review of raw data.

This QA/QC review documents the relationship between analytical findings and data quality objectives based on precision and accuracy. It also summarizes possible error or bias and the effect on data quality and usability.

The laboratory quality control (QC) samples provided in data packages were used to evaluate laboratory contamination or background interferences, sample preparation efficiency and instrumentation performance. The QC samples provided by the analytical laboratory include method blanks, laboratory control samples (LCS/LCSD), and matrix spikes (MS/MSD). Surrogates are also required for VOC and TPH-Gx analysis to assess sample preparation efficiency and matrix interferences.

2.1 Data Qualifiers

Any data that is found to have possible bias or error was qualified and flagged. The following are definitions of qualifiers used in this data quality report and data tables.

B	Same analyte present in the method blank at concentrations greater than the reporting limit.
E	Exceeds instrument calibration range.
J	Result is an estimated value.

3.0 Data Quality Assurance Review

The general QA objectives for this project were to develop and implement procedures for obtaining, evaluating, and confirming the usability of data of a specified quality. To collect such information, analytical data must have an appropriate degree of accuracy and reproducibility, samples collected must be representative of actual field conditions, and samples must be collected and analyzed using unbroken chain of custody procedures.

Reporting limits and analytical results were compared to cleanup and screening levels for each parameter in the matrix of concern. Precision, accuracy, completeness, and comparability parameters used to indicate data quality are discussed below.

3.1 Reporting Limits

Reporting limits are the lowest concentration an instrument is capable of accurately detecting an analyte. Reporting limits are determined by the laboratory and are based on instrumentation capabilities, the matrix of field samples, sample preparation procedures, and EPA suggested reporting limits.

The reporting limits were consistent with method standards and were generally below applicable screening level values. Several analytes were identified by the laboratory at concentrations that were between the laboratory minimum reporting limit (MRL) and the method detection limit (MDL). These concentrations are estimated values and have been 'J' flagged accordingly.

The toluene and m,p-xylene concentrations detected in ambient air samples AMB-1 and AMB-2 are estimated (E flagged) as the concentrations are outside the instrument standard calibration range. To provide reliable results, the samples were reanalyzed at a higher split than the initial calibration, resulting in a dilution of 4 to 1 and the reporting limit was raised accordingly.

3.2 Holding Times and Sample Receipt

The holding time is the minimum amount of time the sample can be stored before analytes start to degrade and are not representative of initial sampling concentrations. Holding times are defined by analytical methods and samples were analyzed within the method specified holding time.

The integrity of the groundwater and soil vapor samples received was documented by the Pace Analytical *Sample Receipt Checklist* or *Cooler Receipt Form,* which ensures that samples are representative of the field and were not compromised during shipment. One vial from groundwater sample MW-4 was broken during shipment, however the remaining sample volume in unbroken containers was sufficient for analysis. Confirmation of receipt of Radiello passive ambient monitors was documented by Eurofins on the chain of custody and indicated that the samples arrived in good condition.

The chain of custody followed an unbroken procedure and was relinquished by the Apex Companies sampler and received by the analytical laboratory as indicated by signatures. The sample ID, collection time and requested analyses were all clearly and properly filled in by the Apex Companies sampler.

3.3 Method Blanks

A method – or laboratory – blank is a sample prepared in the laboratory along with the actual samples and analyzed for the same parameters at the same time. It is used to assess if detected compounds may have been the result of contamination or background levels in the laboratory.

Groundwater. TPH-Gx was detected in the method blank of analytical batch WG2170560 at a concentration of 47.5 ug/L. The associated groundwater concentrations of TPH-Gx for the November 2023 event were generally greater than ten times the method blank concentration with the exception of groundwater sample MW-9. The TPH-Gx results for well MW-9 (55.7 ug/L) may have had significant contribution from laboratory contamination and results are 'J' and 'B' flagged.

Trichloroethene (TCE) was detected in the method blank of analytical batch WG2174365 at a concentration of 0.491 ug/L and is J flagged. TCE was detected only in the groundwater sample collected from MW-13 at a concentration of 0.756 ug/L. The TCE concentration identified in the sample collected from MW-13 may have had significant contribution from laboratory contamination. Results are 'J' and 'B' flagged.

Soil Vapor. TPH, Ethanol and 2-propanol were detected in the method blank of analytical batch WG2171523 at concentrations of 45.5 parts per billion by volume (ppbv, 186 ug/m^3), 1.27 ppbv (2.39 ug/m^3) and 1.05 ppbv (2.58 ug/m^3), respectively. 2-propanol was detected in samples SG-7 and SG-8 at concentrations less than ten times the concentration in the method blank. These results may have had significant contribution from laboratory contamination and are 'B' flagged.

Ambient Air. There were no detections of VOCs in the method blank associated with the ambient air samples.

3.4 Accuracy

Accuracy is assessed through the comparison of analytes of known concentration to concentrations determined analytically. A percent recovery is calculated from the analytical concentration to the known concentration of analyte, which must be within control limits established by methods. If the percent recovery is outside of control limits, then data might be compromised. The analytical laboratory will provide quality control samples and surrogates to help determine the accuracy of the data provided. These quality control samples and surrogates are discussed below.

3.4.1 Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control duplicate samples (LCSD) were analyzed by the laboratory to assess the analytical methods. One set of LCS and LCSDs were analyzed per analytical batch. The samples were prepared from an analyte-free matrix that is then spiked with known levels of constituents of interest (COI; i.e. a standard). The concentrations were measured, and the results compared to the known spiked levels. This comparison is expressed as a percent recovery. Constituents were within recovery limits.

3.4.2 Matrix Samples

A matrix spike QC sample is used to assess the performance of the analytical method by determining potential matrix interferences. Matrix spike (MS) and matrix spike duplicate (MSD) analyses are performed on one environmental sample per analytical batch. A matrix spike sample uses an environmental sample that is spiked with known concentrations of analytes of interest. The matrix spike is then prepared and analyzed with the same analytical procedures as environmental samples in the analytical batch. The resulting concentration of the matrix spike is then compared to the known – or true – values added to the non-spiked environmental sample concentration. This comparison is expressed as a percent recovery.

3.4.3 Surrogates

Surrogates are organic compounds that are similar in chemical composition to the analytes of interest but are not likely to be found in the environment. They are spiked into environmental and batch QC samples prior to sample preparation and analysis. Surrogate recoveries for environmental samples are used to evaluate matrix interference and sample preparation and analysis efficiency on a sample-specific basis. Surrogates were recovered within control limits.

3.5 Precision

Precision is measured by how close concentrations of duplicate analyses are to each other. These duplicate analyses are of separate aliquots of the same sample that are prepared or analyzed at the same (or similar) time. Precision in the field ensures that samples taken are representative of field concentrations. Field precision is demonstrated by field duplicates. Analytical precision is measured by the laboratory through duplicate analysis of samples and quality control samples. Precision is estimated by the relative percent difference (RPD) between the original analysis and the duplicate analysis.

3.5.1 Laboratory Control Samples

LCSD analyte concentrations were compared to LCS analyte concentrations to assess the precision of the analytical method. This comparison can be expressed by the relative percent difference (RPD) between the LCS and LCSD samples. RPD values for LCS/LCSDs were within control limits.

3.5.2 Matrix Spike Duplicate

Similar to the LCS/LCSD, the analytical batch MS/MSD analyte concentrations are also compared to each other and expressed as an RPD. RPD values for MS/MSDs were within control limits.

4.0 Conclusion

In conclusion, the QA objectives have been met and the data are of sufficient quality for use in this project.

ANALYTICAL REPORT

November 22, 2023

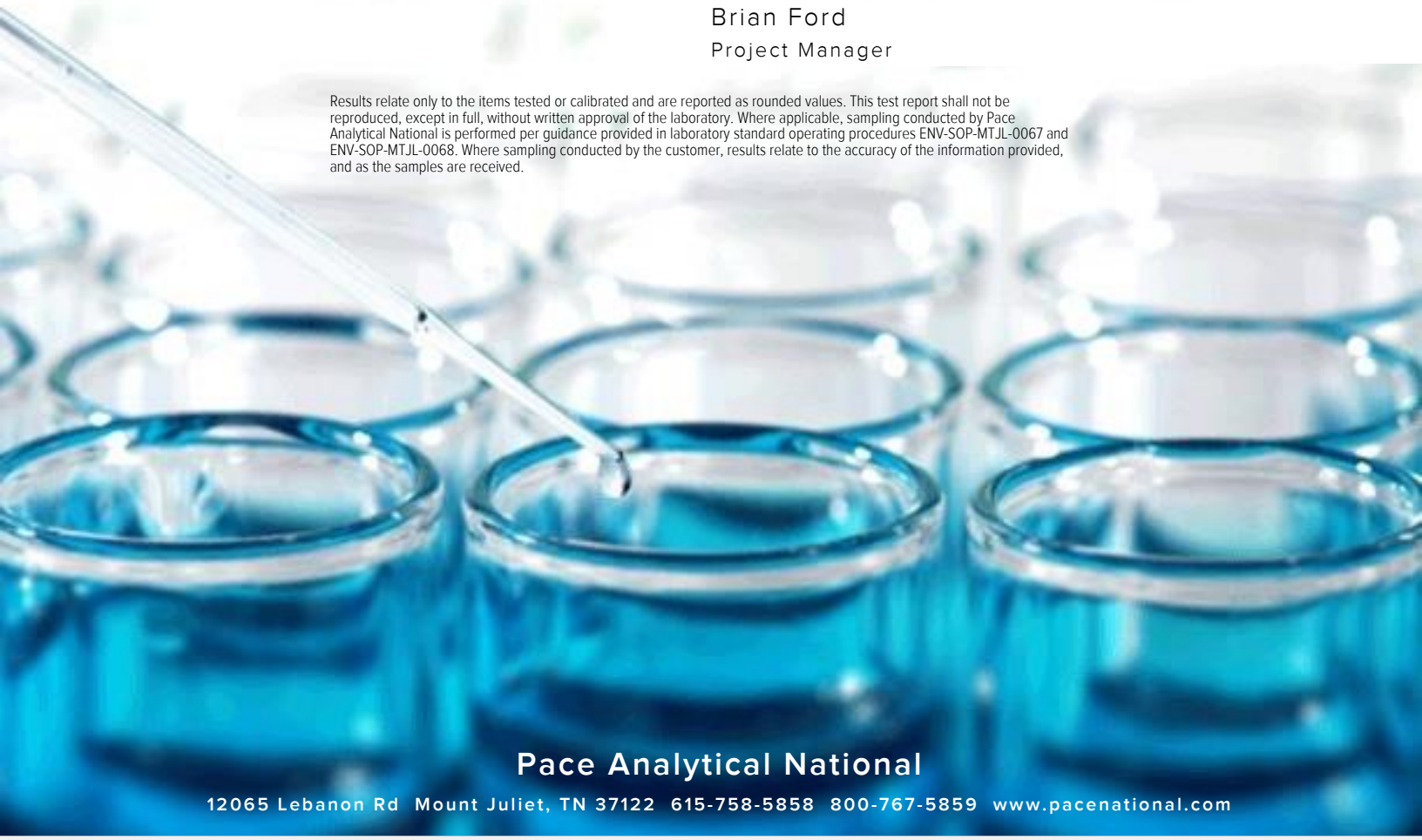
Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group:	L1676670
Samples Received:	11/10/2023
Project Number:	23005297
Description:	Johnson Oil
Report To:	Kara Master

Entire Report Reviewed By:

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 5

Sr: Sample Results 6

MW-4 L1676670-01 6

MW-5 L1676670-02 8

MW-6 L1676670-03 10

MW-7 L1676670-04 12

MW-8 L1676670-05 14

MW-9 L1676670-06 16

MW-12 L1676670-07 18

MW-13 L1676670-08 20

MW-14 L1676670-09 22

MW-15 L1676670-10 24

DUP L1676670-11 26

Qc: Quality Control Summary 28

Volatile Organic Compounds (GC) by Method NWTPHGX 28

Volatile Organic Compounds (GC/MS) by Method 8260D 31

Gl: Glossary of Terms 39

Al: Accreditations & Locations 40

Sc: Sample Chain of Custody 41

MW-4 L1676670-01 GW

Collected by	Collected date/time	Received date/time
	11/08/23 14:39	11/10/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2170560	1	11/14/23 05:51	11/14/23 05:51	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2173624	20	11/18/23 03:06	11/18/23 03:06	TJJ	Mt. Juliet, TN

MW-5 L1676670-02 GW

Collected by	Collected date/time	Received date/time
	11/08/23 12:06	11/10/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2170560	1	11/14/23 06:13	11/14/23 06:13	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2173624	10	11/18/23 03:27	11/18/23 03:27	TJJ	Mt. Juliet, TN

MW-6 L1676670-03 GW

Collected by	Collected date/time	Received date/time
	11/08/23 12:52	11/10/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2170560	1	11/14/23 06:35	11/14/23 06:35	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2173624	10	11/18/23 03:47	11/18/23 03:47	TJJ	Mt. Juliet, TN

MW-7 L1676670-04 GW

Collected by	Collected date/time	Received date/time
	11/08/23 15:40	11/10/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2170560	1	11/14/23 06:58	11/14/23 06:58	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2173624	1	11/18/23 01:05	11/18/23 01:05	TJJ	Mt. Juliet, TN

MW-8 L1676670-05 GW

Collected by	Collected date/time	Received date/time
	11/07/23 12:47	11/10/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2171280	1	11/15/23 12:47	11/15/23 12:47	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2173624	1	11/18/23 01:25	11/18/23 01:25	TJJ	Mt. Juliet, TN

MW-9 L1676670-06 GW

Collected by	Collected date/time	Received date/time
	11/07/23 13:41	11/10/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2170560	1	11/14/23 07:43	11/14/23 07:43	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2173624	1	11/18/23 01:45	11/18/23 01:45	TJJ	Mt. Juliet, TN

MW-12 L1676670-07 GW

Collected by	Collected date/time	Received date/time
	11/08/23 15:25	11/10/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2170704	10	11/14/23 19:38	11/14/23 19:38	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2173624	50	11/18/23 04:07	11/18/23 04:07	TJJ	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2174365	100	11/21/23 00:32	11/21/23 00:32	DYW	Mt. Juliet, TN

MW-13 L1676670-08 GW

Collected by	Collected date/time	Received date/time
	11/07/23 14:54	11/10/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2170704	1	11/14/23 14:53	11/14/23 14:53	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2174365	1	11/20/23 23:26	11/20/23 23:26	KSD	Mt. Juliet, TN

MW-14 L1676670-09 GW

Collected by	Collected date/time	Received date/time
	11/08/23 11:20	11/10/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2170704	1	11/14/23 15:15	11/14/23 15:15	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2173624	25	11/18/23 04:47	11/18/23 04:47	TJJ	Mt. Juliet, TN

MW-15 L1676670-10 GW

Collected by	Collected date/time	Received date/time
	11/07/23 14:20	11/10/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2170704	1	11/14/23 15:37	11/14/23 15:37	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2174365	1	11/20/23 23:48	11/20/23 23:48	DYW	Mt. Juliet, TN

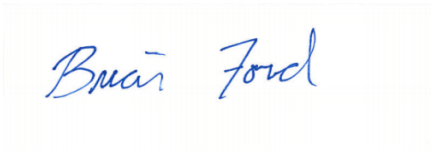
DUP L1676670-11 GW

Collected by	Collected date/time	Received date/time
	11/07/23 14:58	11/10/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2170704	1	11/14/23 15:59	11/14/23 15:59	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2174365	1	11/21/23 00:10	11/21/23 00:10	DYW	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4870		31.6	100	1	11/14/2023 05:51	WG2170560
(S) a,a,a-Trifluorotoluene(FID)	*104*			*78.0-120*		*11/14/2023 05:51*	WG2170560

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J4	226	1000	20	11/18/2023 03:06	WG2173624
Acrolein	U		50.8	1000	20	11/18/2023 03:06	WG2173624
Acrylonitrile	U		13.4	200	20	11/18/2023 03:06	WG2173624
Benzene	199		1.88	20.0	20	11/18/2023 03:06	WG2173624
Bromobenzene	U		2.36	20.0	20	11/18/2023 03:06	WG2173624
Bromodichloromethane	U		2.72	20.0	20	11/18/2023 03:06	WG2173624
Bromoform	U		2.58	20.0	20	11/18/2023 03:06	WG2173624
Bromomethane	U		12.1	100	20	11/18/2023 03:06	WG2173624
n-Butylbenzene	24.0		3.14	20.0	20	11/18/2023 03:06	WG2173624
sec-Butylbenzene	15.7	J	2.50	20.0	20	11/18/2023 03:06	WG2173624
tert-Butylbenzene	U		2.54	20.0	20	11/18/2023 03:06	WG2173624
Carbon disulfide	U		1.92	20.0	20	11/18/2023 03:06	WG2173624
Carbon tetrachloride	U		2.56	20.0	20	11/18/2023 03:06	WG2173624
Chlorobenzene	U		2.32	20.0	20	11/18/2023 03:06	WG2173624
Chlorodibromomethane	U		2.80	20.0	20	11/18/2023 03:06	WG2173624
Chloroethane	U		3.84	100	20	11/18/2023 03:06	WG2173624
Chloroform	U		2.22	100	20	11/18/2023 03:06	WG2173624
Chloromethane	U		19.2	50.0	20	11/18/2023 03:06	WG2173624
2-Chlorotoluene	U		2.12	20.0	20	11/18/2023 03:06	WG2173624
4-Chlorotoluene	U		2.28	20.0	20	11/18/2023 03:06	WG2173624
1,2-Dibromo-3-Chloropropane	U	C3	5.52	100	20	11/18/2023 03:06	WG2173624
1,2-Dibromoethane	U		2.52	20.0	20	11/18/2023 03:06	WG2173624
Dibromomethane	U		2.44	20.0	20	11/18/2023 03:06	WG2173624
1,2-Dichlorobenzene	U		2.14	20.0	20	11/18/2023 03:06	WG2173624
1,3-Dichlorobenzene	U		2.20	20.0	20	11/18/2023 03:06	WG2173624
1,4-Dichlorobenzene	U		2.40	20.0	20	11/18/2023 03:06	WG2173624
Dichlorodifluoromethane	U		7.48	100	20	11/18/2023 03:06	WG2173624
1,1-Dichloroethane	U		2.00	20.0	20	11/18/2023 03:06	WG2173624
1,2-Dichloroethane	U		1.64	20.0	20	11/18/2023 03:06	WG2173624
1,1-Dichloroethene	U		3.76	20.0	20	11/18/2023 03:06	WG2173624
cis-1,2-Dichloroethene	U		2.52	20.0	20	11/18/2023 03:06	WG2173624
trans-1,2-Dichloroethene	U		2.98	20.0	20	11/18/2023 03:06	WG2173624
1,2-Dichloropropane	U		2.98	20.0	20	11/18/2023 03:06	WG2173624
1,1-Dichloropropene	U		2.84	20.0	20	11/18/2023 03:06	WG2173624
1,3-Dichloropropane	U		2.20	20.0	20	11/18/2023 03:06	WG2173624
cis-1,3-Dichloropropene	U		2.22	20.0	20	11/18/2023 03:06	WG2173624
trans-1,3-Dichloropropene	U		2.36	20.0	20	11/18/2023 03:06	WG2173624
2,2-Dichloropropane	U		3.22	20.0	20	11/18/2023 03:06	WG2173624
Di-isopropyl ether	U		2.10	20.0	20	11/18/2023 03:06	WG2173624
Ethylbenzene	354		2.74	20.0	20	11/18/2023 03:06	WG2173624
Hexachloro-1,3-butadiene	U		6.74	20.0	20	11/18/2023 03:06	WG2173624
Isopropylbenzene	56.0		2.10	20.0	20	11/18/2023 03:06	WG2173624
p-Isopropyltoluene	U		2.40	20.0	20	11/18/2023 03:06	WG2173624
2-Butanone (MEK)	U		23.8	200	20	11/18/2023 03:06	WG2173624
Methylene Chloride	U		8.60	100	20	11/18/2023 03:06	WG2173624
4-Methyl-2-pentanone (MIBK)	U		9.56	200	20	11/18/2023 03:06	WG2173624
Methyl tert-butyl ether	U		2.02	20.0	20	11/18/2023 03:06	WG2173624
Naphthalene	137	C3	20.0	100	20	11/18/2023 03:06	WG2173624

