

SUBJECT
RACER Pontiac North Campus LNAPL Assessment Update
– MWM32-04 and TW-MD-06

TO
Jennifer Stanhope, USEPA

DATE
Draft Submittal: November 12, 2024
Final Submittal: January 3, 2025

DEPARTMENT
Environment

PROJECT NUMBER
30214041

COPIES TO
Project File
Brendan Mullen, RACER
Dave Favero, RACER

NAME
Tiffany A. Linder
Tiffany.Linder@arcadis.com

INTRODUCTION

On September 11, 2023, during the annual groundwater monitoring event, two on-site monitoring wells (TW-MD-06 and MWM32-04) were observed to contain light non-aqueous phase liquid (LNAPL). Both of these locations were previously not known to contain LNAPL. LNAPL monitoring activities after these findings are summarized in the *RACER Pontiac North Campus LNAPL Assessment - MWM32-04 and TW-MD-06* memo submitted on January 19th, 2024. The United States Environmental Protection Agency (USEPA) provided comments to this memo via email transmittal on February 13, 2024. A response to comments was provided to USEPA on April 4, 2024 via email transmittal and was approved by USEPA on April 25, 2024. Within the response to comments, additional LNAPL gauging and groundwater sampling was recommended and the details of these additional activities are summarized in this memo. Monitoring well and nearby well locations are depicted on **Figure 1A** and **Figure 1B**.

LNAPL GAUGING ACTIVITIES

TW-MD-06 and MWM32-04 were gauged monthly during March, April, and May 2024. Previous gauging data and summary was provided in the *RACER Pontiac North Campus LNAPL Assessment - MWM32-04 and TW-MD-06* memo submitted on January 19th, 2024. A summary of gauging data from September 2023 through May 2024 is provided as **Table 1**. Gauging was completed using an interface probe and depth to water, depth to product, and product thickness were recorded. In addition, monitoring wells TW-MD-05, TW-MD-07, MWW1-02, and MWW1-SEN04 located near TW-MD-06 and monitoring wells MWM32-01, MWM32-05, MWM32-08, MWM32-09, MWM30-01, and MWM30-02 located near MWM32-04 were gauged monthly during March, April, and May 2024 to monitor the lateral extent of LNAPL.

During gauging activities, monitoring well MWM32-04 had LNAPL detected within the well from September 2023 through May 2024. It should be noted that a LNAPL thickness of 5.79 feet was detected in the well during the April 2024 gauging event and LNAPL was bailed and placed into a drum for disposal. The LNAPL drum was disposed of at a licensed waste disposal facility in September 2024. The last recorded thickness in MWM32-04 in May 2024 was 1.39 feet. However, all surrounding monitoring wells to MWM32-04 were gauged for the presence of LNAPL (MWM32-01, MWM32-05, MWM32-08, MWM32-09, MWM30-01, and MWM30-02) and were observed to be free of LNAPL during all gauging events (**Table 1**).

Monitoring well TW-MD-06 was also gauged for the presence of LNAPL which was detected during the September 2023 gauging events. LNAPL was not detected in the well from October through December 2023 and was then again detected during the end of December 2023 through May 2024. The LNAPL thickness in monitoring well TW-MD-06 has ranged from 0.01 feet to 0.48 feet throughout the gauging events completed. All surrounding monitoring wells to TW-MD-06 were gauged for the presence of LNAPL (TW-MD-05, TW-MD-07, MWW1-02, and MWW1-SEN04) were observed to be free of LNAPL during all gauging events (**Table 1**).

Based on the gauging data collected it appears that the LNAPL is restricted to the vicinity of monitoring wells MWM32-04 and TW-MD-06. Therefore, these two monitoring wells will continue to be gauged for the presence of LNAPL on an annual basis during the annual groundwater monitoring event for the Site.

GROUNDWATER SAMPLE COLLECTION

On May 28th and 29th, 2024, groundwater samples were collected from MWM30-01, MWM32-01, and MWM32-09 in the MWM32-04 area and analyzed for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). A sample was attempted to be collected from MWM32-05 but could not be completed due to an insufficient amount of water in the well. MWW1-02 was sampled in the TW-MD-06 area and was analyzed for polychlorinated biphenyls (PCBs), VOCs, and SVOCs. Groundwater samples were collected using low-flow sampling procedures. The procedures are taken from the Low-Stress (or Low-Flow) Purging and Sampling Procedure (USEPA 2017), which is the USEPA Region V standard method for collecting low-stress/low-flow groundwater samples from monitoring wells.

During sampling, purge water was monitored for dissolved oxygen (DO), temperature, specific conductivity, turbidity, oxygen reduction potential (ORP), and pH. These water quality measurements were used to determine groundwater sample stability prior to collection of the groundwater samples. Purge water was containerized in 55-gallon steel drums and properly labeled for offsite disposal by a licensed waste hauler at a future time. All available groundwater sampling logs are provided in **Attachment A**. The groundwater sampling log for MWM32-01 is not included in **Attachment A** due to a field error.

GROUNDWATER SAMPLING RESULTS

Groundwater analytical results were compared to Michigan Department of Environment, Great Lakes, and Energy (EGLE), Part 201, residential, nonresidential, and groundwater surface water interface criteria. There were no exceedances of VOCs or SVOCs at MWM30-01, MWM32-01, and MWM32-09 in the MWM32-04 area, and no exceedances of PCBs, VOCs, or SVOCs at MWW1-02 in the TW-MD-06 area (**Figures 1A and 1B**). A summary of the groundwater analytical results is provided in **Table 2**, and the laboratory analytical report is provided in **Attachment B**.

RECOMMENDATIONS

Based on the gauging and groundwater sampling results, it is proposed that gauging of monitoring wells MWM32-04 and TW-MD-06 be continued on an annual basis as part of the revised *Draft Groundwater Monitoring Plan* submitted for USEPA review on August 29th, 2024 and re-submitted to USEPA on October 10, 2024. Note that it is RACER's understanding that any monitoring of wells related to this evaluation will ultimately be determined as part of USEPA's approval of the site-wide Groundwater Monitoring Plan.

REFERENCES

Arcadis 2024. LNAPL Assessment – MWM32-04 and TW-MD-06, RACER Trust Pontiac North Campus. January 19.

U.S. Environmental Protection Agency (USEPA; Region I). 1996. Low-Stress (or Low-Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells – Revision 4. July 30, 1996; Revised September 19, 2017.

Enclosures:

Figures:

Figure 1A – MWM32-04 Area - LNAPL Investigation Groundwater Analytical Results

Figure 1B – TW-MD-06 Area - LNAPL Investigation Groundwater Analytical Results

Tables:

Table 1 – LNAPL Gauging and Removal Summary

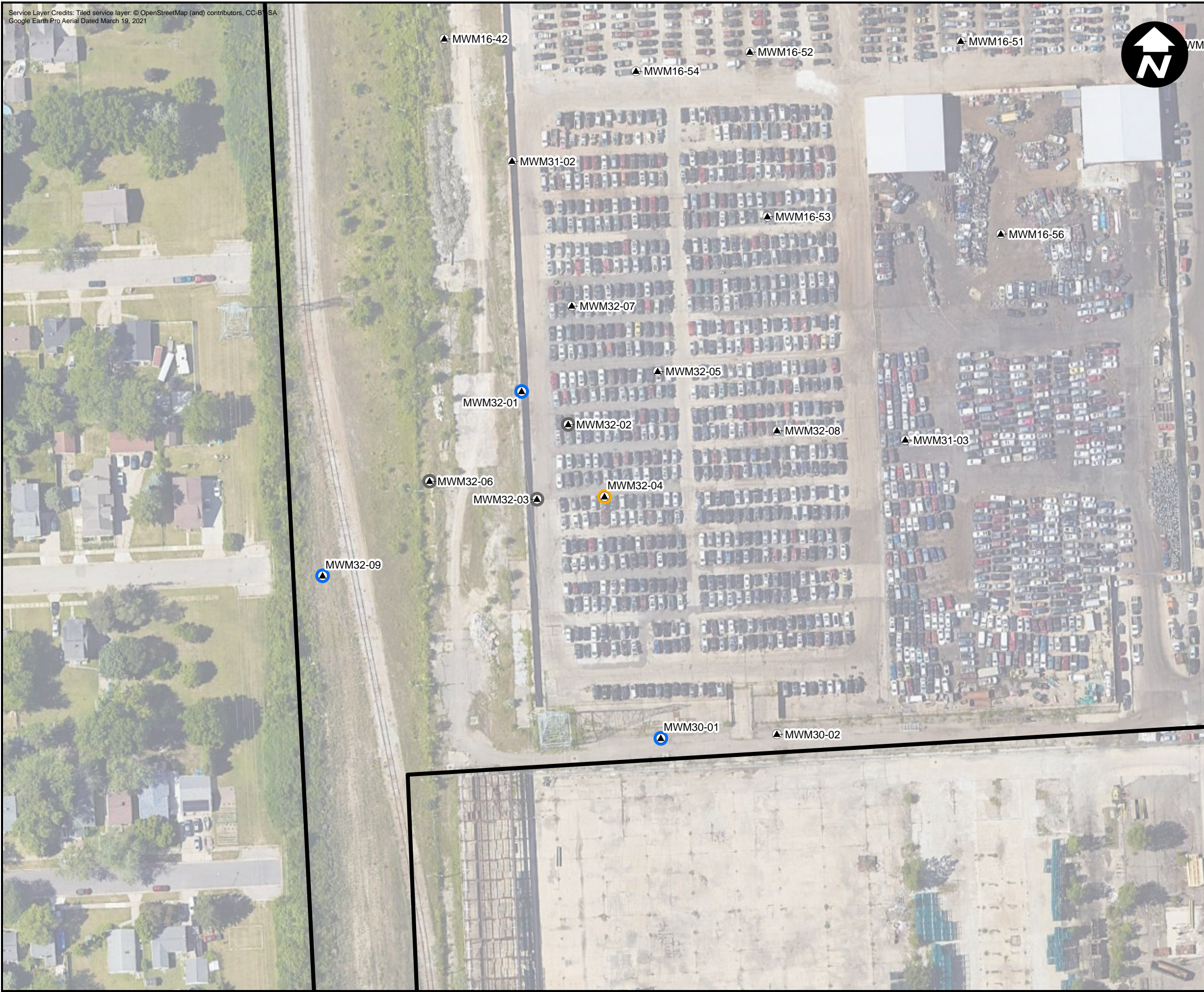
Table 2 – Groundwater Analytical Results

Attachments:

Attachment A – Groundwater Sampling Logs

Attachment B – Laboratory Analytical Report

FIGURES

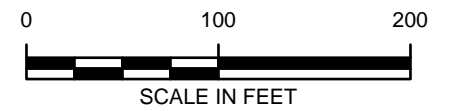


LEGEND

- ▲ EXISTING MONITORING WELL
 - LNAPL PRESENT
 - LOCATION SAMPLED AND SAMPLES ANALYZED FOR SVOCs AND VOCs. NO ANALYTICAL RESULTS EXCEEDED EGLE CLEANUP CRITERIA.
 - DESTROYED OR COULD NOT LOCATE
 - ▭ CURRENT OR FORMER RACER PROPERTY
- LNAPL - LIGHT NON-AQUEOUS PHASE LIQUID
 VOC - VOLATILE ORGANIC COMPOUNDS
 SVOC - SEMI-VOLATILE ORGANIC COMPOUNDS

NOTES:

1. MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE) CLEANUP CRITERIA REQUIREMENTS TABLE 1: GROUNDWATER: RESIDENTIAL, NONRESIDENTIAL, AND GSI, PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS, OCTOBER 12, 2023.
2. A SAMPLE COULD NOT BE COLLECTED FROM MWM32-05 AS PLANNED DUE TO AN INSUFFICIENT AMOUNT OF WATER IN THE WELL.



RACER TRUST
 PONTIAC NORTH CAMPUS
 PONTIAC, MICHIGAN

**MWM32-04 AREA LNAPL INVESTIGATION
 GROUNDWATER ANALYTICAL RESULTS**



Service Layer Credits: Tiled service layer. © OpenStreetMap (and) contributors, CC-BY-SA Google Earth Pro Aerial Dated March 19, 2021

CITY: NOVI DIV: ENV DB: TRY PIC: S: INSALACO PM: T: LINDER TM: L: CRISP TR: PROJECT NUMBER: 30214041.0005 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl D:\GIS\Project Files\MotorsLiquidationCompany\PontiacNorthCampusDocuments\Former_Fiero_Property\SteinInvestigation_2023\MonitoringPlan_2024.aprx Layout: LNAPL_PresentGW_1B PLOTTED: 11/8/2024 11:15 AM BY: TYarborough

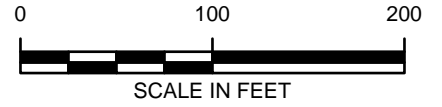


LEGEND

- ▲ EXISTING MONITORING WELL
 - LNAPL PRESENT
 - LOCATION SAMPLED AND SAMPLES ANALYZED FOR SVOCs, VOCs, AND PCBs. NO ANALYTICAL RESULTS EXCEEDED EGLE CLEANUP CRITERIA.
 - ▭ CURRENT OR FORMER RACER PROPERTY
- LNAPL - LIGHT NON-AQUEOUS PHASE LIQUID
 PCB - POLYCHLORINATED BIPHENYL
 VOC - VOLATILE ORGANIC COMPOUNDS
 SVOC - SEMI-VOLATILE ORGANIC COMPOUNDS

NOTES:

1. MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE) CLEANUP CRITERIA REQUIREMENTS TABLE 1: GROUNDWATER: RESIDENTIAL, NONRESIDENTIAL, AND GSI, PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS, OCTOBER 12, 2023.