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	216		1.99	20.0	20	11/18/2023 03:06	WG2173624
Styrene	U		2.36	20.0	20	11/18/2023 03:06	WG2173624
1,1,1,2-Tetrachloroethane	U		2.94	20.0	20	11/18/2023 03:06	WG2173624
1,1,2,2-Tetrachloroethane	U		2.66	20.0	20	11/18/2023 03:06	WG2173624
1,1,2-Trichlorotrifluoroethane	U		3.60	20.0	20	11/18/2023 03:06	WG2173624
Tetrachloroethene	U		6.00	20.0	20	11/18/2023 03:06	WG2173624
Toluene	U		5.56	20.0	20	11/18/2023 03:06	WG2173624
1,2,3-Trichlorobenzene	U	C3	4.60	20.0	20	11/18/2023 03:06	WG2173624
1,2,4-Trichlorobenzene	U	C3	9.62	20.0	20	11/18/2023 03:06	WG2173624
1,1,1-Trichloroethane	U		2.98	20.0	20	11/18/2023 03:06	WG2173624
1,1,2-Trichloroethane	U		3.16	20.0	20	11/18/2023 03:06	WG2173624
Trichloroethene	U		3.80	20.0	20	11/18/2023 03:06	WG2173624
Trichlorofluoromethane	U		3.20	100	20	11/18/2023 03:06	WG2173624
1,2,3-Trichloropropane	U		4.74	50.0	20	11/18/2023 03:06	WG2173624
1,2,4-Trimethylbenzene	U		6.44	20.0	20	11/18/2023 03:06	WG2173624
1,2,3-Trimethylbenzene	2.33	J	2.08	20.0	20	11/18/2023 03:06	WG2173624
1,3,5-Trimethylbenzene	U		2.08	20.0	20	11/18/2023 03:06	WG2173624
Vinyl chloride	U		4.68	20.0	20	11/18/2023 03:06	WG2173624
Xylenes, Total	9.63	J	3.48	60.0	20	11/18/2023 03:06	WG2173624
(S) Toluene-d8	*106*			*80.0-120*		*11/18/2023 03:06*	WG2173624
(S) 4-Bromofluorobenzene	*91.1*			*77.0-126*		*11/18/2023 03:06*	WG2173624
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*11/18/2023 03:06*	WG2173624

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	6100		31.6	100	1	11/14/2023 06:13	WG2170560
(S) a,a,a-Trifluorotoluene(FID)	*104*			*78.0-120*		*11/14/2023 06:13*	WG2170560

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	253	J J4	113	500	10	11/18/2023 03:27	WG2173624
Acrolein	U		25.4	500	10	11/18/2023 03:27	WG2173624
Acrylonitrile	U		6.71	100	10	11/18/2023 03:27	WG2173624
Benzene	141		0.941	10.0	10	11/18/2023 03:27	WG2173624
Bromobenzene	U		1.18	10.0	10	11/18/2023 03:27	WG2173624
Bromodichloromethane	U		1.36	10.0	10	11/18/2023 03:27	WG2173624
Bromoform	U		1.29	10.0	10	11/18/2023 03:27	WG2173624
Bromomethane	U		6.05	50.0	10	11/18/2023 03:27	WG2173624
n-Butylbenzene	16.7		1.57	10.0	10	11/18/2023 03:27	WG2173624
sec-Butylbenzene	11.6		1.25	10.0	10	11/18/2023 03:27	WG2173624
tert-Butylbenzene	U		1.27	10.0	10	11/18/2023 03:27	WG2173624
Carbon disulfide	U		0.962	10.0	10	11/18/2023 03:27	WG2173624
Carbon tetrachloride	U		1.28	10.0	10	11/18/2023 03:27	WG2173624
Chlorobenzene	U		1.16	10.0	10	11/18/2023 03:27	WG2173624
Chlorodibromomethane	U		1.40	10.0	10	11/18/2023 03:27	WG2173624
Chloroethane	U		1.92	50.0	10	11/18/2023 03:27	WG2173624
Chloroform	U		1.11	50.0	10	11/18/2023 03:27	WG2173624
Chloromethane	U		9.60	25.0	10	11/18/2023 03:27	WG2173624
2-Chlorotoluene	U		1.06	10.0	10	11/18/2023 03:27	WG2173624
4-Chlorotoluene	U		1.14	10.0	10	11/18/2023 03:27	WG2173624
1,2-Dibromo-3-Chloropropane	U	C3	2.76	50.0	10	11/18/2023 03:27	WG2173624
1,2-Dibromoethane	U		1.26	10.0	10	11/18/2023 03:27	WG2173624
Dibromomethane	U		1.22	10.0	10	11/18/2023 03:27	WG2173624
1,2-Dichlorobenzene	U		1.07	10.0	10	11/18/2023 03:27	WG2173624
1,3-Dichlorobenzene	U		1.10	10.0	10	11/18/2023 03:27	WG2173624
1,4-Dichlorobenzene	U		1.20	10.0	10	11/18/2023 03:27	WG2173624
Dichlorodifluoromethane	U		3.74	50.0	10	11/18/2023 03:27	WG2173624
1,1-Dichloroethane	U		1.00	10.0	10	11/18/2023 03:27	WG2173624
1,2-Dichloroethane	U		0.819	10.0	10	11/18/2023 03:27	WG2173624
1,1-Dichloroethene	U		1.88	10.0	10	11/18/2023 03:27	WG2173624
cis-1,2-Dichloroethene	U		1.26	10.0	10	11/18/2023 03:27	WG2173624
trans-1,2-Dichloroethene	U		1.49	10.0	10	11/18/2023 03:27	WG2173624
1,2-Dichloropropane	U		1.49	10.0	10	11/18/2023 03:27	WG2173624
1,1-Dichloropropene	U		1.42	10.0	10	11/18/2023 03:27	WG2173624
1,3-Dichloropropane	U		1.10	10.0	10	11/18/2023 03:27	WG2173624
cis-1,3-Dichloropropene	U		1.11	10.0	10	11/18/2023 03:27	WG2173624
trans-1,3-Dichloropropene	U		1.18	10.0	10	11/18/2023 03:27	WG2173624
2,2-Dichloropropane	U		1.61	10.0	10	11/18/2023 03:27	WG2173624
Di-isopropyl ether	U		1.05	10.0	10	11/18/2023 03:27	WG2173624
Ethylbenzene	244		1.37	10.0	10	11/18/2023 03:27	WG2173624
Hexachloro-1,3-butadiene	U		3.37	10.0	10	11/18/2023 03:27	WG2173624
Isopropylbenzene	95.6		1.05	10.0	10	11/18/2023 03:27	WG2173624
p-Isopropyltoluene	U		1.20	10.0	10	11/18/2023 03:27	WG2173624
2-Butanone (MEK)	U		11.9	100	10	11/18/2023 03:27	WG2173624
Methylene Chloride	U		4.30	50.0	10	11/18/2023 03:27	WG2173624
4-Methyl-2-pentanone (MIBK)	U		4.78	100	10	11/18/2023 03:27	WG2173624
Methyl tert-butyl ether	U		1.01	10.0	10	11/18/2023 03:27	WG2173624
Naphthalene	220	C3	10.0	50.0	10	11/18/2023 03:27	WG2173624

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	303		0.993	10.0	10	11/18/2023 03:27	WG2173624
Styrene	U		1.18	10.0	10	11/18/2023 03:27	WG2173624
1,1,1,2-Tetrachloroethane	U		1.47	10.0	10	11/18/2023 03:27	WG2173624
1,1,2,2-Tetrachloroethane	U		1.33	10.0	10	11/18/2023 03:27	WG2173624
1,1,2-Trichlorotrifluoroethane	U		1.80	10.0	10	11/18/2023 03:27	WG2173624
Tetrachloroethene	U		3.00	10.0	10	11/18/2023 03:27	WG2173624
Toluene	13.1		2.78	10.0	10	11/18/2023 03:27	WG2173624
1,2,3-Trichlorobenzene	U	C3	2.30	10.0	10	11/18/2023 03:27	WG2173624
1,2,4-Trichlorobenzene	U	C3	4.81	10.0	10	11/18/2023 03:27	WG2173624
1,1,1-Trichloroethane	U		1.49	10.0	10	11/18/2023 03:27	WG2173624
1,1,2-Trichloroethane	U		1.58	10.0	10	11/18/2023 03:27	WG2173624
Trichloroethene	U		1.90	10.0	10	11/18/2023 03:27	WG2173624
Trichlorofluoromethane	U		1.60	50.0	10	11/18/2023 03:27	WG2173624
1,2,3-Trichloropropane	U		2.37	25.0	10	11/18/2023 03:27	WG2173624
1,2,4-Trimethylbenzene	U		3.22	10.0	10	11/18/2023 03:27	WG2173624
1,2,3-Trimethylbenzene	7.35	J	1.04	10.0	10	11/18/2023 03:27	WG2173624
1,3,5-Trimethylbenzene	2.58	J	1.04	10.0	10	11/18/2023 03:27	WG2173624
Vinyl chloride	U		2.34	10.0	10	11/18/2023 03:27	WG2173624
Xylenes, Total	29.4	J	1.74	30.0	10	11/18/2023 03:27	WG2173624
(S) Toluene-d8	*107*			*80.0-120*		*11/18/2023 03:27*	WG2173624
(S) 4-Bromofluorobenzene	*91.4*			*77.0-126*		*11/18/2023 03:27*	WG2173624
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*11/18/2023 03:27*	WG2173624

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	6250		31.6	100	1	11/14/2023 06:35	WG2170560
(S) a,a,a-Trifluorotoluene(FID)	*102*			*78.0-120*		*11/14/2023 06:35*	WG2170560

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J4	113	500	10	11/18/2023 03:47	WG2173624
Acrolein	U		25.4	500	10	11/18/2023 03:47	WG2173624
Acrylonitrile	U		6.71	100	10	11/18/2023 03:47	WG2173624
Benzene	772		0.941	10.0	10	11/18/2023 03:47	WG2173624
Bromobenzene	U		1.18	10.0	10	11/18/2023 03:47	WG2173624
Bromodichloromethane	U		1.36	10.0	10	11/18/2023 03:47	WG2173624
Bromoform	U		1.29	10.0	10	11/18/2023 03:47	WG2173624
Bromomethane	U		6.05	50.0	10	11/18/2023 03:47	WG2173624
n-Butylbenzene	18.0		1.57	10.0	10	11/18/2023 03:47	WG2173624
sec-Butylbenzene	17.0		1.25	10.0	10	11/18/2023 03:47	WG2173624
tert-Butylbenzene	U		1.27	10.0	10	11/18/2023 03:47	WG2173624
Carbon disulfide	U		0.962	10.0	10	11/18/2023 03:47	WG2173624
Carbon tetrachloride	U		1.28	10.0	10	11/18/2023 03:47	WG2173624
Chlorobenzene	U		1.16	10.0	10	11/18/2023 03:47	WG2173624
Chlorodibromomethane	U		1.40	10.0	10	11/18/2023 03:47	WG2173624
Chloroethane	U		1.92	50.0	10	11/18/2023 03:47	WG2173624
Chloroform	U		1.11	50.0	10	11/18/2023 03:47	WG2173624
Chloromethane	U		9.60	25.0	10	11/18/2023 03:47	WG2173624
2-Chlorotoluene	U		1.06	10.0	10	11/18/2023 03:47	WG2173624
4-Chlorotoluene	U		1.14	10.0	10	11/18/2023 03:47	WG2173624
1,2-Dibromo-3-Chloropropane	U	C3	2.76	50.0	10	11/18/2023 03:47	WG2173624
1,2-Dibromoethane	U		1.26	10.0	10	11/18/2023 03:47	WG2173624
Dibromomethane	U		1.22	10.0	10	11/18/2023 03:47	WG2173624
1,2-Dichlorobenzene	U		1.07	10.0	10	11/18/2023 03:47	WG2173624
1,3-Dichlorobenzene	U		1.10	10.0	10	11/18/2023 03:47	WG2173624
1,4-Dichlorobenzene	U		1.20	10.0	10	11/18/2023 03:47	WG2173624
Dichlorodifluoromethane	U		3.74	50.0	10	11/18/2023 03:47	WG2173624
1,1-Dichloroethane	U		1.00	10.0	10	11/18/2023 03:47	WG2173624
1,2-Dichloroethane	U		0.819	10.0	10	11/18/2023 03:47	WG2173624
1,1-Dichloroethene	U		1.88	10.0	10	11/18/2023 03:47	WG2173624
cis-1,2-Dichloroethene	U		1.26	10.0	10	11/18/2023 03:47	WG2173624
trans-1,2-Dichloroethene	U		1.49	10.0	10	11/18/2023 03:47	WG2173624
1,2-Dichloropropane	U		1.49	10.0	10	11/18/2023 03:47	WG2173624
1,1-Dichloropropene	U		1.42	10.0	10	11/18/2023 03:47	WG2173624
1,3-Dichloropropane	U		1.10	10.0	10	11/18/2023 03:47	WG2173624
cis-1,3-Dichloropropene	U		1.11	10.0	10	11/18/2023 03:47	WG2173624
trans-1,3-Dichloropropene	U		1.18	10.0	10	11/18/2023 03:47	WG2173624
2,2-Dichloropropane	U		1.61	10.0	10	11/18/2023 03:47	WG2173624
Di-isopropyl ether	U		1.05	10.0	10	11/18/2023 03:47	WG2173624
Ethylbenzene	230		1.37	10.0	10	11/18/2023 03:47	WG2173624
Hexachloro-1,3-butadiene	U		3.37	10.0	10	11/18/2023 03:47	WG2173624
Isopropylbenzene	154		1.05	10.0	10	11/18/2023 03:47	WG2173624
p-Isopropyltoluene	U		1.20	10.0	10	11/18/2023 03:47	WG2173624
2-Butanone (MEK)	U		11.9	100	10	11/18/2023 03:47	WG2173624
Methylene Chloride	U		4.30	50.0	10	11/18/2023 03:47	WG2173624
4-Methyl-2-pentanone (MIBK)	U		4.78	100	10	11/18/2023 03:47	WG2173624
Methyl tert-butyl ether	U		1.01	10.0	10	11/18/2023 03:47	WG2173624
Naphthalene	28.0	C3 J	10.0	50.0	10	11/18/2023 03:47	WG2173624

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	470		0.993	10.0	10	11/18/2023 03:47	WG2173624
Styrene	U		1.18	10.0	10	11/18/2023 03:47	WG2173624
1,1,1,2-Tetrachloroethane	U		1.47	10.0	10	11/18/2023 03:47	WG2173624
1,1,2,2-Tetrachloroethane	U		1.33	10.0	10	11/18/2023 03:47	WG2173624
1,1,2-Trichlorotrifluoroethane	U		1.80	10.0	10	11/18/2023 03:47	WG2173624
Tetrachloroethene	U		3.00	10.0	10	11/18/2023 03:47	WG2173624
Toluene	11.2		2.78	10.0	10	11/18/2023 03:47	WG2173624
1,2,3-Trichlorobenzene	U	C3	2.30	10.0	10	11/18/2023 03:47	WG2173624
1,2,4-Trichlorobenzene	U	C3	4.81	10.0	10	11/18/2023 03:47	WG2173624
1,1,1-Trichloroethane	U		1.49	10.0	10	11/18/2023 03:47	WG2173624
1,1,2-Trichloroethane	U		1.58	10.0	10	11/18/2023 03:47	WG2173624
Trichloroethene	U		1.90	10.0	10	11/18/2023 03:47	WG2173624
Trichlorofluoromethane	U		1.60	50.0	10	11/18/2023 03:47	WG2173624
1,2,3-Trichloropropane	U		2.37	25.0	10	11/18/2023 03:47	WG2173624
1,2,4-Trimethylbenzene	6.60	J	3.22	10.0	10	11/18/2023 03:47	WG2173624
1,2,3-Trimethylbenzene	2.36	J	1.04	10.0	10	11/18/2023 03:47	WG2173624
1,3,5-Trimethylbenzene	5.36	J	1.04	10.0	10	11/18/2023 03:47	WG2173624
Vinyl chloride	U		2.34	10.0	10	11/18/2023 03:47	WG2173624
Xylenes, Total	74.3		1.74	30.0	10	11/18/2023 03:47	WG2173624
(S) Toluene-d8	*106*			*80.0-120*		*11/18/2023 03:47*	WG2173624
(S) 4-Bromofluorobenzene	*92.4*			*77.0-126*		*11/18/2023 03:47*	WG2173624
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*11/18/2023 03:47*	WG2173624

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1640		31.6	100	1	11/14/2023 06:58	WG2170560
(S) a,a,a-Trifluorotoluene(FID)	*97.9*			*78.0-120*		*11/14/2023 06:58*	WG2170560