RACER TRUST
 PONTIAC NORTH CAMPUS
 PONTIAC, MICHIGAN

**TW-MD-06 AREA LNAPL INVESTIGATION
 GROUNDWATER ANALYTICAL RESULTS**

TABLES

Table 1
Groundwater and LNAPL Gauging Summary
LNAPL Assessment Update Memo
RACER Trust Pontiac North Campus



Well	Date	Time	Depth to Water (ft)	Well Depth (ft)	Depth to LNAPL (ft)	LNAPL Thickness (ft)	PID (ppm)	Remarks
MWM30-01	3/11/2024	14:51	23.45	34.70	--	--	0.0	
MWM30-01	4/8/2024	13:47	23.41	34.60	--	--	0.0	
MWM30-01	5/8/2024	16:15	23.42	34.74	--	--	0.0	
MWM30-01	5/29/2024	12:54	23.49	34.27	--	--	0.0	GWS Event
MWM30-02	3/11/2024	14:58	20.33	32.50	--	--	0.0	
MWM30-02	4/8/2024	13:56	20.26	32.33	--	--	0.0	
MWM30-02	5/8/2024	16:12	19.77	32.39	--	--	0.0	
MWM32-01	3/11/2024	14:39	26.96	35.10	--	--	0.0	
MWM32-01	4/8/2024	13:36	26.91	35.15	--	--	0.0	
MWM32-01	5/8/2024	16:22	26.85	35.35	--	--	0.0	
MWM32-01	5/29/2024	15:20	26.90	35.16	--	--	0.0	GWS Event
MWM32-04	9/11/2023	15:19	29.95	--	26.97	2.98	0.0	
MWM32-04	9/29/2023	12:40	30.16	--	27.02	3.14	0.1	
MWM32-04	10/6/2023	12:57	30.36	--	26.98	3.38	0.1	
MWM32-04	10/10/2023	10:27	29.21	--	27.12	2.09	0.0	
MWM32-04	10/20/2023	10:57	29.22	--	27.06	2.16	0.0	
MWM32-04	10/26/2023	14:07	28.41	--	27.19	1.22	0.0	
MWM32-04	11/2/2023	14:43	28.08	--	27.28	0.80	0.0	
MWM32-04	11/9/2023	11:48	27.51	--	27.12	0.39	0.0	
MWM32-04	11/16/2023	10:14	27.62	--	27.31	0.31	0.3	
MWM32-04	11/30/2023	11:11	28.25	--	27.35	0.90	0.1	
MWM32-04	12/7/2023	14:45	28.11	--	27.35	0.76	0.0	
MWM32-04	12/14/2023	11:52	28.09	--	27.51	0.58	0.0	
MWM32-04	12/21/2023	9:59	28.19	--	27.62	0.57	0.0	
MWM32-04	12/29/2023	11:28	28.22	--	27.52	0.70	0.4	
MWM32-04	1/4/2024	11:42	28.64	--	27.80	0.84	0.1	
MWM32-04	3/11/2024	15:14	27.13	--	27.90	0.77	0.1	
MWM32-04	4/8/2024	14:28	22.04	--	27.83	5.79	0.0	Due to thickness of LNAPL it was bailed and containerized in drum onsite for future disposal
MWM32-04	5/8/2024	15:39	28.03	--	27.07	0.96	0.0	
MWM32-04	5/29/2024	17:14	28.51	--	27.12	1.39	1.8	GWS Event
MWM32-05	11/9/2023	11:29	22.11	24.88	--	--	0.0	
MWM32-05	3/11/2024	15:37	22.23	24.70	--	--	0.0	
MWM32-05	4/8/2024	14:13	22.49	24.57	--	--	0.0	
MWM32-05	5/8/2024	15:58	21.88	24.66	--	--	0.0	
MWM32-05	5/29/2024	09:20	21.83	24.56	--	--	0.0	GWS Event
MWM32-08	11/9/2023	10:41	22.15	33.38	--	--	0.0	
MWM32-08	3/11/2024	15:47	21.92	33.10	--	--	0.0	
MWM32-08	4/8/2024	14:18	22.18	32.92	--	--	0.0	
MWM32-08	5/8/2024	15:52	21.59	33.10	--	--	0.0	
MWM32-09	3/11/2024	16:17	22.64	25.90	--	--	0.0	
MWM32-09	4/8/2024	15:04	22.99	25.83	--	--	0.0	
MWM32-09	5/8/2024	16:55	22.58	25.90	--	--	0.0	
MWM32-09	5/29/2024	10:32	22.80	26.20	--	--	0.0	GWS Event
MWW01-SEN04	10/6/2023	10:13	28.34	37.90	--	--	0.0	
MWW01-SEN04	10/10/2023	9:04	28.31	37.91	--	--	0.0	
MWW01-SEN04	10/20/2023	9:32	28.16	37.92	--	--	0.0	
MWW01-SEN04	10/26/2023	14:50	28.28	38.25	--	--	0.0	
MWW01-SEN04	11/2/2023	15:29	28.32	38.38	--	--	0.0	
MWW01-SEN04	11/9/2023	9:13	28.32	38.28	--	--	0.0	
MWW01-SEN04	11/16/2023	9:22	28.36	37.97	--	--	0.0	
MWW01-SEN04	11/30/2023	9:42	28.51	38.31	--	--	0.0	
MWW01-SEN04	12/7/2023	13:39	28.55	38.01	--	--	0.0	
MWW01-SEN04	12/14/2023	10:50	28.57	38.31	--	--	0.0	
MWW01-SEN04	12/21/2023	9:08	28.64	38.16	--	--	0.0	
MWW01-SEN04	12/29/2023	10:07	28.66	37.87	--	--	0.0	
MWW01-SEN04	1/4/2024	10:38	28.69	37.90	--	--	0.0	
MWW01-SEN04	4/8/2024	12:10	28.49	38.45	--	--	0.0	
MWW01-SEN04	5/8/2024	14:33	28.42	37.98	--	--	0.0	
MWW01-SEN04	3/11/2024	12:40	28.32	37.93	--	--	0.0	
MWW1-02	10/10/2023	9:31	5.20	15.11	--	--	0.0	
MWW1-02	10/20/2023	9:59	5.00	15.10	--	--	0.0	
MWW1-02	10/26/2023	15:06	5.13	15.10	--	--	0.0	

Table 1
 Groundwater and LNAPL Gauging Summary
 LNAPL Assessment Update Memo
 RACER Trust Pontiac North Campus



Well	Date	Time	Depth to Water (ft)	Well Depth (ft)	Depth to LNAPL (ft)	LNAPL Thickness (ft)	PID (ppm)	Remarks
MWW1-02	11/2/2023	15:41	5.16	15.12	--	--	0.0	
MWW1-02	11/9/2023	9:29	5.03	15.06	--	--	0.0	
MWW1-02	11/16/2023	9:36	5.13	15.08	--	--	0.0	
MWW1-02	11/30/2023	9:58	5.14	15.12	--	--	0.0	
MWW1-02	12/7/2023	13:59	5.24	15.11	--	--	0.0	
MWW1-02	12/14/2023	11:04	5.20	15.09	--	--	0.0	
MWW1-02	12/21/2023	9:29	5.22	15.11	--	--	0.0	
MWW1-02	12/29/2023	10:21	5.10	15.09	--	--	0.0	
MWW1-02	1/4/2024	10:51	5.23	15.10	--	--	0.0	
MWW1-02	3/11/2024	12:59	5.13	15.15	--	--	0.0	
MWW1-02	4/8/2024	12:28	5.19	15.07	--	--	0.0	
MWW1-02	5/8/2024	14:50	5.09	15.11	--	--	0.0	
MWW1-02	5/28/2024	16:45	5.07	15.08	--	--	0.0	GWS Event
TW-MD-05	10/6/2023	10:26	5.72	11.29	--	--	0.0	
TW-MD-05	10/10/2023	9:23	5.78	13.33	--	--	0.0	
TW-MD-05	10/20/2023	9:54	5.39	13.40	--	--	0.0	
TW-MD-05	10/26/2023	14:59	5.76	13.35	--	--	0.0	
TW-MD-05	11/2/2023	15:35	5.71	13.34	--	--	0.0	
TW-MD-05	11/9/2023	9:24	5.71	13.34	--	--	0.0	
TW-MD-05	11/16/2023	9:30	5.71	13.34	--	--	0.0	
TW-MD-05	11/30/2023	9:51	5.76	13.34	--	--	0.0	
TW-MD-05	12/7/2023	13:54	5.84	13.37	--	--	0.0	
TW-MD-05	12/14/2023	10:57	5.84	13.36	--	--	0.0	
TW-MD-05	12/21/2023	9:21	5.87	13.32	--	--	0.0	
TW-MD-05	12/29/2023	10:15	5.99	13.32	--	--	0.0	
TW-MD-05	1/4/2024	10:46	5.80	13.35	--	--	0.0	
TW-MD-05	3/11/2024	12:50	5.75	13.78	--	--	0.0	
TW-MD-05	4/8/2024	NR	5.78	13.33	--	--	0.0	
TW-MD-05	5/8/2024	14:42	5.70	13.35	--	--	0.0	
TW-MD-06	9/11/2023	9:49	6.12	--	6.10	0.02	0.0	
TW-MD-06	9/29/2023	11:04	6.68	--	6.20	0.48	0.5	
TW-MD-06	10/6/2023	10:37	6.28	--	6.27	0.01	1.0	
TW-MD-06	10/10/2023	9:34	6.28	--	--	--	0.9	
TW-MD-06	10/20/2023	10:02	5.97	16.70	--	--	0.4	
TW-MD-06	10/26/2023	15:10	6.28	16.87	--	--	0.6	
TW-MD-06	11/2/2023	15:45	6.23	16.89	--	--	0.1	
TW-MD-06	11/9/2023	9:31	6.29	16.87	--	--	0.2	
TW-MD-06	11/16/2023	9:40	6.23	16.84	--	--	0.9	
TW-MD-06	11/30/2023	10:03	6.31	16.87	--	--	0.2	
TW-MD-06	12/7/2023	14:00	6.38	16.69	--	--	0.5	
TW-MD-06	12/14/2023	11:07	6.31	16.84	--	--	0.6	
TW-MD-06	12/21/2023	9:32	6.31	16.87	--	--	0.4	
TW-MD-06	12/29/2023	10:25	6.50	--	6.38	0.12	0.1	
TW-MD-06	1/4/2024	10:54	6.46	--	6.34	0.12	0.7	
TW-MD-06	3/11/2024	13:04	6.22	--	6.26	0.04	0.3	
TW-MD-06	4/8/2024	12:32	6.24	--	6.28	0.04	0.2	
TW-MD-06	5/8/2024	14:54	6.21	--	6.23	0.02	0.0	
TW-MD-06	5/29/2024	17:42	6.27	--	6.24	0.03	7.2	GWS Event
TW-MD-07	10/6/2023	10:30	5.84	14.57	--	--	0.0	
TW-MD-07	10/10/2023	9:26	6.87	14.79	--	--	0.0	
TW-MD-07	10/20/2023	9:56	5.78	14.69	--	--	0.0	
TW-MD-07	10/26/2023	15:01	5.79	14.80	--	--	0.0	
TW-MD-07	11/2/2023	15:40	5.75	14.81	--	--	0.0	
TW-MD-07	11/9/2023	9:27	5.79	14.92	--	--	0.0	
TW-MD-07	11/16/2023	9:32	5.76	14.79	--	--	0.0	
TW-MD-07	11/30/2023	9:55	5.78	14.81	--	--	0.0	
TW-MD-07	12/7/2023	13:57	5.75	14.72	--	--	0.0	
TW-MD-07	12/14/2023	11:01	5.67	14.79	--	--	0.0	
TW-MD-07	12/21/2023	9:25	5.68	14.70	--	--	0.0	
TW-MD-07	12/29/2023	10:18	5.56	14.80	--	--	0.0	
TW-MD-07	1/4/2024	10:49	5.63	14.80	--	--	0.0	
TW-MD-07	3/11/2024	12:55	5.76	14.85	--	--	0.0	
TW-MD-07	4/8/2024	12:21	5.72	14.78	--	--	0.0	
TW-MD-07	5/8/2024	14:47	5.78	14.78	--	--	0.0	