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J4	11.3	50.0	1	11/18/2023 01:05	WG2173624
Acrolein	U		2.54	50.0	1	11/18/2023 01:05	WG2173624
Acrylonitrile	U		0.671	10.0	1	11/18/2023 01:05	WG2173624
Benzene	166		0.0941	1.00	1	11/18/2023 01:05	WG2173624
Bromobenzene	U		0.118	1.00	1	11/18/2023 01:05	WG2173624
Bromodichloromethane	U		0.136	1.00	1	11/18/2023 01:05	WG2173624
Bromoform	U		0.129	1.00	1	11/18/2023 01:05	WG2173624
Bromomethane	U		0.605	5.00	1	11/18/2023 01:05	WG2173624
n-Butylbenzene	U		0.157	1.00	1	11/18/2023 01:05	WG2173624
sec-Butylbenzene	1.10		0.125	1.00	1	11/18/2023 01:05	WG2173624
tert-Butylbenzene	U		0.127	1.00	1	11/18/2023 01:05	WG2173624
Carbon disulfide	U		0.0962	1.00	1	11/18/2023 01:05	WG2173624
Carbon tetrachloride	U		0.128	1.00	1	11/18/2023 01:05	WG2173624
Chlorobenzene	U		0.116	1.00	1	11/18/2023 01:05	WG2173624
Chlorodibromomethane	U		0.140	1.00	1	11/18/2023 01:05	WG2173624
Chloroethane	U		0.192	5.00	1	11/18/2023 01:05	WG2173624
Chloroform	U		0.111	5.00	1	11/18/2023 01:05	WG2173624
Chloromethane	U		0.960	2.50	1	11/18/2023 01:05	WG2173624
2-Chlorotoluene	0.570	J	0.106	1.00	1	11/18/2023 01:05	WG2173624
4-Chlorotoluene	U		0.114	1.00	1	11/18/2023 01:05	WG2173624
1,2-Dibromo-3-Chloropropane	U	C3	0.276	5.00	1	11/18/2023 01:05	WG2173624
1,2-Dibromoethane	U		0.126	1.00	1	11/18/2023 01:05	WG2173624
Dibromomethane	U		0.122	1.00	1	11/18/2023 01:05	WG2173624
1,2-Dichlorobenzene	U		0.107	1.00	1	11/18/2023 01:05	WG2173624
1,3-Dichlorobenzene	U		0.110	1.00	1	11/18/2023 01:05	WG2173624
1,4-Dichlorobenzene	U		0.120	1.00	1	11/18/2023 01:05	WG2173624
Dichlorodifluoromethane	U		0.374	5.00	1	11/18/2023 01:05	WG2173624
1,1-Dichloroethane	U		0.100	1.00	1	11/18/2023 01:05	WG2173624
1,2-Dichloroethane	U		0.0819	1.00	1	11/18/2023 01:05	WG2173624
1,1-Dichloroethene	U		0.188	1.00	1	11/18/2023 01:05	WG2173624
cis-1,2-Dichloroethene	U		0.126	1.00	1	11/18/2023 01:05	WG2173624
trans-1,2-Dichloroethene	U		0.149	1.00	1	11/18/2023 01:05	WG2173624
1,2-Dichloropropane	U		0.149	1.00	1	11/18/2023 01:05	WG2173624
1,1-Dichloropropene	U		0.142	1.00	1	11/18/2023 01:05	WG2173624
1,3-Dichloropropane	U		0.110	1.00	1	11/18/2023 01:05	WG2173624
cis-1,3-Dichloropropene	U		0.111	1.00	1	11/18/2023 01:05	WG2173624
trans-1,3-Dichloropropene	U		0.118	1.00	1	11/18/2023 01:05	WG2173624
2,2-Dichloropropane	U		0.161	1.00	1	11/18/2023 01:05	WG2173624
Di-isopropyl ether	U		0.105	1.00	1	11/18/2023 01:05	WG2173624
Ethylbenzene	163		0.137	1.00	1	11/18/2023 01:05	WG2173624
Hexachloro-1,3-butadiene	U		0.337	1.00	1	11/18/2023 01:05	WG2173624
Isopropylbenzene	10.5		0.105	1.00	1	11/18/2023 01:05	WG2173624
p-Isopropyltoluene	U		0.120	1.00	1	11/18/2023 01:05	WG2173624
2-Butanone (MEK)	U		1.19	10.0	1	11/18/2023 01:05	WG2173624
Methylene Chloride	U		0.430	5.00	1	11/18/2023 01:05	WG2173624
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	11/18/2023 01:05	WG2173624
Methyl tert-butyl ether	12.4		0.101	1.00	1	11/18/2023 01:05	WG2173624
Naphthalene	17.1	C3	1.00	5.00	1	11/18/2023 01:05	WG2173624

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	29.7		0.0993	1.00	1	11/18/2023 01:05	WG2173624
Styrene	U		0.118	1.00	1	11/18/2023 01:05	WG2173624
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	11/18/2023 01:05	WG2173624
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	11/18/2023 01:05	WG2173624
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	11/18/2023 01:05	WG2173624
Tetrachloroethene	U		0.300	1.00	1	11/18/2023 01:05	WG2173624
Toluene	0.981	J	0.278	1.00	1	11/18/2023 01:05	WG2173624
1,2,3-Trichlorobenzene	U	C3	0.230	1.00	1	11/18/2023 01:05	WG2173624
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	11/18/2023 01:05	WG2173624
1,1,1-Trichloroethane	U		0.149	1.00	1	11/18/2023 01:05	WG2173624
1,1,2-Trichloroethane	U		0.158	1.00	1	11/18/2023 01:05	WG2173624
Trichloroethene	U		0.190	1.00	1	11/18/2023 01:05	WG2173624
Trichlorofluoromethane	U		0.160	5.00	1	11/18/2023 01:05	WG2173624
1,2,3-Trichloropropane	U		0.237	2.50	1	11/18/2023 01:05	WG2173624
1,2,4-Trimethylbenzene	22.6		0.322	1.00	1	11/18/2023 01:05	WG2173624
1,2,3-Trimethylbenzene	34.4		0.104	1.00	1	11/18/2023 01:05	WG2173624
1,3,5-Trimethylbenzene	4.65		0.104	1.00	1	11/18/2023 01:05	WG2173624
Vinyl chloride	U		0.234	1.00	1	11/18/2023 01:05	WG2173624
Xylenes, Total	92.2		0.174	3.00	1	11/18/2023 01:05	WG2173624
(S) Toluene-d8	*102*			*80.0-120*		*11/18/2023 01:05*	WG2173624
(S) 4-Bromofluorobenzene	*88.6*			*77.0-126*		*11/18/2023 01:05*	WG2173624
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*11/18/2023 01:05*	WG2173624

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	35.5	J	31.6	100	1	11/15/2023 12:47	WG2171280
(S) a,a,a-Trifluorotoluene(FID)	*105*			*78.0-120*		*11/15/2023 12:47*	WG2171280

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J4	11.3	50.0	1	11/18/2023 01:25	WG2173624
Acrolein	U		2.54	50.0	1	11/18/2023 01:25	WG2173624
Acrylonitrile	U		0.671	10.0	1	11/18/2023 01:25	WG2173624
Benzene	0.125	J	0.0941	1.00	1	11/18/2023 01:25	WG2173624
Bromobenzene	U		0.118	1.00	1	11/18/2023 01:25	WG2173624
Bromodichloromethane	U		0.136	1.00	1	11/18/2023 01:25	WG2173624
Bromoform	U		0.129	1.00	1	11/18/2023 01:25	WG2173624
Bromomethane	U		0.605	5.00	1	11/18/2023 01:25	WG2173624
n-Butylbenzene	U		0.157	1.00	1	11/18/2023 01:25	WG2173624
sec-Butylbenzene	U		0.125	1.00	1	11/18/2023 01:25	WG2173624
tert-Butylbenzene	U		0.127	1.00	1	11/18/2023 01:25	WG2173624
Carbon disulfide	U		0.0962	1.00	1	11/18/2023 01:25	WG2173624
Carbon tetrachloride	U		0.128	1.00	1	11/18/2023 01:25	WG2173624
Chlorobenzene	U		0.116	1.00	1	11/18/2023 01:25	WG2173624
Chlorodibromomethane	U		0.140	1.00	1	11/18/2023 01:25	WG2173624
Chloroethane	U		0.192	5.00	1	11/18/2023 01:25	WG2173624
Chloroform	U		0.111	5.00	1	11/18/2023 01:25	WG2173624
Chloromethane	U		0.960	2.50	1	11/18/2023 01:25	WG2173624
2-Chlorotoluene	U		0.106	1.00	1	11/18/2023 01:25	WG2173624
4-Chlorotoluene	U		0.114	1.00	1	11/18/2023 01:25	WG2173624
1,2-Dibromo-3-Chloropropane	U	C3	0.276	5.00	1	11/18/2023 01:25	WG2173624
1,2-Dibromoethane	U		0.126	1.00	1	11/18/2023 01:25	WG2173624
Dibromomethane	U		0.122	1.00	1	11/18/2023 01:25	WG2173624
1,2-Dichlorobenzene	U		0.107	1.00	1	11/18/2023 01:25	WG2173624
1,3-Dichlorobenzene	U		0.110	1.00	1	11/18/2023 01:25	WG2173624
1,4-Dichlorobenzene	U		0.120	1.00	1	11/18/2023 01:25	WG2173624
Dichlorodifluoromethane	U		0.374	5.00	1	11/18/2023 01:25	WG2173624
1,1-Dichloroethane	U		0.100	1.00	1	11/18/2023 01:25	WG2173624
1,2-Dichloroethane	U		0.0819	1.00	1	11/18/2023 01:25	WG2173624
1,1-Dichloroethene	U		0.188	1.00	1	11/18/2023 01:25	WG2173624
cis-1,2-Dichloroethene	U		0.126	1.00	1	11/18/2023 01:25	WG2173624
trans-1,2-Dichloroethene	U		0.149	1.00	1	11/18/2023 01:25	WG2173624
1,2-Dichloropropane	U		0.149	1.00	1	11/18/2023 01:25	WG2173624
1,1-Dichloropropene	U		0.142	1.00	1	11/18/2023 01:25	WG2173624
1,3-Dichloropropane	U		0.110	1.00	1	11/18/2023 01:25	WG2173624
cis-1,3-Dichloropropene	U		0.111	1.00	1	11/18/2023 01:25	WG2173624
trans-1,3-Dichloropropene	U		0.118	1.00	1	11/18/2023 01:25	WG2173624
2,2-Dichloropropane	U		0.161	1.00	1	11/18/2023 01:25	WG2173624
Di-isopropyl ether	U		0.105	1.00	1	11/18/2023 01:25	WG2173624
Ethylbenzene	0.587	J	0.137	1.00	1	11/18/2023 01:25	WG2173624
Hexachloro-1,3-butadiene	U		0.337	1.00	1	11/18/2023 01:25	WG2173624
Isopropylbenzene	U		0.105	1.00	1	11/18/2023 01:25	WG2173624
p-Isopropyltoluene	U		0.120	1.00	1	11/18/2023 01:25	WG2173624
2-Butanone (MEK)	U		1.19	10.0	1	11/18/2023 01:25	WG2173624
Methylene Chloride	U		0.430	5.00	1	11/18/2023 01:25	WG2173624
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	11/18/2023 01:25	WG2173624
Methyl tert-butyl ether	U		0.101	1.00	1	11/18/2023 01:25	WG2173624
Naphthalene	1.33	C3 J	1.00	5.00	1	11/18/2023 01:25	WG2173624

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	U		0.0993	1.00	1	11/18/2023 01:25	WG2173624
Styrene	U		0.118	1.00	1	11/18/2023 01:25	WG2173624
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	11/18/2023 01:25	WG2173624
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	11/18/2023 01:25	WG2173624
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	11/18/2023 01:25	WG2173624
Tetrachloroethene	U		0.300	1.00	1	11/18/2023 01:25	WG2173624
Toluene	U		0.278	1.00	1	11/18/2023 01:25	WG2173624
1,2,3-Trichlorobenzene	U	C3	0.230	1.00	1	11/18/2023 01:25	WG2173624
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	11/18/2023 01:25	WG2173624
1,1,1-Trichloroethane	U		0.149	1.00	1	11/18/2023 01:25	WG2173624
1,1,2-Trichloroethane	U		0.158	1.00	1	11/18/2023 01:25	WG2173624
Trichloroethene	U		0.190	1.00	1	11/18/2023 01:25	WG2173624
Trichlorofluoromethane	U		0.160	5.00	1	11/18/2023 01:25	WG2173624
1,2,3-Trichloropropane	U		0.237	2.50	1	11/18/2023 01:25	WG2173624
1,2,4-Trimethylbenzene	U		0.322	1.00	1	11/18/2023 01:25	WG2173624
1,2,3-Trimethylbenzene	0.226	J	0.104	1.00	1	11/18/2023 01:25	WG2173624
1,3,5-Trimethylbenzene	U		0.104	1.00	1	11/18/2023 01:25	WG2173624
Vinyl chloride	U		0.234	1.00	1	11/18/2023 01:25	WG2173624
Xylenes, Total	0.923	J	0.174	3.00	1	11/18/2023 01:25	WG2173624
(S) Toluene-d8	*111*			*80.0-120*		*11/18/2023 01:25*	WG2173624
(S) 4-Bromofluorobenzene	*88.3*			*77.0-126*		*11/18/2023 01:25*	WG2173624
(S) 1,2-Dichloroethane-d4	*117*			*70.0-130*		*11/18/2023 01:25*	WG2173624

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	55.7	B J	31.6	100	1	11/14/2023 07:43	WG2170560
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*		*11/14/2023 07:43*	WG2170560

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J4	11.3	50.0	1	11/18/2023 01:45	WG2173624
Acrolein	U		2.54	50.0	1	11/18/2023 01:45	WG2173624
Acrylonitrile	U		0.671	10.0	1	11/18/2023 01:45	WG2173624
Benzene	U		0.0941	1.00	1	11/18/2023 01:45	WG2173624
Bromobenzene	U		0.118	1.00	1	11/18/2023 01:45	WG2173624
Bromodichloromethane	U		0.136	1.00	1	11/18/2023 01:45	WG2173624
Bromoform	U		0.129	1.00	1	11/18/2023 01:45	WG2173624
Bromomethane	U		0.605	5.00	1	11/18/2023 01:45	WG2173624
n-Butylbenzene	U		0.157	1.00	1	11/18/2023 01:45	WG2173624
sec-Butylbenzene	U		0.125	1.00	1	11/18/2023 01:45	WG2173624
tert-Butylbenzene	U		0.127	1.00	1	11/18/2023 01:45	WG2173624
Carbon disulfide	U		0.0962	1.00	1	11/18/2023 01:45	WG2173624
Carbon tetrachloride	U		0.128	1.00	1	11/18/2023 01:45	WG2173624
Chlorobenzene	U		0.116	1.00	1	11/18/2023 01:45	WG2173624
Chlorodibromomethane	U		0.140	1.00	1	11/18/2023 01:45	WG2173624
Chloroethane	U		0.192	5.00	1	11/18/2023 01:45	WG2173624
Chloroform	U		0.111	5.00	1	11/18/2023 01:45	WG2173624
Chloromethane	U		0.960	2.50	1	11/18/2023 01:45	WG2173624
2-Chlorotoluene	U		0.106	1.00	1	11/18/2023 01:45	WG2173624
4-Chlorotoluene	U		0.114	1.00	1	11/18/2023 01:45	WG2173624
1,2-Dibromo-3-Chloropropane	U	C3	0.276	5.00	1	11/18/2023 01:45	WG2173624
1,2-Dibromoethane	U		0.126	1.00	1	11/18/2023 01:45	WG2173624
Dibromomethane	U		0.122	1.00	1	11/18/2023 01:45	WG2173624
1,2-Dichlorobenzene	U		0.107	1.00	1	11/18/2023 01:45	WG2173624
1,3-Dichlorobenzene	U		0.110	1.00	1	11/18/2023 01:45	WG2173624
1,4-Dichlorobenzene	U		0.120	1.00	1	11/18/2023 01:45	WG2173624
Dichlorodifluoromethane	U		0.374	5.00	1	11/18/2023 01:45	WG2173624
1,1-Dichloroethane	U		0.100	1.00	1	11/18/2023 01:45	WG2173624
1,2-Dichloroethane	U		0.0819	1.00	1	11/18/2023 01:45	WG2173624
1,1-Dichloroethene	U		0.188	1.00	1	11/18/2023 01:45	WG2173624
cis-1,2-Dichloroethene	U		0.126	1.00	1	11/18/2023 01:45	WG2173624
trans-1,2-Dichloroethene	U		0.149	1.00	1	11/18/2023 01:45	WG2173624
1,2-Dichloropropane	U		0.149	1.00	1	11/18/2023 01:45	WG2173624
1,1-Dichloropropene	U		0.142	1.00	1	11/18/2023 01:45	WG2173624
1,3-Dichloropropane	U		0.110	1.00	1	11/18/2023 01:45	WG2173624
cis-1,3-Dichloropropene	U		0.111	1.00	1	11/18/2023 01:45	WG2173624
trans-1,3-Dichloropropene	U		0.118	1.00	1	11/18/2023 01:45	WG2173624
2,2-Dichloropropane	U		0.161	1.00	1	11/18/2023 01:45	WG2173624
Di-isopropyl ether	U		0.105	1.00	1	11/18/2023 01:45	WG2173624
Ethylbenzene	U		0.137	1.00	1	11/18/2023 01:45	WG2173624
Hexachloro-1,3-butadiene	U		0.337	1.00	1	11/18/2023 01:45	WG2173624
Isopropylbenzene	U		0.105	1.00	1	11/18/2023 01:45	WG2173624
p-Isopropyltoluene	U		0.120	1.00	1	11/18/2023 01:45	WG2173624
2-Butanone (MEK)	U		1.19	10.0	1	11/18/2023 01:45	WG2173624
Methylene Chloride	U		0.430	5.00	1	11/18/2023 01:45	WG2173624
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	11/18/2023 01:45	WG2173624
Methyl tert-butyl ether	U		0.101	1.00	1	11/18/2023 01:45	WG2173624
Naphthalene	U	C3	1.00	5.00	1	11/18/2023 01:45	WG2173624

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	U		0.0993	1.00	1	11/18/2023 01:45	WG2173624
Styrene	U		0.118	1.00	1	11/18/2023 01:45	WG2173624
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	11/18/2023 01:45	WG2173624
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	11/18/2023 01:45	WG2173624
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	11/18/2023 01:45	WG2173624
Tetrachloroethene	U		0.300	1.00	1	11/18/2023 01:45	WG2173624
Toluene	U		0.278	1.00	1	11/18/2023 01:45	WG2173624
1,2,3-Trichlorobenzene	U	C3	0.230	1.00	1	11/18/2023 01:45	WG2173624
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	11/18/2023 01:45	WG2173624
1,1,1-Trichloroethane	U		0.149	1.00	1	11/18/2023 01:45	WG2173624
1,1,2-Trichloroethane	U		0.158	1.00	1	11/18/2023 01:45	WG2173624
Trichloroethene	U		0.190	1.00	1	11/18/2023 01:45	WG2173624
Trichlorofluoromethane	U		0.160	5.00	1	11/18/2023 01:45	WG2173624
1,2,3-Trichloropropane	U		0.237	2.50	1	11/18/2023 01:45	WG2173624
1,2,4-Trimethylbenzene	U		0.322	1.00	1	11/18/2023 01:45	WG2173624
1,2,3-Trimethylbenzene	U		0.104	1.00	1	11/18/2023 01:45	WG2173624
1,3,5-Trimethylbenzene	U		0.104	1.00	1	11/18/2023 01:45	WG2173624
Vinyl chloride	U		0.234	1.00	1	11/18/2023 01:45	WG2173624
Xylenes, Total	U		0.174	3.00	1	11/18/2023 01:45	WG2173624
(S) Toluene-d8	*110*			*80.0-120*		*11/18/2023 01:45*	WG2173624
(S) 4-Bromofluorobenzene	*90.8*			*77.0-126*		*11/18/2023 01:45*	WG2173624
(S) 1,2-Dichloroethane-d4	*118*			*70.0-130*		*11/18/2023 01:45*	WG2173624

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	104000		316	1000	10	11/14/2023 19:38	WG2170704
(S) a,a,a-Trifluorotoluene(FID)	*96.7*			*78.0-120*		*11/14/2023 19:38*	WG2170704

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J4	565	2500	50	11/18/2023 04:07	WG2173624
Acrolein	U		127	2500	50	11/18/2023 04:07	WG2173624
Acrylonitrile	U		33.6	500	50	11/18/2023 04:07	WG2173624
Benzene	4150		4.71	50.0	50	11/18/2023 04:07	WG2173624
Bromobenzene	U		5.90	50.0	50	11/18/2023 04:07	WG2173624
Bromodichloromethane	U		6.80	50.0	50	11/18/2023 04:07	WG2173624
Bromoform	U		6.45	50.0	50	11/18/2023 04:07	WG2173624
Bromomethane	U		30.3	250	50	11/18/2023 04:07	WG2173624
n-Butylbenzene	U		7.85	50.0	50	11/18/2023 04:07	WG2173624
sec-Butylbenzene	U		6.25	50.0	50	11/18/2023 04:07	WG2173624
tert-Butylbenzene	U		6.35	50.0	50	11/18/2023 04:07	WG2173624
Carbon disulfide	U		4.81	50.0	50	11/18/2023 04:07	WG2173624
Carbon tetrachloride	U		6.40	50.0	50	11/18/2023 04:07	WG2173624
Chlorobenzene	U		5.80	50.0	50	11/18/2023 04:07	WG2173624
Chlorodibromomethane	U		7.00	50.0	50	11/18/2023 04:07	WG2173624
Chloroethane	U		9.60	250	50	11/18/2023 04:07	WG2173624
Chloroform	U		5.55	250	50	11/18/2023 04:07	WG2173624
Chloromethane	U		48.0	125	50	11/18/2023 04:07	WG2173624
2-Chlorotoluene	66.3		5.30	50.0	50	11/18/2023 04:07	WG2173624
4-Chlorotoluene	U		5.70	50.0	50	11/18/2023 04:07	WG2173624
1,2-Dibromo-3-Chloropropane	U	C3	13.8	250	50	11/18/2023 04:07	WG2173624
1,2-Dibromoethane	U		6.30	50.0	50	11/18/2023 04:07	WG2173624
Dibromomethane	U		6.10	50.0	50	11/18/2023 04:07	WG2173624
1,2-Dichlorobenzene	U		5.35	50.0	50	11/18/2023 04:07	WG2173624
1,3-Dichlorobenzene	U		5.50	50.0	50	11/18/2023 04:07	WG2173624
1,4-Dichlorobenzene	U		6.00	50.0	50	11/18/2023 04:07	WG2173624
Dichlorodifluoromethane	U		18.7	250	50	11/18/2023 04:07	WG2173624
1,1-Dichloroethane	U		5.00	50.0	50	11/18/2023 04:07	WG2173624
1,2-Dichloroethane	U		4.09	50.0	50	11/18/2023 04:07	WG2173624
1,1-Dichloroethene	U		9.40	50.0	50	11/18/2023 04:07	WG2173624
cis-1,2-Dichloroethene	U		6.30	50.0	50	11/18/2023 04:07	WG2173624
trans-1,2-Dichloroethene	U		7.45	50.0	50	11/18/2023 04:07	WG2173624
1,2-Dichloropropane	U		7.45	50.0	50	11/18/2023 04:07	WG2173624
1,1-Dichloropropene	U		7.10	50.0	50	11/18/2023 04:07	WG2173624
1,3-Dichloropropane	U		5.50	50.0	50	11/18/2023 04:07	WG2173624
cis-1,3-Dichloropropene	U		5.55	50.0	50	11/18/2023 04:07	WG2173624
trans-1,3-Dichloropropene	U		5.90	50.0	50	11/18/2023 04:07	WG2173624
2,2-Dichloropropane	U		8.05	50.0	50	11/18/2023 04:07	WG2173624
Di-isopropyl ether	U		5.25	50.0	50	11/18/2023 04:07	WG2173624
Ethylbenzene	4650		6.85	50.0	50	11/18/2023 04:07	WG2173624
Hexachloro-1,3-butadiene	U		16.9	50.0	50	11/18/2023 04:07	WG2173624
Isopropylbenzene	125		5.25	50.0	50	11/18/2023 04:07	WG2173624
p-Isopropyltoluene	22.2	J	6.00	50.0	50	11/18/2023 04:07	WG2173624
2-Butanone (MEK)	U		59.5	500	50	11/18/2023 04:07	WG2173624
Methylene Chloride	U		21.5	250	50	11/18/2023 04:07	WG2173624
4-Methyl-2-pentanone (MIBK)	U		23.9	500	50	11/18/2023 04:07	WG2173624
Methyl tert-butyl ether	U		5.05	50.0	50	11/18/2023 04:07	WG2173624
Naphthalene	288	C3	50.0	250	50	11/18/2023 04:07	WG2173624

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	388		4.97	50.0	50	11/18/2023 04:07	WG2173624
Styrene	U		5.90	50.0	50	11/18/2023 04:07	WG2173624
1,1,1,2-Tetrachloroethane	U		7.35	50.0	50	11/18/2023 04:07	WG2173624
1,1,2,2-Tetrachloroethane	U		6.65	50.0	50	11/18/2023 04:07	WG2173624
1,1,2-Trichlorotrifluoroethane	U		9.00	50.0	50	11/18/2023 04:07	WG2173624
Tetrachloroethene	U		15.0	50.0	50	11/18/2023 04:07	WG2173624
Toluene	13200		27.8	100	100	11/21/2023 00:32	WG2174365
1,2,3-Trichlorobenzene	U	C3	11.5	50.0	50	11/18/2023 04:07	WG2173624
1,2,4-Trichlorobenzene	U	C3	24.1	50.0	50	11/18/2023 04:07	WG2173624
1,1,1-Trichloroethane	U		7.45	50.0	50	11/18/2023 04:07	WG2173624
1,1,2-Trichloroethane	U		7.90	50.0	50	11/18/2023 04:07	WG2173624
Trichloroethene	U		9.50	50.0	50	11/18/2023 04:07	WG2173624
Trichlorofluoromethane	U		8.00	250	50	11/18/2023 04:07	WG2173624
1,2,3-Trichloropropane	U		11.9	125	50	11/18/2023 04:07	WG2173624
1,2,4-Trimethylbenzene	2380		16.1	50.0	50	11/18/2023 04:07	WG2173624
1,2,3-Trimethylbenzene	576		5.20	50.0	50	11/18/2023 04:07	WG2173624
1,3,5-Trimethylbenzene	649		5.20	50.0	50	11/18/2023 04:07	WG2173624
Vinyl chloride	U		11.7	50.0	50	11/18/2023 04:07	WG2173624
Xylenes, Total	22500		8.70	150	50	11/18/2023 04:07	WG2173624
(S) Toluene-d8	*99.5*			*80.0-120*		*11/18/2023 04:07*	WG2173624
(S) Toluene-d8	*99.3*			*80.0-120*		*11/21/2023 00:32*	WG2174365
(S) 4-Bromofluorobenzene	*91.8*			*77.0-126*		*11/18/2023 04:07*	WG2173624
(S) 4-Bromofluorobenzene	*93.8*			*77.0-126*		*11/21/2023 00:32*	WG2174365
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*11/18/2023 04:07*	WG2173624
(S) 1,2-Dichloroethane-d4	*89.1*			*70.0-130*		*11/21/2023 00:32*	WG2174365

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	271		31.6	100	1	11/14/2023 14:53	WG2170704
(S) a,a,a-Trifluorotoluene(FID)	*103*			*78.0-120*		*11/14/2023 14:53*	WG2170704

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	C3	11.3	50.0	1	11/20/2023 23:26	WG2174365
Acrolein	U	J3	2.54	50.0	1	11/20/2023 23:26	WG2174365
Acrylonitrile	U		0.671	10.0	1	11/20/2023 23:26	WG2174365
Benzene	2.79		0.0941	1.00	1	11/20/2023 23:26	WG2174365
Bromobenzene	U		0.118	1.00	1	11/20/2023 23:26	WG2174365
Bromodichloromethane	U		0.136	1.00	1	11/20/2023 23:26	WG2174365
Bromoform	U		0.129	1.00	1	11/20/2023 23:26	WG2174365
Bromomethane	U		0.605	5.00	1	11/20/2023 23:26	WG2174365
n-Butylbenzene	U		0.157	1.00	1	11/20/2023 23:26	WG2174365
sec-Butylbenzene	0.572	J	0.125	1.00	1	11/20/2023 23:26	WG2174365
tert-Butylbenzene	U		0.127	1.00	1	11/20/2023 23:26	WG2174365
Carbon disulfide	U		0.0962	1.00	1	11/20/2023 23:26	WG2174365
Carbon tetrachloride	U		0.128	1.00	1	11/20/2023 23:26	WG2174365
Chlorobenzene	U		0.116	1.00	1	11/20/2023 23:26	WG2174365
Chlorodibromomethane	U		0.140	1.00	1	11/20/2023 23:26	WG2174365
Chloroethane	U		0.192	5.00	1	11/20/2023 23:26	WG2174365
Chloroform	U		0.111	5.00	1	11/20/2023 23:26	WG2174365
Chloromethane	U		0.960	2.50	1	11/20/2023 23:26	WG2174365
2-Chlorotoluene	U		0.106	1.00	1	11/20/2023 23:26	WG2174365
4-Chlorotoluene	U		0.114	1.00	1	11/20/2023 23:26	WG2174365
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	11/20/2023 23:26	WG2174365
1,2-Dibromoethane	U		0.126	1.00	1	11/20/2023 23:26	WG2174365
Dibromomethane	U		0.122	1.00	1	11/20/2023 23:26	WG2174365
1,2-Dichlorobenzene	U		0.107	1.00	1	11/20/2023 23:26	WG2174365
1,3-Dichlorobenzene	U		0.110	1.00	1	11/20/2023 23:26	WG2174365
1,4-Dichlorobenzene	U		0.120	1.00	1	11/20/2023 23:26	WG2174365
Dichlorodifluoromethane	U		0.374	5.00	1	11/20/2023 23:26	WG2174365
1,1-Dichloroethane	U		0.100	1.00	1	11/20/2023 23:26	WG2174365
1,2-Dichloroethane	U		0.0819	1.00	1	11/20/2023 23:26	WG2174365
1,1-Dichloroethene	U		0.188	1.00	1	11/20/2023 23:26	WG2174365
cis-1,2-Dichloroethene	U		0.126	1.00	1	11/20/2023 23:26	WG2174365
trans-1,2-Dichloroethene	U		0.149	1.00	1	11/20/2023 23:26	WG2174365
1,2-Dichloropropane	U		0.149	1.00	1	11/20/2023 23:26	WG2174365
1,1-Dichloropropene	U		0.142	1.00	1	11/20/2023 23:26	WG2174365
1,3-Dichloropropane	U		0.110	1.00	1	11/20/2023 23:26	WG2174365
cis-1,3-Dichloropropene	U		0.111	1.00	1	11/20/2023 23:26	WG2174365
trans-1,3-Dichloropropene	U		0.118	1.00	1	11/20/2023 23:26	WG2174365
2,2-Dichloropropane	U		0.161	1.00	1	11/20/2023 23:26	WG2174365
Di-isopropyl ether	U		0.105	1.00	1	11/20/2023 23:26	WG2174365
Ethylbenzene	10.4		0.137	1.00	1	11/20/2023 23:26	WG2174365
Hexachloro-1,3-butadiene	U		0.337	1.00	1	11/20/2023 23:26	WG2174365
Isopropylbenzene	0.832	J	0.105	1.00	1	11/20/2023 23:26	WG2174365
p-Isopropyltoluene	U		0.120	1.00	1	11/20/2023 23:26	WG2174365
2-Butanone (MEK)	U		1.19	10.0	1	11/20/2023 23:26	WG2174365
Methylene Chloride	U		0.430	5.00	1	11/20/2023 23:26	WG2174365
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	11/20/2023 23:26	WG2174365
Methyl tert-butyl ether	U		0.101	1.00	1	11/20/2023 23:26	WG2174365
Naphthalene	U	C3	1.00	5.00	1	11/20/2023 23:26	WG2174365

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	2.73		0.0993	1.00	1	11/20/2023 23:26	WG2174365
Styrene	U		0.118	1.00	1	11/20/2023 23:26	WG2174365
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	11/20/2023 23:26	WG2174365
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	11/20/2023 23:26	WG2174365
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	11/20/2023 23:26	WG2174365
Tetrachloroethene	U		0.300	1.00	1	11/20/2023 23:26	WG2174365
Toluene	U		0.278	1.00	1	11/20/2023 23:26	WG2174365
1,2,3-Trichlorobenzene	U		0.230	1.00	1	11/20/2023 23:26	WG2174365
1,2,4-Trichlorobenzene	U		0.481	1.00	1	11/20/2023 23:26	WG2174365
1,1,1-Trichloroethane	U		0.149	1.00	1	11/20/2023 23:26	WG2174365
1,1,2-Trichloroethane	U		0.158	1.00	1	11/20/2023 23:26	WG2174365
Trichloroethene	0.755	B J	0.190	1.00	1	11/20/2023 23:26	WG2174365
Trichlorofluoromethane	U		0.160	5.00	1	11/20/2023 23:26	WG2174365
1,2,3-Trichloropropane	U		0.237	2.50	1	11/20/2023 23:26	WG2174365
1,2,4-Trimethylbenzene	1.96		0.322	1.00	1	11/20/2023 23:26	WG2174365
1,2,3-Trimethylbenzene	0.395	J	0.104	1.00	1	11/20/2023 23:26	WG2174365
1,3,5-Trimethylbenzene	0.177	J	0.104	1.00	1	11/20/2023 23:26	WG2174365
Vinyl chloride	U		0.234	1.00	1	11/20/2023 23:26	WG2174365
Xylenes, Total	1.47	J	0.174	3.00	1	11/20/2023 23:26	WG2174365
(S) Toluene-d8	*98.1*			*80.0-120*		*11/20/2023 23:26*	WG2174365
(S) 4-Bromofluorobenzene	*87.8*			*77.0-126*		*11/20/2023 23:26*	WG2174365
(S) 1,2-Dichloroethane-d4	*98.7*			*70.0-130*		*11/20/2023 23:26*	WG2174365

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	3300		31.6	100	1	11/14/2023 15:15	WG2170704
(S) a,a,a-Trifluorotoluene(FID)	*105*			*78.0-120*		*11/14/2023 15:15*	WG2170704

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J4	282	1250	25	11/18/2023 04:47	WG2173624
Acrolein	U		63.5	1250	25	11/18/2023 04:47	WG2173624
Acrylonitrile	U		16.8	250	25	11/18/2023 04:47	WG2173624
Benzene	370		2.35	25.0	25	11/18/2023 04:47	WG2173624
Bromobenzene	U		2.95	25.0	25	11/18/2023 04:47	WG2173624
Bromodichloromethane	U		3.40	25.0	25	11/18/2023 04:47	WG2173624
Bromoform	U		3.22	25.0	25	11/18/2023 04:47	WG2173624
Bromomethane	U		15.1	125	25	11/18/2023 04:47	WG2173624
n-Butylbenzene	U		3.93	25.0	25	11/18/2023 04:47	WG2173624
sec-Butylbenzene	U		3.13	25.0	25	11/18/2023 04:47	WG2173624
tert-Butylbenzene	U		3.18	25.0	25	11/18/2023 04:47	WG2173624
Carbon disulfide	U		2.41	25.0	25	11/18/2023 04:47	WG2173624
Carbon tetrachloride	U		3.20	25.0	25	11/18/2023 04:47	WG2173624
Chlorobenzene	U		2.90	25.0	25	11/18/2023 04:47	WG2173624
Chlorodibromomethane	U		3.50	25.0	25	11/18/2023 04:47	WG2173624
Chloroethane	U		4.80	125	25	11/18/2023 04:47	WG2173624
Chloroform	U		2.78	125	25	11/18/2023 04:47	WG2173624
Chloromethane	U		24.0	62.5	25	11/18/2023 04:47	WG2173624
2-Chlorotoluene	U		2.65	25.0	25	11/18/2023 04:47	WG2173624
4-Chlorotoluene	U		2.85	25.0	25	11/18/2023 04:47	WG2173624
1,2-Dibromo-3-Chloropropane	U	C3	6.90	125	25	11/18/2023 04:47	WG2173624
1,2-Dibromoethane	U		3.15	25.0	25	11/18/2023 04:47	WG2173624
Dibromomethane	U		3.05	25.0	25	11/18/2023 04:47	WG2173624
1,2-Dichlorobenzene	U		2.68	25.0	25	11/18/2023 04:47	WG2173624
1,3-Dichlorobenzene	U		2.75	25.0	25	11/18/2023 04:47	WG2173624
1,4-Dichlorobenzene	U		3.00	25.0	25	11/18/2023 04:47	WG2173624
Dichlorodifluoromethane	U		9.35	125	25	11/18/2023 04:47	WG2173624
1,1-Dichloroethane	U		2.50	25.0	25	11/18/2023 04:47	WG2173624
1,2-Dichloroethane	U		2.05	25.0	25	11/18/2023 04:47	WG2173624
1,1-Dichloroethene	U		4.70	25.0	25	11/18/2023 04:47	WG2173624
cis-1,2-Dichloroethene	U		3.15	25.0	25	11/18/2023 04:47	WG2173624
trans-1,2-Dichloroethene	U		3.73	25.0	25	11/18/2023 04:47	WG2173624
1,2-Dichloropropane	U		3.73	25.0	25	11/18/2023 04:47	WG2173624
1,1-Dichloropropene	U		3.55	25.0	25	11/18/2023 04:47	WG2173624
1,3-Dichloropropane	U		2.75	25.0	25	11/18/2023 04:47	WG2173624
cis-1,3-Dichloropropene	U		2.78	25.0	25	11/18/2023 04:47	WG2173624
trans-1,3-Dichloropropene	U		2.95	25.0	25	11/18/2023 04:47	WG2173624
2,2-Dichloropropane	U		4.03	25.0	25	11/18/2023 04:47	WG2173624
Di-isopropyl ether	U		2.63	25.0	25	11/18/2023 04:47	WG2173624
Ethylbenzene	U		3.43	25.0	25	11/18/2023 04:47	WG2173624
Hexachloro-1,3-butadiene	U		8.43	25.0	25	11/18/2023 04:47	WG2173624
Isopropylbenzene	24.7	J	2.63	25.0	25	11/18/2023 04:47	WG2173624
p-Isopropyltoluene	U		3.00	25.0	25	11/18/2023 04:47	WG2173624
2-Butanone (MEK)	U		29.8	250	25	11/18/2023 04:47	WG2173624
Methylene Chloride	U		10.7	125	25	11/18/2023 04:47	WG2173624
4-Methyl-2-pentanone (MIBK)	U		12.0	250	25	11/18/2023 04:47	WG2173624
Methyl tert-butyl ether	U		2.53	25.0	25	11/18/2023 04:47	WG2173624
Naphthalene	U	C3	25.0	125	25	11/18/2023 04:47	WG2173624

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	79.2		2.48	25.0	25	11/18/2023 04:47	WG2173624
Styrene	U		2.95	25.0	25	11/18/2023 04:47	WG2173624
1,1,1,2-Tetrachloroethane	U		3.68	25.0	25	11/18/2023 04:47	WG2173624
1,1,2,2-Tetrachloroethane	U		3.33	25.0	25	11/18/2023 04:47	WG2173624
1,1,2-Trichlorotrifluoroethane	U		4.50	25.0	25	11/18/2023 04:47	WG2173624
Tetrachloroethene	U		7.50	25.0	25	11/18/2023 04:47	WG2173624
Toluene	6.99	J	6.95	25.0	25	11/18/2023 04:47	WG2173624
1,2,3-Trichlorobenzene	U	C3	5.75	25.0	25	11/18/2023 04:47	WG2173624
1,2,4-Trichlorobenzene	U	C3	12.0	25.0	25	11/18/2023 04:47	WG2173624
1,1,1-Trichloroethane	U		3.73	25.0	25	11/18/2023 04:47	WG2173624
1,1,2-Trichloroethane	U		3.95	25.0	25	11/18/2023 04:47	WG2173624
Trichloroethene	U		4.75	25.0	25	11/18/2023 04:47	WG2173624
Trichlorofluoromethane	U		4.00	125	25	11/18/2023 04:47	WG2173624
1,2,3-Trichloropropane	U		5.93	62.5	25	11/18/2023 04:47	WG2173624
1,2,4-Trimethylbenzene	U		8.05	25.0	25	11/18/2023 04:47	WG2173624
1,2,3-Trimethylbenzene	4.43	J	2.60	25.0	25	11/18/2023 04:47	WG2173624
1,3,5-Trimethylbenzene	U		2.60	25.0	25	11/18/2023 04:47	WG2173624
Vinyl chloride	U		5.85	25.0	25	11/18/2023 04:47	WG2173624
Xylenes, Total	21.5	J	4.35	75.0	25	11/18/2023 04:47	WG2173624
(S) Toluene-d8	*111*			*80.0-120*		*11/18/2023 04:47*	WG2173624
(S) 4-Bromofluorobenzene	*92.6*			*77.0-126*		*11/18/2023 04:47*	WG2173624
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*		*11/18/2023 04:47*	WG2173624