Notes:

- ft - feet
- LNAPL - Light Non-Aqueous Phase Liquid
- - No LNAPL detected
- NR - Not Recorded
- PID - Photoionization Detector

Table 2
Groundwater Analytical Results
RACER Pontiac North Campus
Pontiac, MI



Location ID: Date Collected: Sample Name:	Residential Drinking Water	Nonresidential Drinking Water	Groundwater Surface Water Interface		MWM30-01 5/29/2024 MWM30-01_GW-052924	MWM32-01 5/29/2024 MWM32-01_GW-052924	MWM32-09 5/29/2024 MWM32-09_GW-052924	MWW1-02 5/28/2024 MWW1-02_GW-052824
PCBs								
Aroclor-1016 (PCB-1016)	--	--	--	ug/L	NA	NA	NA	< 0.1
Aroclor-1221 (PCB-1221)	--	--	--	ug/L	NA	NA	NA	< 0.1
Aroclor-1232 (PCB-1232)	--	--	--	ug/L	NA	NA	NA	< 0.1
Aroclor-1242 (PCB-1242)	--	--	--	ug/L	NA	NA	NA	< 0.1
Aroclor-1248 (PCB-1248)	--	--	--	ug/L	NA	NA	NA	< 0.1
Aroclor-1254 (PCB-1254)	--	--	--	ug/L	NA	NA	NA	< 0.1
Aroclor-1260 (PCB-1260)	--	--	--	ug/L	NA	NA	NA	< 0.1
Total PCBs	0.5	0.5	0.2	ug/L	NA	NA	NA	< 0.1
SVOCS								
1,2,4-Trichlorobenzene	70	70	99	ug/L	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	600	600	13	ug/L	< 1	< 1	< 1	< 1
1,2-Diphenylhydrazine	--	--	--	ug/L	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	606	19	28	ug/L	< 1	< 1	< 1	< 1
1,4-Dichlorobenzene	75	75	17	ug/L	< 1	< 1	< 1	< 1
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	--	--	--	ug/L	< 5	< 5	< 5	< 5
2,4,5-Trichlorophenol	730	2,100	--	ug/L	< 5	< 5	< 5	< 5
2,4,6-Trichlorophenol	120	470	5	ug/L	< 4	< 4	< 4	< 4
2,4-Dichlorophenol	73	210	11	ug/L	< 10	< 10	< 10	< 10
2,4-Dimethylphenol	370	1,000	380	ug/L	< 5	< 5	< 5	< 5
2,4-Dinitrophenol	--	--	--	ug/L	< 25	< 25	< 25	< 25
2,4-Dinitrotoluene	7.7	32	--	ug/L	< 5	< 5	< 5	< 5
2,6-Dinitrotoluene	--	--	--	ug/L	< 5	< 5	< 5	< 5
2-Chloronaphthalene	1,800	5,200	--	ug/L	< 5	< 5	< 5	< 5
2-Chlorophenol	45	130	18	ug/L	< 10	< 10	< 10	< 10
2-Methylnaphthalene	260	750	19	ug/L	< 5	< 5	< 5	< 5
2-Methylphenol	--	--	--	ug/L	< 10	< 10	< 10	< 10
2-Nitroaniline	--	--	--	ug/L	< 25	< 25	< 25	< 25
2-Nitrophenol	20	58	--	ug/L	< 5	< 5	< 5	< 5
3&4-Methylphenol	--	--	--	ug/L	< 20	< 20	< 20	< 20
3,3'-Dichlorobenzidine	1.1	4.3	0.3	ug/L	< 5	< 5	< 5	< 5
3-Nitroaniline	--	--	--	ug/L	< 25	< 25	< 25	< 25
4,6-Dinitro-2-methylphenol	20	20	--	ug/L	< 20	< 20	< 20	< 20
4-Bromophenyl phenyl ether	--	--	--	ug/L	< 5	< 5	< 5	< 5
4-Chloro-3-methylphenol	150	120	7.4	ug/L	< 5	< 5	< 5	< 5
4-Chloroaniline	--	--	--	ug/L	< 10	< 10	< 10	< 10
4-Chlorophenyl phenyl ether	--	--	--	ug/L	< 5	< 5	< 5	< 5
4-Nitroaniline	--	--	--	ug/L	< 25	< 25	< 25	< 25
4-Nitrophenol	--	--	--	ug/L	< 25	< 25	< 25	< 25
Acenaphthene	1,300	3,800	38	ug/L	< 5	< 5	< 5	< 5
Acenaphthylene	52	150	--	ug/L	< 5	< 5	< 5	< 5
Anthracene	43	43	--	ug/L	< 5	< 5	< 5	< 5
Benzo(a)anthracene	2.1	8.5	--	ug/L	< 1	< 1	< 1	< 1
Benzo(a)pyrene	5	5	--	ug/L	< 1	< 1	< 1	< 1