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	709		31.6	100	1	11/14/2023 15:37	WG2170704
(S) a,a,a-Trifluorotoluene(FID)	*87.6*			*78.0-120*		*11/14/2023 15:37*	WG2170704

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	C3	11.3	50.0	1	11/20/2023 23:48	WG2174365
Acrolein	U	J3	2.54	50.0	1	11/20/2023 23:48	WG2174365
Acrylonitrile	U		0.671	10.0	1	11/20/2023 23:48	WG2174365
Benzene	28.7		0.0941	1.00	1	11/20/2023 23:48	WG2174365
Bromobenzene	U		0.118	1.00	1	11/20/2023 23:48	WG2174365
Bromodichloromethane	U		0.136	1.00	1	11/20/2023 23:48	WG2174365
Bromoform	U		0.129	1.00	1	11/20/2023 23:48	WG2174365
Bromomethane	U		0.605	5.00	1	11/20/2023 23:48	WG2174365
n-Butylbenzene	2.95		0.157	1.00	1	11/20/2023 23:48	WG2174365
sec-Butylbenzene	2.66		0.125	1.00	1	11/20/2023 23:48	WG2174365
tert-Butylbenzene	U		0.127	1.00	1	11/20/2023 23:48	WG2174365
Carbon disulfide	U		0.0962	1.00	1	11/20/2023 23:48	WG2174365
Carbon tetrachloride	U		0.128	1.00	1	11/20/2023 23:48	WG2174365
Chlorobenzene	U		0.116	1.00	1	11/20/2023 23:48	WG2174365
Chlorodibromomethane	U		0.140	1.00	1	11/20/2023 23:48	WG2174365
Chloroethane	U		0.192	5.00	1	11/20/2023 23:48	WG2174365
Chloroform	1.53	J	0.111	5.00	1	11/20/2023 23:48	WG2174365
Chloromethane	U		0.960	2.50	1	11/20/2023 23:48	WG2174365
2-Chlorotoluene	U		0.106	1.00	1	11/20/2023 23:48	WG2174365
4-Chlorotoluene	U		0.114	1.00	1	11/20/2023 23:48	WG2174365
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	11/20/2023 23:48	WG2174365
1,2-Dibromoethane	U		0.126	1.00	1	11/20/2023 23:48	WG2174365
Dibromomethane	U		0.122	1.00	1	11/20/2023 23:48	WG2174365
1,2-Dichlorobenzene	U		0.107	1.00	1	11/20/2023 23:48	WG2174365
1,3-Dichlorobenzene	U		0.110	1.00	1	11/20/2023 23:48	WG2174365
1,4-Dichlorobenzene	U		0.120	1.00	1	11/20/2023 23:48	WG2174365
Dichlorodifluoromethane	U		0.374	5.00	1	11/20/2023 23:48	WG2174365
1,1-Dichloroethane	U		0.100	1.00	1	11/20/2023 23:48	WG2174365
1,2-Dichloroethane	U		0.0819	1.00	1	11/20/2023 23:48	WG2174365
1,1-Dichloroethene	U		0.188	1.00	1	11/20/2023 23:48	WG2174365
cis-1,2-Dichloroethene	U		0.126	1.00	1	11/20/2023 23:48	WG2174365
trans-1,2-Dichloroethene	U		0.149	1.00	1	11/20/2023 23:48	WG2174365
1,2-Dichloropropane	U		0.149	1.00	1	11/20/2023 23:48	WG2174365
1,1-Dichloropropene	U		0.142	1.00	1	11/20/2023 23:48	WG2174365
1,3-Dichloropropane	U		0.110	1.00	1	11/20/2023 23:48	WG2174365
cis-1,3-Dichloropropene	U		0.111	1.00	1	11/20/2023 23:48	WG2174365
trans-1,3-Dichloropropene	U		0.118	1.00	1	11/20/2023 23:48	WG2174365
2,2-Dichloropropane	U		0.161	1.00	1	11/20/2023 23:48	WG2174365
Di-isopropyl ether	U		0.105	1.00	1	11/20/2023 23:48	WG2174365
Ethylbenzene	14.5		0.137	1.00	1	11/20/2023 23:48	WG2174365
Hexachloro-1,3-butadiene	U		0.337	1.00	1	11/20/2023 23:48	WG2174365
Isopropylbenzene	9.54		0.105	1.00	1	11/20/2023 23:48	WG2174365
p-Isopropyltoluene	U		0.120	1.00	1	11/20/2023 23:48	WG2174365
2-Butanone (MEK)	U		1.19	10.0	1	11/20/2023 23:48	WG2174365
Methylene Chloride	U		0.430	5.00	1	11/20/2023 23:48	WG2174365
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	11/20/2023 23:48	WG2174365
Methyl tert-butyl ether	U		0.101	1.00	1	11/20/2023 23:48	WG2174365
Naphthalene	3.84	C3 J	1.00	5.00	1	11/20/2023 23:48	WG2174365

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	27.7		0.0993	1.00	1	11/20/2023 23:48	WG2174365
Styrene	U		0.118	1.00	1	11/20/2023 23:48	WG2174365
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	11/20/2023 23:48	WG2174365
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	11/20/2023 23:48	WG2174365
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	11/20/2023 23:48	WG2174365
Tetrachloroethene	U		0.300	1.00	1	11/20/2023 23:48	WG2174365
Toluene	0.377	J	0.278	1.00	1	11/20/2023 23:48	WG2174365
1,2,3-Trichlorobenzene	U		0.230	1.00	1	11/20/2023 23:48	WG2174365
1,2,4-Trichlorobenzene	U		0.481	1.00	1	11/20/2023 23:48	WG2174365
1,1,1-Trichloroethane	U		0.149	1.00	1	11/20/2023 23:48	WG2174365
1,1,2-Trichloroethane	U		0.158	1.00	1	11/20/2023 23:48	WG2174365
Trichloroethene	U		0.190	1.00	1	11/20/2023 23:48	WG2174365
Trichlorofluoromethane	U		0.160	5.00	1	11/20/2023 23:48	WG2174365
1,2,3-Trichloropropane	U		0.237	2.50	1	11/20/2023 23:48	WG2174365
1,2,4-Trimethylbenzene	0.727	J	0.322	1.00	1	11/20/2023 23:48	WG2174365
1,2,3-Trimethylbenzene	3.44		0.104	1.00	1	11/20/2023 23:48	WG2174365
1,3,5-Trimethylbenzene	0.157	J	0.104	1.00	1	11/20/2023 23:48	WG2174365
Vinyl chloride	U		0.234	1.00	1	11/20/2023 23:48	WG2174365
Xylenes, Total	2.69	J	0.174	3.00	1	11/20/2023 23:48	WG2174365
(S) Toluene-d8	*100*			*80.0-120*		*11/20/2023 23:48*	WG2174365
(S) 4-Bromofluorobenzene	*90.3*			*77.0-126*		*11/20/2023 23:48*	WG2174365
(S) 1,2-Dichloroethane-d4	*91.7*			*70.0-130*		*11/20/2023 23:48*	WG2174365

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	682		31.6	100	1	11/14/2023 15:59	WG2170704
(S) a,a,a-Trifluorotoluene(FID)	*97.6*			*78.0-120*		*11/14/2023 15:59*	WG2170704

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	C3	11.3	50.0	1	11/21/2023 00:10	WG2174365
Acrolein	U	J3	2.54	50.0	1	11/21/2023 00:10	WG2174365
Acrylonitrile	U		0.671	10.0	1	11/21/2023 00:10	WG2174365
Benzene	4.48		0.0941	1.00	1	11/21/2023 00:10	WG2174365
Bromobenzene	U		0.118	1.00	1	11/21/2023 00:10	WG2174365
Bromodichloromethane	U		0.136	1.00	1	11/21/2023 00:10	WG2174365
Bromoform	U		0.129	1.00	1	11/21/2023 00:10	WG2174365
Bromomethane	U		0.605	5.00	1	11/21/2023 00:10	WG2174365
n-Butylbenzene	U		0.157	1.00	1	11/21/2023 00:10	WG2174365
sec-Butylbenzene	0.584	J	0.125	1.00	1	11/21/2023 00:10	WG2174365
tert-Butylbenzene	U		0.127	1.00	1	11/21/2023 00:10	WG2174365
Carbon disulfide	U		0.0962	1.00	1	11/21/2023 00:10	WG2174365
Carbon tetrachloride	U		0.128	1.00	1	11/21/2023 00:10	WG2174365
Chlorobenzene	U		0.116	1.00	1	11/21/2023 00:10	WG2174365
Chlorodibromomethane	U		0.140	1.00	1	11/21/2023 00:10	WG2174365
Chloroethane	U		0.192	5.00	1	11/21/2023 00:10	WG2174365
Chloroform	U		0.111	5.00	1	11/21/2023 00:10	WG2174365
Chloromethane	U		0.960	2.50	1	11/21/2023 00:10	WG2174365
2-Chlorotoluene	U		0.106	1.00	1	11/21/2023 00:10	WG2174365
4-Chlorotoluene	U		0.114	1.00	1	11/21/2023 00:10	WG2174365
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	11/21/2023 00:10	WG2174365
1,2-Dibromoethane	U		0.126	1.00	1	11/21/2023 00:10	WG2174365
Dibromomethane	U		0.122	1.00	1	11/21/2023 00:10	WG2174365
1,2-Dichlorobenzene	U		0.107	1.00	1	11/21/2023 00:10	WG2174365
1,3-Dichlorobenzene	U		0.110	1.00	1	11/21/2023 00:10	WG2174365
1,4-Dichlorobenzene	U		0.120	1.00	1	11/21/2023 00:10	WG2174365
Dichlorodifluoromethane	U		0.374	5.00	1	11/21/2023 00:10	WG2174365
1,1-Dichloroethane	U		0.100	1.00	1	11/21/2023 00:10	WG2174365
1,2-Dichloroethane	U		0.0819	1.00	1	11/21/2023 00:10	WG2174365
1,1-Dichloroethene	U		0.188	1.00	1	11/21/2023 00:10	WG2174365
cis-1,2-Dichloroethene	U		0.126	1.00	1	11/21/2023 00:10	WG2174365
trans-1,2-Dichloroethene	U		0.149	1.00	1	11/21/2023 00:10	WG2174365
1,2-Dichloropropane	U		0.149	1.00	1	11/21/2023 00:10	WG2174365
1,1-Dichloropropene	U		0.142	1.00	1	11/21/2023 00:10	WG2174365
1,3-Dichloropropane	U		0.110	1.00	1	11/21/2023 00:10	WG2174365
cis-1,3-Dichloropropene	U		0.111	1.00	1	11/21/2023 00:10	WG2174365
trans-1,3-Dichloropropene	U		0.118	1.00	1	11/21/2023 00:10	WG2174365
2,2-Dichloropropane	U		0.161	1.00	1	11/21/2023 00:10	WG2174365
Di-isopropyl ether	U		0.105	1.00	1	11/21/2023 00:10	WG2174365
Ethylbenzene	9.54		0.137	1.00	1	11/21/2023 00:10	WG2174365
Hexachloro-1,3-butadiene	U		0.337	1.00	1	11/21/2023 00:10	WG2174365
Isopropylbenzene	0.958	J	0.105	1.00	1	11/21/2023 00:10	WG2174365
p-Isopropyltoluene	U		0.120	1.00	1	11/21/2023 00:10	WG2174365
2-Butanone (MEK)	U		1.19	10.0	1	11/21/2023 00:10	WG2174365
Methylene Chloride	U		0.430	5.00	1	11/21/2023 00:10	WG2174365
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	11/21/2023 00:10	WG2174365
Methyl tert-butyl ether	U		0.101	1.00	1	11/21/2023 00:10	WG2174365
Naphthalene	U	C3	1.00	5.00	1	11/21/2023 00:10	WG2174365

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	2.41		0.0993	1.00	1	11/21/2023 00:10	WG2174365
Styrene	U		0.118	1.00	1	11/21/2023 00:10	WG2174365
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	11/21/2023 00:10	WG2174365
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	11/21/2023 00:10	WG2174365
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	11/21/2023 00:10	WG2174365
Tetrachloroethene	U		0.300	1.00	1	11/21/2023 00:10	WG2174365
Toluene	0.750	J	0.278	1.00	1	11/21/2023 00:10	WG2174365
1,2,3-Trichlorobenzene	U		0.230	1.00	1	11/21/2023 00:10	WG2174365
1,2,4-Trichlorobenzene	U		0.481	1.00	1	11/21/2023 00:10	WG2174365
1,1,1-Trichloroethane	U		0.149	1.00	1	11/21/2023 00:10	WG2174365
1,1,2-Trichloroethane	U		0.158	1.00	1	11/21/2023 00:10	WG2174365
Trichloroethene	U		0.190	1.00	1	11/21/2023 00:10	WG2174365
Trichlorofluoromethane	U		0.160	5.00	1	11/21/2023 00:10	WG2174365
1,2,3-Trichloropropane	U		0.237	2.50	1	11/21/2023 00:10	WG2174365
1,2,4-Trimethylbenzene	2.24		0.322	1.00	1	11/21/2023 00:10	WG2174365
1,2,3-Trimethylbenzene	1.54		0.104	1.00	1	11/21/2023 00:10	WG2174365
1,3,5-Trimethylbenzene	0.455	J	0.104	1.00	1	11/21/2023 00:10	WG2174365
Vinyl chloride	U		0.234	1.00	1	11/21/2023 00:10	WG2174365
Xylenes, Total	7.60		0.174	3.00	1	11/21/2023 00:10	WG2174365
(S) Toluene-d8	*102*			*80.0-120*		*11/21/2023 00:10*	WG2174365
(S) 4-Bromofluorobenzene	*86.1*			*77.0-126*		*11/21/2023 00:10*	WG2174365
(S) 1,2-Dichloroethane-d4	*91.0*			*70.0-130*		*11/21/2023 00:10*	WG2174365

Method Blank (MB)

(MB) R3999871-2 11/14/23 00:36

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	47.5	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3999871-1 11/13/23 23:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4820	87.6	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*104*	*78.0-120*	

Method Blank (MB)

(MB) R4000466-3 11/14/23 12:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*104*			*78.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4000466-1 11/14/23 11:00 • (LCSD) R4000466-2 11/14/23 11:58

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	4920	5050	89.5	91.8	70.0-124			2.61	20
(S) a,a,a-Trifluorotoluene(FID)				*102*	*107*	*78.0-120*				

Method Blank (MB)

(MB) R4000471-2 11/15/23 10:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*105*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R4000471-1 11/15/23 09:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5340	97.1	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*107*	*78.0-120*	

Method Blank (MB)

(MB) R4002024-3 11/17/23 20:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	50.0
Acrolein	U		2.54	50.0
Acrylonitrile	U		0.671	10.0
Benzene	U		0.0941	1.00
Bromobenzene	U		0.118	1.00
Bromodichloromethane	U		0.136	1.00
Bromoform	U		0.129	1.00
Bromomethane	U		0.605	5.00
n-Butylbenzene	U		0.157	1.00
sec-Butylbenzene	U		0.125	1.00
tert-Butylbenzene	U		0.127	1.00
Carbon disulfide	U		0.0962	1.00
Carbon tetrachloride	U		0.128	1.00
Chlorobenzene	U		0.116	1.00
Chlorodibromomethane	U		0.140	1.00
Chloroethane	U		0.192	5.00
Chloroform	U		0.111	5.00
Chloromethane	U		0.960	2.50
2-Chlorotoluene	U		0.106	1.00
4-Chlorotoluene	U		0.114	1.00
1,2-Dibromo-3-Chloropropane	U		0.276	5.00
1,2-Dibromoethane	U		0.126	1.00
Dibromomethane	U		0.122	1.00
1,2-Dichlorobenzene	U		0.107	1.00
1,3-Dichlorobenzene	U		0.110	1.00
1,4-Dichlorobenzene	U		0.120	1.00
Dichlorodifluoromethane	U		0.374	5.00
1,1-Dichloroethane	U		0.100	1.00
1,2-Dichloroethane	U		0.0819	1.00
1,1-Dichloroethene	U		0.188	1.00
cis-1,2-Dichloroethene	U		0.126	1.00
trans-1,2-Dichloroethene	U		0.149	1.00
1,2-Dichloropropane	U		0.149	1.00
1,1-Dichloropropene	U		0.142	1.00
1,3-Dichloropropane	U		0.110	1.00
cis-1,3-Dichloropropene	U		0.111	1.00
trans-1,3-Dichloropropene	U		0.118	1.00
2,2-Dichloropropane	U		0.161	1.00
Di-isopropyl ether	U		0.105	1.00
Ethylbenzene	U		0.137	1.00

Method Blank (MB)

(MB) R4002024-3 11/17/23 20:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.337	1.00
Isopropylbenzene	U		0.105	1.00
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
Tetrachloroethene	U		0.300	1.00
Toluene	U		0.278	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	1.00
1,1,2-Trichloroethane	U		0.158	1.00
Trichloroethene	U		0.190	1.00
Trichlorofluoromethane	U		0.160	5.00
1,2,3-Trichloropropane	U		0.237	2.50
1,2,4-Trimethylbenzene	U		0.322	1.00
1,2,3-Trimethylbenzene	U		0.104	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Vinyl chloride	U		0.234	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	*109*			*80.0-120*
(S) 4-Bromofluorobenzene	*88.1*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*119*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4002024-1 11/17/23 19:29 • (LCSD) R4002024-2 11/17/23 19:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	46.7	43.2	187	173	19.0-160	J4	J4	7.79	27
Acrolein	25.0	39.4	36.5	158	146	10.0-160			7.64	26
Acrylonitrile	25.0	25.8	26.4	103	106	55.0-149			2.30	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4002024-1 11/17/23 19:29 • (LCSD) R4002024-2 11/17/23 19:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	5.03	4.98	101	99.6	70.0-123			0.999	20
Bromobenzene	5.00	4.49	4.65	89.8	93.0	73.0-121			3.50	20
Bromodichloromethane	5.00	5.23	5.10	105	102	75.0-120			2.52	20
Bromoform	5.00	5.39	5.07	108	101	68.0-132			6.12	20
Bromomethane	5.00	5.64	6.22	113	124	10.0-160			9.78	25
n-Butylbenzene	5.00	4.23	4.37	84.6	87.4	73.0-125			3.26	20
sec-Butylbenzene	5.00	4.57	4.58	91.4	91.6	75.0-125			0.219	20
tert-Butylbenzene	5.00	4.48	4.60	89.6	92.0	76.0-124			2.64	20
Carbon disulfide	5.00	4.75	4.68	95.0	93.6	61.0-128			1.48	20
Carbon tetrachloride	5.00	5.18	5.32	104	106	68.0-126			2.67	20
Chlorobenzene	5.00	5.21	5.26	104	105	80.0-121			0.955	20
Chlorodibromomethane	5.00	5.55	5.18	111	104	77.0-125			6.90	20
Chloroethane	5.00	6.91	6.70	138	134	47.0-150			3.09	20
Chloroform	5.00	5.55	5.18	111	104	73.0-120			6.90	20
Chloromethane	5.00	5.06	5.05	101	101	41.0-142			0.198	20
2-Chlorotoluene	5.00	4.67	5.01	93.4	100	76.0-123			7.02	20
4-Chlorotoluene	5.00	4.34	4.61	86.8	92.2	75.0-122			6.03	20
1,2-Dibromo-3-Chloropropane	5.00	3.47	3.55	69.4	71.0	58.0-134			2.28	20
1,2-Dibromoethane	5.00	5.26	5.32	105	106	80.0-122			1.13	20
Dibromomethane	5.00	4.99	4.84	99.8	96.8	80.0-120			3.05	20
1,2-Dichlorobenzene	5.00	4.82	4.96	96.4	99.2	79.0-121			2.86	20
1,3-Dichlorobenzene	5.00	4.77	4.99	95.4	99.8	79.0-120			4.51	20
1,4-Dichlorobenzene	5.00	4.93	4.91	98.6	98.2	79.0-120			0.406	20
Dichlorodifluoromethane	5.00	5.90	5.64	118	113	51.0-149			4.51	20
1,1-Dichloroethane	5.00	5.44	5.26	109	105	70.0-126			3.36	20
1,2-Dichloroethane	5.00	5.37	5.49	107	110	70.0-128			2.21	20
1,1-Dichloroethene	5.00	4.98	4.91	99.6	98.2	71.0-124			1.42	20
cis-1,2-Dichloroethene	5.00	4.93	4.89	98.6	97.8	73.0-120			0.815	20
trans-1,2-Dichloroethene	5.00	5.12	4.73	102	94.6	73.0-120			7.92	20
1,2-Dichloropropane	5.00	5.17	5.13	103	103	77.0-125			0.777	20
1,1-Dichloropropene	5.00	4.94	4.85	98.8	97.0	74.0-126			1.84	20
1,3-Dichloropropane	5.00	4.99	4.91	99.8	98.2	80.0-120			1.62	20
cis-1,3-Dichloropropene	5.00	4.36	4.26	87.2	85.2	80.0-123			2.32	20
trans-1,3-Dichloropropene	5.00	4.60	4.43	92.0	88.6	78.0-124			3.77	20
2,2-Dichloropropane	5.00	4.36	4.45	87.2	89.0	58.0-130			2.04	20
Di-isopropyl ether	5.00	5.17	4.98	103	99.6	58.0-138			3.74	20
Ethylbenzene	5.00	5.46	5.37	109	107	79.0-123			1.66	20
Hexachloro-1,3-butadiene	5.00	4.27	4.35	85.4	87.0	54.0-138			1.86	20
Isopropylbenzene	5.00	5.03	5.07	101	101	76.0-127			0.792	20
p-Isopropyltoluene	5.00	4.29	4.37	85.8	87.4	76.0-125			1.85	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4002024-1 11/17/23 19:29 • (LCSD) R4002024-2 11/17/23 19:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2-Butanone (MEK)	25.0	35.1	33.9	140	136	44.0-160			3.48	20
Methylene Chloride	5.00	5.19	5.24	104	105	67.0-120			0.959	20
4-Methyl-2-pentanone (MIBK)	25.0	28.8	27.0	115	108	68.0-142			6.45	20
Methyl tert-butyl ether	5.00	4.57	4.33	91.4	86.6	68.0-125			5.39	20
Naphthalene	5.00	2.76	2.88	55.2	57.6	54.0-135			4.26	20
n-Propylbenzene	5.00	4.56	4.65	91.2	93.0	77.0-124			1.95	20
Styrene	5.00	4.80	4.86	96.0	97.2	73.0-130			1.24	20
1,1,1,2-Tetrachloroethane	5.00	4.90	5.06	98.0	101	75.0-125			3.21	20
1,1,2,2-Tetrachloroethane	5.00	4.73	4.40	94.6	88.0	65.0-130			7.23	20
1,1,2-Trichlorotrifluoroethane	5.00	5.23	5.22	105	104	69.0-132			0.191	20
Tetrachloroethene	5.00	5.68	5.99	114	120	72.0-132			5.31	20
Toluene	5.00	5.21	5.10	104	102	79.0-120			2.13	20
1,2,3-Trichlorobenzene	5.00	3.47	3.44	69.4	68.8	50.0-138			0.868	20
1,2,4-Trichlorobenzene	5.00	3.90	3.63	78.0	72.6	57.0-137			7.17	20
1,1,1-Trichloroethane	5.00	5.24	5.08	105	102	73.0-124			3.10	20
1,1,2-Trichloroethane	5.00	5.13	4.95	103	99.0	80.0-120			3.57	20
Trichloroethene	5.00	5.71	5.79	114	116	78.0-124			1.39	20
Trichlorofluoromethane	5.00	5.28	5.11	106	102	59.0-147			3.27	20
1,2,3-Trichloropropane	5.00	4.85	4.65	97.0	93.0	73.0-130			4.21	20
1,2,4-Trimethylbenzene	5.00	4.34	4.48	86.8	89.6	76.0-121			3.17	20
1,2,3-Trimethylbenzene	5.00	4.46	4.73	89.2	94.6	77.0-120			5.88	20
1,3,5-Trimethylbenzene	5.00	4.85	4.76	97.0	95.2	76.0-122			1.87	20
Vinyl chloride	5.00	5.81	5.87	116	117	67.0-131			1.03	20
Xylenes, Total	15.0	14.8	14.8	98.7	98.7	79.0-123			0.000	20
(S) Toluene-d8				*107*	*107*	*80.0-120*				
(S) 4-Bromofluorobenzene				*91.3*	*92.3*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*117*	*114*	*70.0-130*				

Method Blank (MB)

(MB) R4003006-4 11/20/23 21:55

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	50.0
Acrolein	U		2.54	50.0
Acrylonitrile	U		0.671	10.0
Benzene	U		0.0941	1.00
Bromobenzene	U		0.118	1.00
Bromodichloromethane	U		0.136	1.00
Bromoform	U		0.129	1.00
Bromomethane	U		0.605	5.00
n-Butylbenzene	U		0.157	1.00
sec-Butylbenzene	U		0.125	1.00
tert-Butylbenzene	U		0.127	1.00
Carbon disulfide	U		0.0962	1.00
Carbon tetrachloride	U		0.128	1.00
Chlorobenzene	U		0.116	1.00
Chlorodibromomethane	U		0.140	1.00
Chloroethane	U		0.192	5.00
Chloroform	U		0.111	5.00
Chloromethane	U		0.960	2.50
2-Chlorotoluene	U		0.106	1.00
4-Chlorotoluene	U		0.114	1.00
1,2-Dibromo-3-Chloropropane	U		0.276	5.00
1,2-Dibromoethane	U		0.126	1.00
Dibromomethane	U		0.122	1.00
1,2-Dichlorobenzene	U		0.107	1.00
1,3-Dichlorobenzene	U		0.110	1.00
1,4-Dichlorobenzene	U		0.120	1.00
Dichlorodifluoromethane	U		0.374	5.00
1,1-Dichloroethane	U		0.100	1.00
1,2-Dichloroethane	U		0.0819	1.00
1,1-Dichloroethene	U		0.188	1.00
cis-1,2-Dichloroethene	U		0.126	1.00
trans-1,2-Dichloroethene	U		0.149	1.00
1,2-Dichloropropane	U		0.149	1.00
1,1-Dichloropropene	U		0.142	1.00
1,3-Dichloropropane	U		0.110	1.00
cis-1,3-Dichloropropene	U		0.111	1.00
trans-1,3-Dichloropropene	U		0.118	1.00
2,2-Dichloropropane	U		0.161	1.00
Di-isopropyl ether	U		0.105	1.00
Ethylbenzene	U		0.137	1.00

Method Blank (MB)

(MB) R4003006-4 11/20/23 21:55

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.337	1.00
Isopropylbenzene	U		0.105	1.00
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
Tetrachloroethene	U		0.300	1.00
Toluene	U		0.278	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	1.00
1,1,2-Trichloroethane	U		0.158	1.00
Trichloroethene	0.491	J	0.190	1.00
Trichlorofluoromethane	U		0.160	5.00
1,2,3-Trichloropropane	U		0.237	2.50
1,2,4-Trimethylbenzene	U		0.322	1.00
1,2,3-Trimethylbenzene	U		0.104	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Vinyl chloride	U		0.234	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	*102*			*80.0-120*
(S) 4-Bromofluorobenzene	*83.3*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*96.1*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4003006-1 11/20/23 20:27 • (LCSD) R4003006-2 11/20/23 20:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	17.9	18.0	71.6	72.0	19.0-160			0.557	27
Acrolein	25.0	22.7	7.15	90.8	28.6	10.0-160		J3	104	26
Acrylonitrile	25.0	22.8	20.7	91.2	82.8	55.0-149			9.66	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4003006-1 11/20/23 20:27 • (LCSD) R4003006-2 11/20/23 20:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.82	5.09	96.4	102	70.0-123			5.45	20
Bromobenzene	5.00	4.43	4.86	88.6	97.2	73.0-121			9.26	20
Bromodichloromethane	5.00	4.73	4.81	94.6	96.2	75.0-120			1.68	20
Bromoform	5.00	4.81	4.97	96.2	99.4	68.0-132			3.27	20
Bromomethane	5.00	6.50	6.74	130	135	10.0-160			3.63	25
n-Butylbenzene	5.00	4.55	5.15	91.0	103	73.0-125			12.4	20
sec-Butylbenzene	5.00	4.59	5.31	91.8	106	75.0-125			14.5	20
tert-Butylbenzene	5.00	4.55	5.17	91.0	103	76.0-124			12.8	20
Carbon disulfide	5.00	4.48	5.19	89.6	104	61.0-128			14.7	20
Carbon tetrachloride	5.00	5.24	5.43	105	109	68.0-126			3.56	20
Chlorobenzene	5.00	4.96	5.47	99.2	109	80.0-121			9.78	20
Chlorodibromomethane	5.00	5.07	5.50	101	110	77.0-125			8.14	20
Chloroethane	5.00	5.71	5.77	114	115	47.0-150			1.05	20
Chloroform	5.00	4.98	5.33	99.6	107	73.0-120			6.79	20
Chloromethane	5.00	4.54	4.93	90.8	98.6	41.0-142			8.24	20
2-Chlorotoluene	5.00	4.73	5.03	94.6	101	76.0-123			6.15	20
4-Chlorotoluene	5.00	4.51	5.15	90.2	103	75.0-122			13.3	20
1,2-Dibromo-3-Chloropropane	5.00	4.46	4.24	89.2	84.8	58.0-134			5.06	20
1,2-Dibromoethane	5.00	5.18	5.45	104	109	80.0-122			5.08	20
Dibromomethane	5.00	5.00	4.82	100	96.4	80.0-120			3.67	20
1,2-Dichlorobenzene	5.00	5.04	5.57	101	111	79.0-121			9.99	20
1,3-Dichlorobenzene	5.00	5.11	5.29	102	106	79.0-120			3.46	20
1,4-Dichlorobenzene	5.00	5.45	5.63	109	113	79.0-120			3.25	20
Dichlorodifluoromethane	5.00	4.50	4.68	90.0	93.6	51.0-149			3.92	20
1,1-Dichloroethane	5.00	4.96	4.92	99.2	98.4	70.0-126			0.810	20
1,2-Dichloroethane	5.00	5.07	4.79	101	95.8	70.0-128			5.68	20
1,1-Dichloroethene	5.00	4.80	5.23	96.0	105	71.0-124			8.57	20
cis-1,2-Dichloroethene	5.00	4.67	4.94	93.4	98.8	73.0-120			5.62	20
trans-1,2-Dichloroethene	5.00	4.70	5.37	94.0	107	73.0-120			13.3	20
1,2-Dichloropropane	5.00	4.59	4.51	91.8	90.2	77.0-125			1.76	20
1,1-Dichloropropene	5.00	4.84	4.99	96.8	99.8	74.0-126			3.05	20
1,3-Dichloropropane	5.00	5.19	5.32	104	106	80.0-120			2.47	20
cis-1,3-Dichloropropene	5.00	4.55	4.54	91.0	90.8	80.0-123			0.220	20
trans-1,3-Dichloropropene	5.00	4.99	4.76	99.8	95.2	78.0-124			4.72	20
2,2-Dichloropropane	5.00	4.39	4.53	87.8	90.6	58.0-130			3.14	20
Di-isopropyl ether	5.00	4.38	4.50	87.6	90.0	58.0-138			2.70	20
Ethylbenzene	5.00	4.67	5.25	93.4	105	79.0-123			11.7	20
Hexachloro-1,3-butadiene	5.00	5.77	6.52	115	130	54.0-138			12.2	20
Isopropylbenzene	5.00	4.58	5.15	91.6	103	76.0-127			11.7	20
p-Isopropyltoluene	5.00	4.24	4.88	84.8	97.6	76.0-125			14.0	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4003006-1 11/20/23 20:27 • (LCSD) R4003006-2 11/20/23 20:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2-Butanone (MEK)	25.0	20.7	21.0	82.8	84.0	44.0-160			1.44	20
Methylene Chloride	5.00	5.00	5.01	100	100	67.0-120			0.200	20
4-Methyl-2-pentanone (MIBK)	25.0	24.8	24.4	99.2	97.6	68.0-142			1.63	20
Methyl tert-butyl ether	5.00	4.37	4.50	87.4	90.0	68.0-125			2.93	20
Naphthalene	5.00	3.95	4.12	79.0	82.4	54.0-135			4.21	20
n-Propylbenzene	5.00	4.44	4.89	88.8	97.8	77.0-124			9.65	20
Styrene	5.00	4.58	4.63	91.6	92.6	73.0-130			1.09	20
1,1,1,2-Tetrachloroethane	5.00	5.30	5.71	106	114	75.0-125			7.45	20
1,1,2,2-Tetrachloroethane	5.00	4.77	4.98	95.4	99.6	65.0-130			4.31	20
1,1,2-Trichlorotrifluoroethane	5.00	5.02	5.68	100	114	69.0-132			12.3	20
Tetrachloroethene	5.00	5.16	6.00	103	120	72.0-132			15.1	20
Toluene	5.00	4.96	5.34	99.2	107	79.0-120			7.38	20
1,2,3-Trichlorobenzene	5.00	5.53	5.60	111	112	50.0-138			1.26	20
1,2,4-Trichlorobenzene	5.00	4.88	5.39	97.6	108	57.0-137			9.93	20
1,1,1-Trichloroethane	5.00	4.94	5.32	98.8	106	73.0-124			7.41	20
1,1,2-Trichloroethane	5.00	5.41	5.19	108	104	80.0-120			4.15	20
Trichloroethene	5.00	6.15	6.09	123	122	78.0-124			0.980	20
Trichlorofluoromethane	5.00	6.15	7.07	123	141	59.0-147			13.9	20
1,2,3-Trichloropropane	5.00	5.20	5.20	104	104	73.0-130			0.000	20
1,2,4-Trimethylbenzene	5.00	4.38	5.01	87.6	100	76.0-121			13.4	20
1,2,3-Trimethylbenzene	5.00	4.50	4.82	90.0	96.4	77.0-120			6.87	20
1,3,5-Trimethylbenzene	5.00	4.44	4.79	88.8	95.8	76.0-122			7.58	20
Vinyl chloride	5.00	5.45	6.07	109	121	67.0-131			10.8	20
Xylenes, Total	15.0	14.5	15.9	96.7	106	79.0-123			9.21	20
(S) Toluene-d8				*99.7*	*102*	*80.0-120*				
(S) 4-Bromofluorobenzene				*85.8*	*88.4*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*93.0*	*91.9*	*70.0-130*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Agency, Authorized Purchaser or Agent: Oregon DEQ

Send Lab Report To: Kara Master
Address: Department of Environmental Quality
700 NE Multnomah St, Suite 600
Portland, OR 97232

E-mail: Kara.E.MASTER@deq.oregon.gov

Contract Laboratory Name: Pace National
Lab Batch #:

Invoice To: ODEQ/Business Office
Address: 700 NE Multnomah Street, Suite 600
Portland, OR. 97232

Tel. #: (800) 452-4011

Lab Selection Criteria:
- ☐ Proximity (if TAT < 48 hrs)
- ☐ Prior work on same project
- ☒ Cost (for anticipated analyses)
- ☐ Other labs disqualified or unable to perform requested services
- ☐ Emergency work

Turn Around Time:
- ☒ 10 days (std.)
- ☐ 5 days
- ☐ 72 hours
- ☐ 48 hours
- ☐ 24 hours
- ☐ Other

Project Name: **Johnson Oil**
Project #: **23005297**

6= 6V, B 2TB3

CII
LI676670

Sample ID#	Collection Date/Time	Matrix	Number of Containers	Sample Preservative: HCl	HCl								Comments
				Requested Analyses: NWTPH-Gx	VOCs – EPA 8260B								
MW-4	11/08/2023 – 1439	GW	6	X	X								-01
MW-5	11/08/2023 – 1206	GW	6	X	X								-02
MW-6	11/08/2023 – 1252	GW	6	X	X								-03
MW-7	11/08/2023 – 1540	GW	6	X	X								-04
MW-8	11/07/2023 – 1247	GW	6	X	X								-05
MW-9	11/07/2023 – 1341	GW	6	X	X								-06
MW-12	11/08/2023 – 1525	GW	6	X	X								-07
MW-13	11/07/2023 – 1454	GW	6	X	X								-08
MW-14	11/08/2023 – 1120	GW	6	X	X								-09
MW-15	11/07/2023 – 1420	GW	6	X	X								-10
DUP	11/07/2023 – 1458	GW	6	X	X								-11

Notes: Report Results to: MStevens@apexcos.com;steve.misner@apexcos.com; Kara.E.MASTER@deq.oregon.gov

OPAB 2.5+0=2.5 7074 8788 0944

Relinquished By: David Kolpacki	Agency/Agent: Apex Companies	Received By:	Agency:
Signature: David Kolpacki	Time & Date: 1200 - 11/09/2023	Signature:	Time & Date:
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent: PACE
Signature:	Time & Date:	Signature:	Time & Date: 11-10-23 9:20

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #**102-1098-07** AND PRICE AGREEMENT # **8903**. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres. Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RA Screen <0.5 mR/hr:	Y N		

11/10-NCF-L1676670-OREGONDEQ PM

R5

Time estimate: oh **Time spent:** oh

Members


Paul Minnich (responsible)

- [ ] Parameter(s) past holding time
- [ ] Temperature not in range
- [ ] Improper container type
- [ ] pH not in range
- [ ] Insufficient sample volume
- [ ] Sample is biphasic
- [ ] Vials received with headspace
- [x] Broken container
- [x] Sufficient sample remains
- [ ] If broken container: Insufficient packing material around container
- [ ] If broken container: Insufficient packing material inside cooler
- [ ] If broken container: Improper handling by carrier:_____
- [ ] If broken container: Sample was frozen
- [ ] If broken container: Container lid not intact
- [ ] Client informed by Call
- [ ] Client informed by Email
- [ ] Client informed by Voicemail
- [ ] Date/Time:_____
- [ ] PM initials:_____
- [ ] Client Contact:_____