Table 2
Groundwater Analytical Results
RACER Pontiac North Campus
Pontiac, MI



Location ID: Date Collected: Sample Name:	Residential Drinking Water	Nonresidential Drinking Water	Groundwater Surface Water Interface		MWM30-01 5/29/2024 MWM30-01_GW-052924	MWM32-01 5/29/2024 MWM32-01_GW-052924	MWM32-09 5/29/2024 MWM32-09_GW-052924	MWW1-02 5/28/2024 MWW1-02_GW-052824
Benzo(b)fluoranthene	1.5	1.5	--	ug/L	< 1	< 1	< 1	< 1
Benzo(g,h,i)perylene	1	1	--	ug/L	< 1	< 1	< 1	< 1
Benzo(k)fluoranthene	1	1	--	ug/L	< 1	< 1	< 1	< 1
bis(2-Chloroethoxy)methane	--	--	--	ug/L	< 5	< 5	< 5	< 5
bis(2-Chloroethyl)ether	2	8.3	1	ug/L	< 5	< 5	< 5	< 5
bis(2-Ethylhexyl)phthalate (DEHP)	6	6	14	ug/L	< 5	< 5	< 5	< 5
Butyl benzylphthalate (BBP)	1,200	2,700	67	ug/L	< 5	< 5	< 5	< 5
Chrysene	1.6	1.6	--	ug/L	< 1	< 1	< 1	< 1
Dibenzo(a,h)anthracene	2	2	--	ug/L	< 2	< 2	< 2	< 2
Dibenzofuran	--	--	4	ug/L	< 4	< 4	< 4	< 4
Diethyl phthalate	5,500	16,000	110	ug/L	< 5	< 5	< 5	< 5
Dimethyl phthalate	73,000	210,000	--	ug/L	< 5	< 5	< 5	< 5
Di-n-butylphthalate (DBP)	880	2,500	9.7	ug/L	< 5	< 5	< 5	< 5
Di-n-octyl phthalate (DnOP)	130	380	--	ug/L	< 5	< 5	< 5	< 5
Fluoranthene	210	210	1.6	ug/L	< 1	< 1	< 1	< 1
Fluorene	880	2,000	12	ug/L	< 5	< 5	< 5	< 5
Hexachlorobenzene	1	1	0.2	ug/L	< 5	< 5	< 5	< 5
Hexachlorobutadiene	15	42	0.053	ug/L	< 10	< 10	< 10	< 10
Hexachlorocyclopentadiene	50	50	--	ug/L	< 5	< 5	< 5	< 5
Hexachloroethane	7.3	21	6.7	ug/L	< 5	< 5	< 5	< 5
Indeno(1,2,3-cd)pyrene	2	2	--	ug/L	< 2	< 2	< 2	< 2
Isophorone	770	3,100	1,300	ug/L	< 5	< 5	< 5	< 5
Naphthalene	520	1,500	11	ug/L	< 5	< 5	< 5	< 5
Nitrobenzene	3.4	9.6	180	ug/L	< 5	< 5	< 5	< 5
N-Nitrosodi-n-propylamine	5	5	--	ug/L	< 5	< 5	< 5	< 5
N-Nitrosodiphenylamine	270	1,100	--	ug/L	< 5	< 5	< 5	< 5
Pentachlorophenol	1	1	--	ug/L	< 5	< 5	< 5	< 5
Phenanthrene	52	150	2	ug/L	< 2	< 2	< 2	< 2
Phenol	4,400	13,000	450	ug/L	< 5	< 5	< 5	< 5
Pyrene	140	140	--	ug/L	< 5	< 5	< 5	< 5
VOCs								
1,1,1,2-Tetrachloroethane	77	320	--	ug/L	< 1	< 1	< 1	< 1
1,1,1-Trichloroethane	200	200	89	ug/L	< 1	< 1	< 1	< 1
1,1,1,2,2-Tetrachloroethane	8.5	35	78	ug/L	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane	5	5	330	ug/L	< 1	< 1	< 1	< 1
1,1-Dichloroethane	880	2,500	740	ug/L	< 1	< 1	< 1	< 1
1,1-Dichloroethene	7	7	130	ug/L	< 1	< 1	< 1	< 1
1,2,3-Trichlorobenzene	--	--	--	ug/L	< 5	< 5	< 5	< 5
1,2,3-Trichloropropane	42	120	--	ug/L	< 1	< 1	< 1	< 1
1,2,3-Trimethylbenzene	--	--	--	ug/L	< 1	< 1	< 1	< 1
1,2,4-Trichlorobenzene	70	70	99	ug/L	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	63	63	17	ug/L	< 1	< 1	< 1	< 1
1,2-Dibromo-3-chloropropane (DBCP)	0.2	0.2	--	ug/L	< 5	< 5	< 5	< 5
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	5.7	ug/L	< 1	< 1	< 1	< 1

Table 2
Groundwater Analytical Results
RACER Pontiac North Campus
Pontiac, MI



Location ID: Date Collected: Sample Name:	Residential Drinking Water	Nonresidential Drinking Water	Groundwater Surface Water Interface		MWM30-01 5/29/2024 MWM30-01_GW-052924	MWM32-01 5/29/2024 MWM32-01_GW-052924	MWM32-09 5/29/2024 MWM32-09_GW-052924	MWW1-02 5/28/2024 MWW1-02_GW-052824
1,2-Dichlorobenzene	600	600	13	ug/L	< 1	< 1	< 1	< 1
1,2-Dichloroethane	5	5	360	ug/L	< 1	< 1	< 1	< 1
1,2-Dichloropropane	5	5	230	ug/L	< 1	< 1	< 1	< 1
1,3,5-Trimethylbenzene	72	72	45	ug/L	< 1	< 1	< 1	< 1
1,3-Dichlorobenzene	6.6	19	28	ug/L	< 1	< 1	< 1	< 1
1,4-Dichlorobenzene	75	75	17	ug/L	< 1	< 1	< 1	< 1
2-Butanone (Methyl ethyl ketone) (MEK)	13,000	38,000	2,200	ug/L	< 25	< 25	< 25	< 25
2-Hexanone	1,000	2,900	--	ug/L	< 50	< 50	< 50	< 50
2-Methylnaphthalene	260	750	19	ug/L	< 5	< 5	< 5	< 5
2-Phenylbutane (sec-Butylbenzene)	80	230	--	ug/L	< 1	< 1	< 1	< 1
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,800	5,200	--	ug/L	< 50	< 50	< 50	< 50
Acetone	730	2,100	1,700	ug/L	< 50	< 50	< 50	< 50
Acrylonitrile	3	11	2	ug/L	< 2	< 2	< 2	< 2
Benzene	5	5	200	ug/L	< 1	< 1	< 1	< 1
Bromobenzene	18	50	--	ug/L	< 1	< 1	< 1	< 1
Bromodichloromethane	80	80	--	ug/L	< 1	< 1	< 1	< 1
Bromoform	80	80	--	ug/L	< 1	< 1	< 1	< 1
Bromomethane (Methyl bromide)	10	29	5	ug/L	< 5	< 5	< 5	< 5
Carbon disulfide	800	2,300	--	ug/L	< 5	< 5	< 5	< 5
Carbon tetrachloride	5	5	38	ug/L	< 1	< 1	< 1	< 1
Chlorobenzene	100	100	25	ug/L	< 1	< 1	< 1	< 1
Chlorobromomethane	--	--	--	ug/L	< 1	< 1	< 1	< 1
Chloroethane	430	1,700	1,100	ug/L	< 5	< 5	< 5	< 5
Chloroform (Trichloromethane)	80	80	350	ug/L	< 1	< 1	< 1	< 1
Chloromethane (Methyl chloride)	260	1,100	--	ug/L	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	70	70	620	ug/L	< 1	< 1	< 1	< 1
cis-1,3-Dichloropropene	--	--	--	ug/L	< 1	< 1	< 1	< 1
Cymene (p-Isopropyltoluene)	--	--	--	ug/L	< 5	< 5	< 5	< 5
Dibromochloromethane	80	80	--	ug/L	< 5	< 5	< 5	< 5
Dibromomethane	80	230	--	ug/L	< 5	< 5	< 5	< 5
Dichlorodifluoromethane (CFC-12)	1,700	4,800	--	ug/L	< 5	< 5	< 5	< 5
Ethyl ether	10	10	--	ug/L	< 10	< 10	< 10	< 10
Ethylbenzene	74	74	18	ug/L	< 1	< 1	< 1	< 1
Hexachloroethane	7.3	21	6.7	ug/L	< 5	< 5	< 5	< 5
Iodomethane	--	--	--	ug/L	< 1	< 1	< 1	< 1
Isopropyl benzene	800	2,300	28	ug/L	< 5	< 5	< 5	< 5
m&p-Xylene	--	--	--	ug/L	< 2	< 2	< 2	< 2
Methyl tert butyl ether (MTBE)	40	40	7,100	ug/L	< 5	< 5	< 5	< 5
Methylene chloride	5	5	1,500	ug/L	< 5	< 5	< 5	< 5
Naphthalene	520	1,500	11	ug/L	< 5	< 5	< 5	< 5
N-Butylbenzene	80	230	--	ug/L	< 1	< 1	< 1	< 1
N-Propylbenzene	80	230	--	ug/L	< 1	< 1	< 1	< 1
o-Xylene	--	--	--	ug/L	< 1	< 1	< 1	< 1
Styrene	100	100	80	ug/L	< 1	< 1	< 1	< 1
tert-Butylbenzene	80	230	--	ug/L	< 1	< 1	< 1	< 1