Comments

Paul Minnich *10 November 2023 11:09 PM*

Sample MW-4 lost one vial

ANALYTICAL REPORT

November 17, 2023

Oregon Dept. of Env. Quality - ODEQ

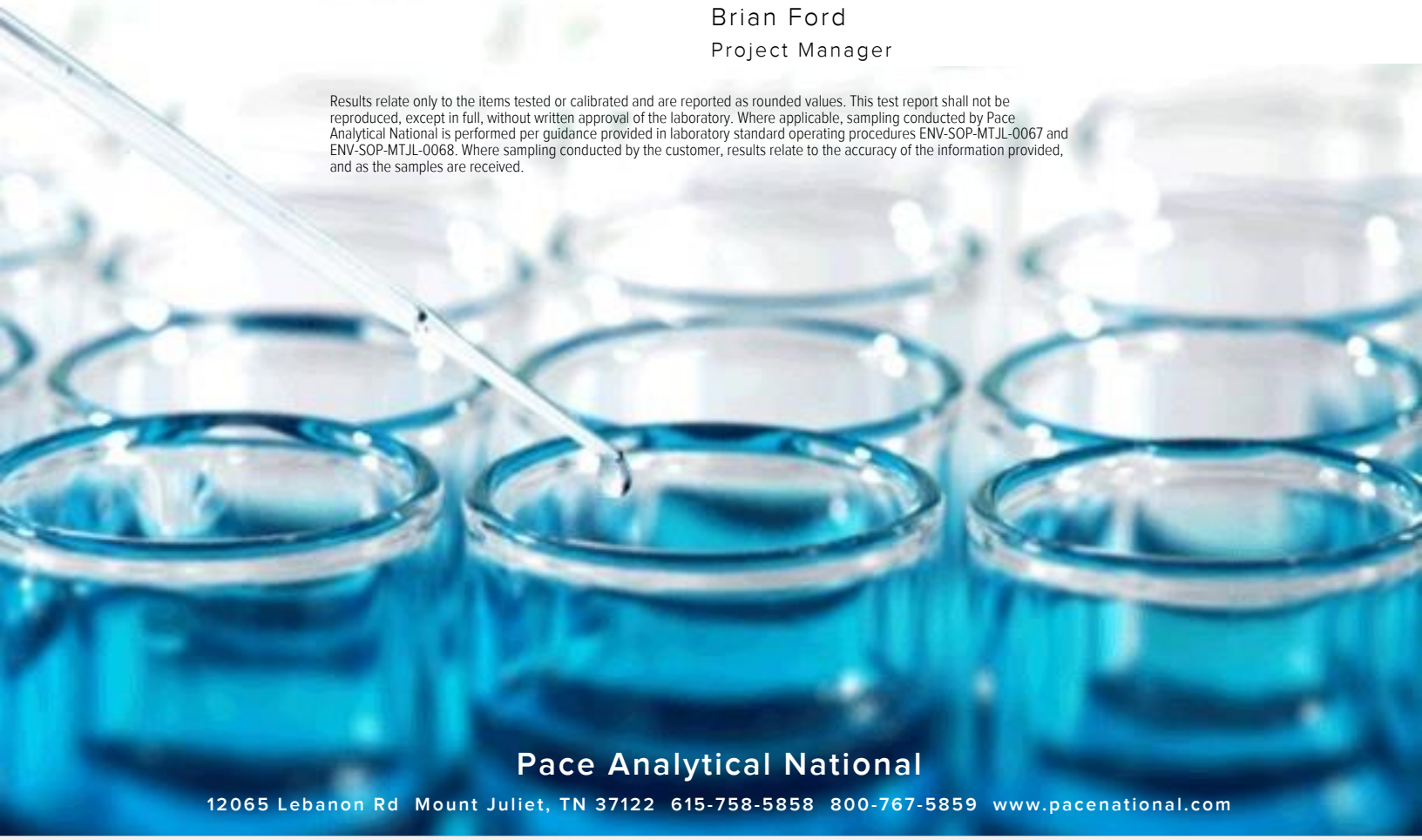
Sample Delivery Group:	L1675803
Samples Received:	11/09/2023
Project Number:	23005297
Description:	Johnson Oil
Report To:	Kara Master

Entire Report Reviewed By:

Brian Ford

Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 4

Sr: Sample Results 5

SG-7 L1675803-01 5

SG-8 L1675803-02 7

SG-10 L1675803-03 9

Qc: Quality Control Summary 11

Volatile Organic Compounds (MS) by Method TO-15 11

Gl: Glossary of Terms 15

Al: Accreditations & Locations 16

Sc: Sample Chain of Custody 17

SG-7 L1675803-01 Air

Collected by	Collected date/time	Received date/time
	11/07/23 08:48	11/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG2171523	1	11/15/23 14:30	11/15/23 14:30	DAH	Mt. Juliet, TN

SG-8 L1675803-02 Air

Collected by	Collected date/time	Received date/time
	11/07/23 08:53	11/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG2171523	1	11/15/23 14:57	11/15/23 14:57	DAH	Mt. Juliet, TN

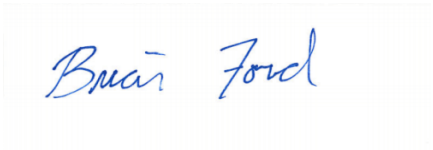
SG-10 L1675803-03 Air

Collected by	Collected date/time	Received date/time
	11/07/23 10:02	11/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG2171523	1	11/15/23 15:24	11/15/23 15:24	DAH	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	3.67	8.72		1	WG2171523
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG2171523
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG2171523
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG2171523
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG2171523
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG2171523
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG2171523
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG2171523
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG2171523
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG2171523
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG2171523
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG2171523
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG2171523
Chloromethane	74-87-3	50.50	0.200	0.413	0.286	0.591		1	WG2171523
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG2171523
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG2171523
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG2171523
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG2171523
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG2171523
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG2171523
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG2171523
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG2171523
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG2171523
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG2171523
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG2171523
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG2171523
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG2171523
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG2171523
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG2171523
1,4-Dioxane	123-91-1	88.10	0.630	2.27	ND	ND		1	WG2171523
Ethanol	64-17-5	46.10	2.50	4.71	7.88	14.9	B	1	WG2171523
Ethylbenzene	100-41-4	106	0.200	0.867	0.562	2.44		1	WG2171523
4-Ethyltoluene	622-96-8	120	0.200	0.982	1.31	6.43		1	WG2171523
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.263	1.48		1	WG2171523
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.343	1.70		1	WG2171523
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG2171523
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG2171523
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG2171523
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG2171523
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG2171523
Isopropylbenzene	98-82-8	120.20	0.200	0.983	0.831	4.09		1	WG2171523
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.433	1.50		1	WG2171523
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG2171523
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG2171523
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG2171523
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG2171523
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG2171523
Naphthalene	91-20-3	128	0.630	3.30	1.78	9.32		1	WG2171523
2-Propanol	67-63-0	60.10	1.25	3.07	2.03	4.99	B	1	WG2171523
Propene	115-07-1	42.10	1.25	2.15	ND	ND		1	WG2171523
n-Propylbenzene	103-65-1	120	0.200	0.982	1.67	8.20		1	WG2171523
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG2171523
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG2171523
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.436	2.96		1	WG2171523
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG2171523
Toluene	108-88-3	92.10	0.500	1.88	0.890	3.35		1	WG2171523

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG2171523
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG2171523
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG2171523
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG2171523
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	10.7	52.5		1	WG2171523
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	5.27	25.9		1	WG2171523
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG2171523
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG2171523
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG2171523
Vinyl acetate	108-05-4	86.10	0.630	2.22	ND	ND		1	WG2171523
m&p-Xylene	1330-20-7	106	0.400	1.73	2.79	12.1		1	WG2171523
o-Xylene	95-47-6	106	0.200	0.867	2.44	10.6		1	WG2171523
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	339	1400	B	1	WG2171523
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*104*				WG2171523

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	5.01	11.9		1	WG2171523
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG2171523
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG2171523
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG2171523
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG2171523
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG2171523
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG2171523
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG2171523
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG2171523
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG2171523
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG2171523
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG2171523
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG2171523
Chloromethane	74-87-3	50.50	0.200	0.413	0.515	1.06		1	WG2171523
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG2171523
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG2171523
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG2171523
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG2171523
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG2171523
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG2171523
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG2171523
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG2171523
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG2171523
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG2171523
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG2171523
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG2171523
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG2171523
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG2171523
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG2171523
1,4-Dioxane	123-91-1	88.10	0.630	2.27	ND	ND		1	WG2171523
Ethanol	64-17-5	46.10	2.50	4.71	16.5	31.1		1	WG2171523
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG2171523
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG2171523
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.208	1.17		1	WG2171523
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.417	2.06		1	WG2171523
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG2171523
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG2171523
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG2171523
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG2171523
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG2171523
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG2171523
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.890	3.09		1	WG2171523
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG2171523
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG2171523
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG2171523
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG2171523
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG2171523
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG2171523
2-Propanol	67-63-0	60.10	1.25	3.07	3.98	9.78	B	1	WG2171523
Propene	115-07-1	42.10	1.25	2.15	ND	ND		1	WG2171523
n-Propylbenzene	103-65-1	120	0.200	0.982	ND	ND		1	WG2171523
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG2171523
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG2171523
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG2171523
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG2171523
Toluene	108-88-3	92.10	0.500	1.88	0.821	3.09		1	WG2171523

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG2171523
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG2171523
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG2171523
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG2171523
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG2171523
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG2171523
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG2171523
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG2171523
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG2171523
Vinyl acetate	108-05-4	86.10	0.630	2.22	ND	ND		1	WG2171523
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG2171523
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG2171523
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	ND	ND		1	WG2171523
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*104*				WG2171523

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	8.64	20.5		1	WG2171523
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG2171523
Benzene	71-43-2	78.10	0.200	0.639	0.214	0.684		1	WG2171523
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG2171523
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG2171523
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG2171523
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG2171523
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG2171523
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.286	0.890		1	WG2171523
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG2171523
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG2171523
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG2171523
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG2171523
Chloromethane	74-87-3	50.50	0.200	0.413	0.268	0.554		1	WG2171523
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG2171523
Cyclohexane	110-82-7	84.20	0.200	0.689	2.37	8.16		1	WG2171523
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG2171523
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG2171523
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG2171523
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG2171523
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG2171523
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG2171523
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG2171523
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG2171523
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG2171523
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG2171523
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG2171523
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG2171523
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG2171523
1,4-Dioxane	123-91-1	88.10	0.630	2.27	ND	ND		1	WG2171523
Ethanol	64-17-5	46.10	2.50	4.71	31.1	58.6		1	WG2171523
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG2171523
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG2171523
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG2171523
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.403	1.99		1	WG2171523
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG2171523
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG2171523
Heptane	142-82-5	100	0.200	0.818	0.629	2.57		1	WG2171523
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG2171523
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG2171523
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG2171523
Methylene Chloride	75-09-2	84.90	0.200	0.694	1.49	5.17		1	WG2171523
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG2171523
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	4.29	12.7		1	WG2171523
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG2171523
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG2171523
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG2171523
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG2171523
2-Propanol	67-63-0	60.10	1.25	3.07	20.3	49.9		1	WG2171523
Propene	115-07-1	42.10	1.25	2.15	ND	ND		1	WG2171523
n-Propylbenzene	103-65-1	120	0.200	0.982	ND	ND		1	WG2171523
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG2171523
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG2171523
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG2171523
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	0.442	1.30		1	WG2171523
Toluene	108-88-3	92.10	0.500	1.88	1.74	6.55		1	WG2171523

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG2171523
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG2171523
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG2171523
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG2171523
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG2171523
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG2171523
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG2171523
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG2171523
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG2171523
Vinyl acetate	108-05-4	86.10	0.630	2.22	ND	ND		1	WG2171523
m&p-Xylene	1330-20-7	106	0.400	1.73	0.420	1.82		1	WG2171523
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG2171523
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	280	1160	B	1	WG2171523
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*108*				WG2171523

Method Blank (MB)

(MB) R4000874-3 11/15/23 09:32

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.630
Ethanol	1.27	J	0.265	2.50
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Heptane	U		0.104	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630

Method Blank (MB)

(MB) R4000874-3 11/15/23 09:32

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Isopropylbenzene	U		0.0777	0.200
Methylene Chloride	U		0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	1.05	J	0.264	1.25
Propene	U		0.0932	1.25
n-Propylbenzene	U		0.0773	0.200
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
Toluene	U		0.0870	0.500
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.630
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
TPH (GC/MS) Low Fraction	45.5	J	39.7	200
(S) 1,4-Bromofluorobenzene	*98.3*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4000874-1 11/15/23 08:36 • (LCSD) R4000874-2 11/15/23 09:05

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	3.75	3.77	3.60	101	96.0	70.0-130			4.61	25
Allyl chloride	3.75	3.69	3.54	98.4	94.4	70.0-130			4.15	25
Benzene	3.75	3.72	3.61	99.2	96.3	70.0-130			3.00	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4000874-1 11/15/23 08:36 • (LCSD) R4000874-2 11/15/23 09:05

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzyl Chloride	3.75	4.27	4.04	114	108	70.0-152			5.54	25
Bromodichloromethane	3.75	3.67	3.53	97.9	94.1	70.0-130			3.89	25
Bromoform	3.75	3.99	3.73	106	99.5	70.0-130			6.74	25
Bromomethane	3.75	3.94	3.82	105	102	70.0-130			3.09	25
1,3-Butadiene	3.75	3.73	3.59	99.5	95.7	70.0-130			3.83	25
Carbon disulfide	3.75	3.91	3.80	104	101	70.0-130			2.85	25
Carbon tetrachloride	3.75	3.74	3.60	99.7	96.0	70.0-130			3.81	25
Chlorobenzene	3.75	3.68	3.61	98.1	96.3	70.0-130			1.92	25
Chloroethane	3.75	3.79	3.70	101	98.7	70.0-130			2.40	25
Chloroform	3.75	3.74	3.60	99.7	96.0	70.0-130			3.81	25
Chloromethane	3.75	3.84	3.66	102	97.6	70.0-130			4.80	25
2-Chlorotoluene	3.75	3.88	3.78	103	101	70.0-130			2.61	25
Cyclohexane	3.75	3.67	3.53	97.9	94.1	70.0-130			3.89	25
Dibromochloromethane	3.75	3.77	3.63	101	96.8	70.0-130			3.78	25
1,2-Dibromoethane	3.75	3.82	3.68	102	98.1	70.0-130			3.73	25
1,2-Dichlorobenzene	3.75	4.08	3.93	109	105	70.0-130			3.75	25
1,3-Dichlorobenzene	3.75	4.19	4.06	112	108	70.0-130			3.15	25
1,4-Dichlorobenzene	3.75	4.29	4.08	114	109	70.0-130			5.02	25
1,2-Dichloroethane	3.75	3.74	3.58	99.7	95.5	70.0-130			4.37	25
1,1-Dichloroethane	3.75	3.65	3.56	97.3	94.9	70.0-130			2.50	25
1,1-Dichloroethene	3.75	3.84	3.71	102	98.9	70.0-130			3.44	25
cis-1,2-Dichloroethene	3.75	3.71	3.58	98.9	95.5	70.0-130			3.57	25
trans-1,2-Dichloroethene	3.75	3.69	3.55	98.4	94.7	70.0-130			3.87	25
1,2-Dichloropropane	3.75	3.64	3.48	97.1	92.8	70.0-130			4.49	25
cis-1,3-Dichloropropene	3.75	3.78	3.83	101	102	70.0-130			1.31	25
trans-1,3-Dichloropropene	3.75	3.75	3.60	100	96.0	70.0-130			4.08	25
1,4-Dioxane	3.75	4.24	4.01	113	107	70.0-140			5.58	25
Ethanol	3.75	4.33	4.20	115	112	55.0-148			3.05	25
Ethylbenzene	3.75	3.90	3.71	104	98.9	70.0-130			4.99	25
4-Ethyltoluene	3.75	4.00	3.83	107	102	70.0-130			4.34	25
Trichlorofluoromethane	3.75	3.86	3.72	103	99.2	70.0-130			3.69	25
Dichlorodifluoromethane	3.75	3.97	3.83	106	102	64.0-139			3.59	25
1,1,2-Trichlorotrifluoroethane	3.75	3.96	3.86	106	103	70.0-130			2.56	25
1,2-Dichlorotetrafluoroethane	3.75	3.97	3.84	106	102	70.0-130			3.33	25
Heptane	3.75	3.73	3.58	99.5	95.5	70.0-130			4.10	25
Hexachloro-1,3-butadiene	3.75	4.02	4.03	107	107	70.0-151			0.248	25
n-Hexane	3.75	3.75	3.58	100	95.5	70.0-130			4.64	25
Isopropylbenzene	3.75	3.85	3.73	103	99.5	70.0-130			3.17	25
Methylene Chloride	3.75	3.70	3.56	98.7	94.9	70.0-130			3.86	25
Methyl Butyl Ketone	3.75	4.37	4.13	117	110	70.0-149			5.65	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4000874-1 11/15/23 08:36 • (LCSD) R4000874-2 11/15/23 09:05

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2-Butanone (MEK)	3.75	3.73	3.58	99.5	95.5	70.0-130			4.10	25
4-Methyl-2-pentanone (MIBK)	3.75	3.35	3.22	89.3	85.9	70.0-139			3.96	25
Methyl methacrylate	3.75	3.65	3.55	97.3	94.7	70.0-130			2.78	25
MTBE	3.75	3.72	3.56	99.2	94.9	70.0-130			4.40	25
Naphthalene	3.75	4.46	4.29	119	114	70.0-159			3.89	25
2-Propanol	3.75	4.17	4.02	111	107	70.0-139			3.66	25
Propene	3.75	3.61	3.43	96.3	91.5	64.0-144			5.11	25
n-Propylbenzene	3.75	3.98	3.84	106	102	70.0-130			3.58	25
Styrene	3.75	3.98	3.81	106	102	70.0-130			4.36	25
1,1,2,2-Tetrachloroethane	3.75	3.97	3.77	106	101	70.0-130			5.17	25
Tetrachloroethylene	3.75	3.85	3.61	103	96.3	70.0-130			6.43	25
Tetrahydrofuran	3.75	3.54	3.40	94.4	90.7	70.0-137			4.03	25
Toluene	3.75	3.71	3.60	98.9	96.0	70.0-130			3.01	25
1,2,4-Trichlorobenzene	3.75	4.16	4.19	111	112	70.0-160			0.719	25
1,1,1-Trichloroethane	3.75	3.67	3.56	97.9	94.9	70.0-130			3.04	25
1,1,2-Trichloroethane	3.75	3.70	3.56	98.7	94.9	70.0-130			3.86	25
Trichloroethylene	3.75	3.75	3.67	100	97.9	70.0-130			2.16	25
1,2,4-Trimethylbenzene	3.75	4.06	3.86	108	103	70.0-130			5.05	25
1,3,5-Trimethylbenzene	3.75	3.97	3.85	106	103	70.0-130			3.07	25
2,2,4-Trimethylpentane	3.75	3.69	3.57	98.4	95.2	70.0-130			3.31	25
Vinyl chloride	3.75	3.97	3.80	106	101	70.0-130			4.38	25
Vinyl Bromide	3.75	3.93	3.74	105	99.7	70.0-130			4.95	25
Vinyl acetate	3.75	3.61	3.40	96.3	90.7	70.0-130			5.99	25
m&p-Xylene	7.50	7.95	7.61	106	101	70.0-130			4.37	25
o-Xylene	3.75	3.93	3.75	105	100	70.0-130			4.69	25
TPH (GC/MS) Low Fraction	188	205	200	109	106	70.0-130			2.47	25
(S) 1,4-Bromofluorobenzene				*100*	*101*	*60.0-140*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

D053

Agency, Authorized Purchaser or Agent:
Oregon DEQ

Send Lab Report To: **Katie Daugherty/Kara Master**

Address: Department of Environmental Quality
700 NE Multnomah St, Suite 600
Portland, OR 97232