Table 2
Groundwater Analytical Results
RACER Pontiac North Campus
Pontiac, MI



Location ID: Date Collected: Sample Name:	Residential Drinking Water	Nonresidential Drinking Water	Groundwater Surface Water Interface		MWM30-01 5/29/2024 MWM30-01_GW-052924	MWM32-01 5/29/2024 MWM32-01_GW-052924	MWM32-09 5/29/2024 MWM32-09_GW-052924	MWW1-02 5/28/2024 MWW1-02_GW-052824
Tetrachloroethene	5	5	60	ug/L	< 1	< 1	< 1	< 1
Tetrahydrofuran	95	270	11,000	ug/L	< 90	< 90	< 90	< 90
Toluene	790	790	270	ug/L	< 1	< 1	< 1	< 1
trans-1,2-Dichloroethene	100	100	1,500	ug/L	< 1	< 1	< 1	< 1
trans-1,3-Dichloropropene	--	--	--	ug/L	< 1	< 1	< 1	< 1
trans-1,4-Dichloro-2-butene	--	--	--	ug/L	< 1	< 1	< 1	< 1
Trichloroethene	5	5	200	ug/L	< 1	< 1	< 1	< 1
Trichlorofluoromethane (CFC-11)	2,600	7,300	--	ug/L	< 1	< 1	< 1	< 1
Vinyl chloride	2	2	13	ug/L	< 1	< 1	< 1	< 1

- Notes:**
1. Criteria is from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Part 201 Generic Cleanup Criteria and Screening Levels Table 1 (effective date October 2023).
 2. Semi-volatile organic compounds (SVOCs) analyzed via Method SW8270D.
 3. Volatile organic compounds (VOCs) analyzed via Method SW5030C/8260C.
 4. Polychlorinated biphenyls (PCBs) analyzed via Method E608.3.

-- = no criterion for compound
 < = indicates no result detected and value is under the reporting limit
 ug/L = micrograms per liter
 NA = not applicable

Attachment A

Groundwater Sampling Logs

Groundwater Sampling Form



Project Number	30214041	Well ID	MWM32-09	Date	5/29/2024		
Project Name/Location	RACER Pontiac North Campus 2024		Weather(°F)	63.0 degrees F and Mostly Cloudy. The wind is blowing N/NW at 9.2 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	Casing Diameter (in)	2	Well Casing Material	PVC	
Static Water Level (ft-bmp)	22.80	Total Depth (ft-bmp)	26.2	Water Column (ft)	3.40	Gallons in Well	0.55
Purge Start	10:44	Pump Intake (ft-bmp)	23.75	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	11:54	Volumes Purged	3.64	Sample ID	MWM32-09_GW-052924	Sampled by	Garrett Link
Sample Time	11:40	Gallons Purged	2	Replicate/Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallon Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:51	0	0	140	23.01	0.00	6.81	0.77	33.2	5.29	13.6	124.8	Clear	None
10:56	5	5	140	23.07	0.00	6.81	0.77	8.15	8.1	13.6	122.5	Clear	None
11:01	5	10	140	23.13	0.00	6.83	0.78	4.64	8.45	13.4	121.7	Clear	None
11:06	5	15	140	23.14	0.00	6.84	0.79	3.83	8.19	13.8	121.7	Clear	None
11:11	5	20	140	23.14	0.00	6.74	0.8	3.91	5	14.2	127	Clear	None
11:16	5	25	140	23.14	0.00	6.75	0.79	3.55	7.08	13.8	125.4	Clear	None
11:21	5	30	140	23.14	0.00	6.77	0.76	1.31	7.11	13.5	126.1	Clear	None
11:26	5	35	140	23.14	0.00	6.78	0.79	0.02	7.02	13.8	127.5	Clear	None
11:31	5	40	140	23.14	0.00	6.79	0.79	0.02	7.41	13.9	127.6	Clear	None
11:36	5	45	140	23.14	0.00	6.79	0.79	0.02	7.5	13.9	127.5	Clear	None

Constituent Sampled	Container	Number	Preservative
SVOCs	1L Amber	2	None
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: West of U-pull property.	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30214041	Well ID	MWW1-02	Date	5/28/2024		
Project Name/Location	RACER Pontiac North Campus 2024		Weather(°F)	71.1 degrees F and Mostly Cloudy. The wind is blowing W at 12.8 mph.			
Measuring Pt. Description	Top of Inner Casing	MP Elevation	Casing Diameter (in)	2	Well Casing Material	PVC	
Static Water Level (ft-bmp)	5.07	Total Depth (ft-bmp)	15.07	Water Column (ft)	10.00	Gallons in Well	1.62
Purge Start	16:52	Pump Intake (ft-bmp)	12.5	Purge Method	Low-Flow	Purge Equipment	Peristaltic
Purge End	18:04	Volumes Purged	1.54	Sample ID	MWW1-02_GW-052824	Sampled by	Garrett Link
Sample Time	17:45	Gallons Purged	2.5	Replicate/Code No.	NA	Sample Type	Grab