E-mail: Kara.E.MASTER@deq.oregon.gov; Katie.DAUGHERTY@deq.oregon.gov

Contract Laboratory Name: **Pace National**

Lab Batch #:

Invoice To: ODEQ/Business Office

Address: 700 NE Multnomah Street, Suite 600 Portland, OR. 97232

Tel. #: (800) 452-4011

Lab Selection Criteria:
- ☐ Proximity (if TAT < 48 hrs)
- ☐ Prior work on same project
- ☒ Cost (for anticipated analyses)
- ☐ Other labs disqualified or unable to perform requested services
- ☐ Emergency work

Turn Around Time:
- ☒ 10 days (std.)
- ☐ 5 days
- ☐ 72 hours
- ☐ 48 hours
- ☐ 24 hours
- ☐ Other _____

Project Name: **Johnson Oil**
Project #: **23005297**

Sample ID#	Matrix	Can #	FC #	Start date/time	End Date/Time	Sample Preservative: Start Pres (In Hg)	End Press (In Hg)	Duration (min)	Requested Analyses: TO -15					Comments
SG-7	SV	007970	0006679	11/7/23–0841	11/7/23-0848	-29	-1	7	X					L1675803-01
SG-8	SV	021282	029002	11/7/23-0846	11/7/23-0853	-29	-3	7	X					02
SG-10	SV	006070	012759	11/7/23-0957	11/7/23-1002	-21	-3	5	X					03

Sample Receipt Checklist
COC Seal Present/Intact: Y__N Airs
COC Signed/Accurate: Y__N Size: ✓ 1L ____6L ____1.4L
Bottles arrive intact: Y__N Tage Color: G__ W✓ P__ B__
Correct bottles used: Y__N Tubing ✓ Shunt __
6727 1895 8864

T/P#: 240854/1034/63-03

Notes: Report Results to: MStevens@apexcos.com; Steve.misner@apexcos.com; Kara.E.MASTER@deq.oregon.gov; Katie.DAUGHERTY@deq.oregon.gov

Relinquished By: Christine Weer	Agency/Agent: Apex Companies	Received By: Steve Misner	Agency: Apex Companies
Signature: Christine Weer	Time & Date: 11/8/2023 15:06	Signature: Steve Misner	Time & Date: 11/8/23-1506
Relinquished By: Steve Misner	Agency/Agent: Apex Companies	Received By: Brandon Garland	Agency/Agent:
Signature: Steve Misner	Time & Date: 11/8/23 1530	Signature:	Time & Date: 11/09/23 0900

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #**102-1098-07** AND PRICE AGREEMENT # **8903**. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

eurofins | Air Toxics

11/29/2023
Mr. Steve Misner
Apex Companies, LLC (formerly Ash Creek Associates)
15618 SW 72nd Ave

Tigard OR 97224

Project Name: Johnson Oil
Project #: 23005297
Workorder #: 2311294

Dear Mr. Steve Misner

The following report includes the data for the above referenced project for sample(s) received on 11/14/2023 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Passive RAD 145 (TD) are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

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

Regards,

Monica Tran

Project Manager

eurofins | Air Toxics

WORK ORDER #: 2311294

Work Order Summary

CLIENT:	Mr. Steve Misner Apex Companies, LLC 15618 SW 72nd Ave Tigard, OR 97224	**BILL TO:**	Accounts Payable Apex Companies, LLC 3015 SW 1st Avenue Portland, OR 97201
PHONE:	503-974-0429	**P.O. #**	23005297
FAX:		**PROJECT #**	23005297 Johnson Oil
DATE RECEIVED:	11/14/2023	**CONTACT:**	Monica Tran
DATE COMPLETED:	11/29/2023		

FRACTION #	NAME	TEST
01A	AMB-1	Passive RAD 145 (TD)
02A	AMB-2	Passive RAD 145 (TD)
03A	AMB-3	Passive RAD 145 (TD)
04A	AMB-4	Passive RAD 145 (TD)
05A	Lab Blank	Passive RAD 145 (TD)
05B	Lab Blank	Passive RAD 145 (TD)
06A	CCV	Passive RAD 145 (TD)
06B	CCV	Passive RAD 145 (TD)
06C	CCV	Passive RAD 145 (TD)
07A	LCS	Passive RAD 145 (TD)
07AA	LCSD	Passive RAD 145 (TD)
07B	LCS	Passive RAD 145 (TD)
07BB	LCSD	Passive RAD 145 (TD)

CERTIFIED BY: Heidi Hayes DATE: 11/29/23

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

LABORATORY NARRATIVE
Passive TO-17 GC/MS
Apex Companies, LLC (formerly Ash Creek Associates)
Workorder# 2311294

Four Radiello 145 (VOC TD) samples were received on November 14, 2023. The laboratory performed the analysis via EPA Method TO-17 using GC/MS in the full scan mode.

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value.

The modification to EPA Method TO-17 method is based on the sample collection procedures. Method TO-17 relies on active sample collection rather than passive sample collection.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

To calculate ug/m3 concentrations in the Lab Blank, a sampling duration of 9190 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

Samples AMB-1 and AMB-2 had mass concentrations for Toluene above the standard calibration range at saturated levels. To provide reliable results, the recollected tube sample was analyzed at a higher split than the initial calibration. The results for all compounds were reported from the higher split analysis resulting in a dilution of 4 to 1, with exception of compounds 1,1,1-Trichloroethane, Trichloroethene, and Tetrachloroethene which were reported from the original undiluted analysis for sample AMB-1 and compounds 1,1,1-Trichloroethane and Trichloroethene for sample AMB-2. The reporting limit and calibration range were raised accordingly.

Definition of Data Qualifying Flags

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

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit.
UJ- Non-detected compound associated with low bias in the CCV
CN - See case narrative explanation.
C - Estimated concentration due to calculated uptake rate

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

b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

eurofins | Air Toxics

Summary of Detected Compounds
PASSIVE RAD 145 (TD)

Client Sample ID: AMB-1

Lab ID#: 2311294-01A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Cyclohexane	40	0.17	220	0.91
Benzene	80	0.33	500	2.1
Toluene	200	0.77	4700 E	18 E
Tetrachloroethene	5.0	0.023	17	0.079
Ethyl Benzene	40	0.18	610	2.8
m,p-Xylene	80	0.35	2500 E	11 E
o-Xylene	40	0.19	800	3.8
Styrene	40	0.17	140	0.62

Client Sample ID: AMB-2

Lab ID#: 2311294-02A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Cyclohexane	40	0.17	180	0.73
Benzene	80	0.33	440	1.8
Toluene	200	0.77	4700 E	18 E
Tetrachloroethene	20	0.091	21	0.095
Ethyl Benzene	40	0.18	600	2.7
m,p-Xylene	80	0.35	2500 E	11 E
o-Xylene	40	0.19	780	3.6
Styrene	40	0.17	150	0.66

Client Sample ID: AMB-3

Lab ID#: 2311294-03A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Cyclohexane	10	0.042	46	0.19
Benzene	20	0.083	270	1.1
Toluene	50	0.19	240	0.90
Tetrachloroethene	5.0	0.023	14	0.065
Ethyl Benzene	10	0.045	45	0.20
m,p-Xylene	20	0.087	130	0.55
o-Xylene	10	0.047	47	0.22

eurofins | Air Toxics

Summary of Detected Compounds
PASSIVE RAD 145 (TD)

Client Sample ID: AMB-3

Lab ID#: 2311294-03A

Styrene	10	0.042	58	0.25

Client Sample ID: AMB-4

Lab ID#: 2311294-04A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Cyclohexane	10	0.039	19	0.076
Benzene	20	0.078	200	0.79
Trichloroethene	5.0	0.020	10	0.042
Toluene	50	0.18	220	0.81
Tetrachloroethene	5.0	0.021	240	1.0
Ethyl Benzene	10	0.042	38	0.16
m,p-Xylene	20	0.082	110	0.45
o-Xylene	10	0.044	44	0.19
Styrene	10	0.040	48	0.19

eurofins | Air Toxics

Client Sample ID: AMB-1

Lab ID#: 2311294-01A

PASSIVE RAD 145 (TD)

File Name:	**6112808**	**Date of Extraction: NA**	**Date of Collection: 11/13/23 9:20:00 AM**
Dil. Factor:	**4.00**		**Date of Analysis: 11/28/23 01:36 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
1,1,1-Trichloroethane	10	0.058	Not Detected	Not Detected
Cyclohexane	40	0.17	220	0.91
Benzene	80	0.33	500	2.1
Trichloroethene	5.0	0.021	Not Detected	Not Detected
Toluene	200	0.77	4700 E	18 E
Tetrachloroethene	5.0	0.023	17	0.079
Ethyl Benzene	40	0.18	610	2.8
m,p-Xylene	80	0.35	2500 E	11 E
o-Xylene	40	0.19	800	3.8
Styrene	40	0.17	140	0.62

E = Exceeds instrument calibration range.

1,1,1-Trichloroethane, Trichloroethene, and Tetrachloroethene were reported from file #6112117.d analyzed on 11/21/2023 with a dilution factor of 1.00.
Temperature = 77.0F , duration time = 8640 minutes.

Container Type: Radiello 145 (VOC TD)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	106	70-130

eurofins | Air Toxics

Client Sample ID: AMB-2

Lab ID#: 2311294-02A

PASSIVE RAD 145 (TD)

File Name:	**6112809**	**Date of Extraction: NA**	**Date of Collection: 11/13/23 9:25:00 AM**
Dil. Factor:	**4.00**		**Date of Analysis: 11/28/23 02:17 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
1,1,1-Trichloroethane	10	0.058	Not Detected	Not Detected
Cyclohexane	40	0.17	180	0.73
Benzene	80	0.33	440	1.8
Trichloroethene	5.0	0.021	Not Detected	Not Detected
Toluene	200	0.77	4700 E	18 E
Tetrachloroethene	20	0.091	21	0.095
Ethyl Benzene	40	0.18	600	2.7
m,p-Xylene	80	0.35	2500 E	11 E
o-Xylene	40	0.19	780	3.6
Styrene	40	0.17	150	0.66

E = Exceeds instrument calibration range.

1,1,1-Trichloroethane and Trichloroethene were reported from file #6112118.d analyzed on 11/21/2023 with a dilution factor of 1.00.
Temperature = 77.0F , duration time = 8640 minutes.

Container Type: Radiello 145 (VOC TD)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	105	70-130

eurofins | Air Toxics

Client Sample ID: AMB-3

Lab ID#: 2311294-03A

PASSIVE RAD 145 (TD)

File Name:	**6112810**	**Date of Extraction: NA**	**Date of Collection: 11/13/23 10:05:00 A**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/23 02:50 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
1,1,1-Trichloroethane	10	0.058	Not Detected	Not Detected
Cyclohexane	10	0.042	46	0.19
Benzene	20	0.083	270	1.1
Trichloroethene	5.0	0.021	Not Detected	Not Detected
Toluene	50	0.19	240	0.90
Tetrachloroethene	5.0	0.023	14	0.065
Ethyl Benzene	10	0.045	45	0.20
m,p-Xylene	20	0.087	130	0.55
o-Xylene	10	0.047	47	0.22
Styrene	10	0.042	58	0.25

Temperature = 77.0F , duration time = 8675 minutes.

Container Type: Radiello 145 (VOC TD)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	99	70-130

eurofins | Air Toxics

Client Sample ID: AMB-4

Lab ID#: 2311294-04A

PASSIVE RAD 145 (TD)

File Name:	**6112811**	**Date of Extraction: NA**	**Date of Collection: 11/13/23 10:10:00 A**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/23 03:24 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
1,1,1-Trichloroethane	10	0.054	Not Detected	Not Detected
Cyclohexane	10	0.039	19	0.076
Benzene	20	0.078	200	0.79
Trichloroethene	5.0	0.020	10	0.042
Toluene	50	0.18	220	0.81
Tetrachloroethene	5.0	0.021	240	1.0
Ethyl Benzene	10	0.042	38	0.16
m,p-Xylene	20	0.082	110	0.45
o-Xylene	10	0.044	44	0.19
Styrene	10	0.040	48	0.19

Temperature = 77.0F , duration time = 9190 minutes.

Container Type: Radiello 145 (VOC TD)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2311294-05A

PASSIVE RAD 145 (TD)

File Name:	**6112105**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**1.00**		**Date of Analysis: 11/21/23 06:39 AM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
1,1,1-Trichloroethane	10	0.054	Not Detected	Not Detected
Cyclohexane	10	0.039	Not Detected	Not Detected
Benzene	20	0.078	Not Detected	Not Detected
Trichloroethene	5.0	0.020	Not Detected	Not Detected
Toluene	50	0.18	Not Detected	Not Detected
Tetrachloroethene	5.0	0.021	Not Detected	Not Detected
Ethyl Benzene	10	0.042	Not Detected	Not Detected
m,p-Xylene	20	0.082	Not Detected	Not Detected
o-Xylene	10	0.044	Not Detected	Not Detected
Styrene	10	0.040	Not Detected	Not Detected

Temperature = 77.0F , duration time = 9190 minutes.

Container Type: Radiello 145 (VOC TD)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2311294-05B

PASSIVE RAD 145 (TD)

File Name:	**6112807**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/23 12:17 PM**

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
1,1,1-Trichloroethane	10	0.054	Not Detected	Not Detected
Cyclohexane	10	0.039	Not Detected	Not Detected
Benzene	20	0.078	Not Detected	Not Detected
Trichloroethene	5.0	0.020	Not Detected	Not Detected
Toluene	50	0.18	Not Detected	Not Detected
Tetrachloroethene	5.0	0.021	Not Detected	Not Detected
Ethyl Benzene	10	0.042	Not Detected	Not Detected
m,p-Xylene	20	0.082	Not Detected	Not Detected
o-Xylene	10	0.044	Not Detected	Not Detected
Styrene	10	0.040	Not Detected	Not Detected

Temperature = 77.0F , duration time = 9190 minutes.

Container Type: Radiello 145 (VOC TD)

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	101	70-130

eurofins | Air Toxics

Client Sample ID: CCV
Lab ID#: 2311294-06A
PASSIVE RAD 145 (TD)

File Name:	**6112102**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**1.00**		**Date of Analysis: 11/21/23 04:54 AM**

Compound	%Recovery
1,1,1-Trichloroethane	104
Cyclohexane	106
Benzene	101
Trichloroethene	100
Toluene	101
Tetrachloroethene	101
Ethyl Benzene	100
m,p-Xylene	100
o-Xylene	98
Styrene	102

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: CCV
Lab ID#: 2311294-06B
PASSIVE RAD 145 (TD)

File Name:	**6112802**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/23 09:02 AM**

Compound	%Recovery
1,1,1-Trichloroethane	110
Cyclohexane	109
Benzene	103
Trichloroethene	102
Toluene	105
Tetrachloroethene	104
Ethyl Benzene	106
m,p-Xylene	107
o-Xylene	107
Styrene	109

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	104	70-130

eurofins | Air Toxics

Client Sample ID: CCV
Lab ID#: 2311294-06C
PASSIVE RAD 145 (TD)

File Name:	**6112804**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**4.00**		**Date of Analysis: 11/28/23 10:31 AM**

Compound	%Recovery
1,1,1-Trichloroethane	118
Cyclohexane	117
Benzene	114
Trichloroethene	106
Toluene	130
Tetrachloroethene	116
Ethyl Benzene	110
m,p-Xylene	106
o-Xylene	108
Styrene	110

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	101	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 2311294-07A

PASSIVE RAD 145 (TD)

File Name:	**6112103**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**1.00**		**Date of Analysis: 11/21/23 05:32 AM**

Compound	%Recovery	Method Limits
1,1,1-Trichloroethane	98	70-130
Cyclohexane	102	70-130
Benzene	96	70-130
Trichloroethene	97	70-130
Toluene	99	70-130
Tetrachloroethene	100	70-130
Ethyl Benzene	96	70-130
m,p-Xylene	98	70-130
o-Xylene	94	70-130
Styrene	95	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Client Sample ID: LCSD
Lab ID#: 2311294-07AA
PASSIVE RAD 145 (TD)

File Name:	**6112104**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**1.00**		**Date of Analysis: 11/21/23 06:05 AM**

Compound	%Recovery	Method Limits
1,1,1-Trichloroethane	101	70-130
Cyclohexane	104	70-130
Benzene	98	70-130
Trichloroethene	95	70-130
Toluene	99	70-130
Tetrachloroethene	101	70-130
Ethyl Benzene	95	70-130
m,p-Xylene	96	70-130
o-Xylene	95	70-130
Styrene	94	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	105	70-130

eurofins | Air Toxics

Client Sample ID: LCS
Lab ID#: 2311294-07B
PASSIVE RAD 145 (TD)

File Name:	**6112805**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/23 11:09 AM**

Compound	%Recovery	Method Limits
1,1,1-Trichloroethane	107	70-130
Cyclohexane	108	70-130
Benzene	99	70-130
Trichloroethene	100	70-130
Toluene	107	70-130
Tetrachloroethene	107	70-130
Ethyl Benzene	105	70-130
m,p-Xylene	106	70-130
o-Xylene	104	70-130
Styrene	109	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	101	70-130

eurofins | Air Toxics

Client Sample ID: LCSD
Lab ID#: 2311294-07BB
PASSIVE RAD 145 (TD)

File Name:	**6112806**	**Date of Extraction: NA**	**Date of Collection: NA**
Dil. Factor:	**1.00**		**Date of Analysis: 11/28/23 11:42 AM**

Compound	%Recovery	Method Limits
1,1,1-Trichloroethane	110	70-130
Cyclohexane	112	70-130
Benzene	106	70-130
Trichloroethene	101	70-130
Toluene	117	70-130
Tetrachloroethene	107	70-130
Ethyl Benzene	104	70-130
m,p-Xylene	107	70-130
o-Xylene	103	70-130
Styrene	106	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Passive Sorbent Chain of Custody

WO#: 2311294

Case Seal #: _____

Company: Apex Companies, LLC Project #: 23005297 P.O.#

Project Manager: Steve Misner Project Name: Johnson Oil

Contact phone/email: steve.misner@apexcos.com Collected by: Chris Weer/Steve Misner

Sample Matrix (check one): Indoor/Outdoor Air | Soil Gas | Workplace Monitoring | Other( )

Reporting Units (circle): ppbv ug/m3 ppmv mg/m3 ug ng

Turn Around Time: [X] Normal [ ] Rush _____ Specify

Lab ID	Sample Identification	Sampler ID	Date of Deployment (mm/dd/yy)	Time of Deployment (hr:min)	Date of Retrieval (mm/dd/yy)	Time of Retrieval (hr:min)	Indoor/Outdoor Air	Soil Gas	Workplace Monitoring	Other	Analysis Requested	Sample Comments:
01A	AMB-1		11/7/2023	920	11/13/23	0920	I				Passive RAD 145 (TD)	
02A	AMB-2		11/7/2023	925	11/13/23	0925	I				Passive RAD 145 (TD)	
03A	AMB-3		11/7/2023	930	11/13/23	1005	O				Passive RAD 145 (TD)	
04A	AMB-4		11/7/2023	1001	11/13/23	1010	I				Passive RAD 145 (TD)	

Relinquished by:	Date	Time	Received by:	Date	Time	Notes to Lab:
Steve Misner / Apex Companies, LLC	11/13/23	1500	EATL	11/14/23	0912	
Relinquished by:	Date	Time	Received by:	Date	Time	

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples.

Lab Use Only

Shipper Name: FED EX Air bill #:

Custody Seals Intact? Yes No (None)

Temperature (°C)

Sample Condition Upon Receipt: (circle) (Good) SDR