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallon Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
16:55	0	0	130	5.13	0.00	6.58	2.22	13.6	1.62	14.3	-56.1	Clear	None
17:00	5	5	130	5.14	0.00	6.6	2.22	29.3	0.49	14.5	-65	Clear	None
17:05	5	10	130	5.14	0.00	6.62	2.21	41.2	0.54	14.7	-73.4	Clear	None
17:10	5	15	130	5.14	0.00	6.63	2.12	60.5	0.23	14.8	-75	Clear	None
17:15	5	20	160	5.14	0.00	6.66	1.84	69.9	0.14	14	-63.2	Clear	None
17:20	5	25	160	5.14	0.00	6.69	1.61	18	0.2	14.4	-52.2	Clear	None
17:25	5	30	160	5.24	0.00	6.69	1.57	0.02	0.29	14.6	-55.6	Clear	None
17:30	5	35	160	5.24	0.00	6.7	1.56	0.02	0.25	15	-59.8	Clear	None
17:35	5	40	160	5.24	0.00	6.69	1.59	0.02	0.35	15.2	-61.3	Clear	None
17:40	5	45	160	5.24	0.00	6.69	1.6	0.02	0.37	15.3	-62.6	Clear	None

Constituent Sampled	Container	Number	Preservative
PCBs	1L Amber	2	None
SVOCs	1L Amber	2	None
VOCs	40 mL Glass	3	HCL

Comments: DO stabilized per Arcadis TGI (3 readings below 0.5 mg/L).

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04; 1.5 = 0.09; 2.5 = 0.26; 3.5 = 0.50; 6 = 1.47
 1.25 = 0.06; 2 = 0.16; 3 = 0.37; 4 = 0.65

Well Information

Well Location: <u>USPS property, S</u>	Well Locked at Arrival: <u>no</u>
Condition of Well: <u>Good condition</u>	Well Locked at Departure: <u>no</u>
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>NA</u>

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Location ID:	MWM30-01	Date(s):	2024-05-29	Work Order(s):	N/A
Client:	RACER Trust	Facility:	RACER Pontiac North Campus 2024	Facility Location:	RACER Pontiac North Campus 2024
Weather(°F):	NA	Field Technician:	Garrett Link	NA	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	-	Casing Diameter (in):	2
Static Water Level (ft-bmp):	23.49	Total Depth (ft-bmp):	34.27	Water Column(ft):	10.78
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	29.27	Purge Method:	Low-Flow
Purge Start Time:	13:05	Total Volume Purged (l):		Sample ID:	MWM30-01_GW_052924
Purge End Time:	15:00	Well Volumes Purged (total):		Replicate Type / Replicate ID:	NA / NA
				Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65' inch / NA

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
										Color	Odor
13:12	0	118	mL/min	23.51	6.75	1.03	0.34	16.5	-19.2	Clear	None
13:17	5	118	mL/min	23.51	6.73	1.03	0.2	16.5	-26.6	Clear	None
13:22	10	118	mL/min	23.51	6.73	1.03	0.13	16.7	-29	Clear	None
13:27	15	118	mL/min	23.51	6.72	1.03	0.13	16	-29.1	Clear	None
13:32	20	118	mL/min	23.51	6.73	1.03	0.12	15.4	-30.3	Clear	None
13:37	25	118	mL/min	23.51	6.73	1.02	0.11	16	-30.7	Clear	None
13:42	30	118	mL/min	23.51	6.72	1.03	0.11	16	-30.6	Clear	None
13:47	35	118	mL/min	23.51	6.72	1.03	0.11	16	-30.4	Clear	None
13:52	40	118	mL/min	23.51	6.72	1.03	0.11	16	-29.4	Clear	None
13:57	45	118	mL/min	23.51	6.72	1.03	0.1	16	-28.4	Clear	None
14:02	50	100	mL/min	23.51	6.71	1.04	0.11	16	-28.3	Clear	None
14:07	55	100	mL/min	23.51	6.72	1.04	0.11	15.9	-26.8	Clear	None
14:12	60	100	mL/min	23.5	6.73	1.03	0.12	16.1	-24.9	Clear	None
14:17	65	100	mL/min	23.50	6.73	1.03	0.12	16.1	-22.3	Clear	None
14:22	70	100	mL/min	23.50	6.73	1.04	0.12	16	-20	Clear	None
14:27	75	100	mL/min	23.50	6.73	1.04	0.14	16	-19.7	Clear	None
14:32	80	100	mL/min	23.50	6.73	1.03	0.13	16	-18.6	Clear	None
14:37	85	100	mL/min	23.50	6.73	1.03	0.17	16	-17.4	Clear	None
14:42	90	100	mL/min	23.50	6.74	1.03	0.18	16	-15.2	Clear	None

Constituent Sampled	Container	Number	Preservative
SVOCs	1L Amber	2	None
VOCs	40 mL Glass	3	HCl

Comments: Small bubbles observed in turbidity readings.

Well Information:

Well Labeled Properly: no

Is Well in Good Condition? no

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Attachment B

Laboratory Analytical Report



Analytical Laboratory Report

Report ID: S62617.01(01)
Generated on 06/05/2024

Report to

Attention: Alexis Crisp
Arcadis US, Inc.
28550 Cabot Drive
Suite 500
Novi, MI 48377

Phone: 810-225-1909 FAX:
Email: Alexis.Crisp@arcadis.com

Additional Contacts: Tiffany Linder

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S62617.01-S62617.11
Project: RACER - Pontiac North Campus
Collected Date(s): 05/28/2024 - 05/29/2024
Submitted Date/Time: 05/30/2024 14:15
Sampled by: Garrett Link
P.O. #: 30214041.00005

Table of Contents

- Cover Page (Page 1)
- General Report Notes (Page 2)
- Report Narrative (Page 2)
- Laboratory Accreditations (Page 3)
- Qualifier Descriptions (Page 3)
- Glossary of Abbreviations (Page 3)
- Method Summary (Page 4)
- Sample Summary (Page 5)

Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Starred (*) analytes are not NY NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the

FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.

For a specific list of accredited analytes, please feel free to contact the laboratory or visit <https://www.meritlabs.com/certifications>.

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Accreditations (For Reference Only)

Authority	Accreditation ID
Michigan DEQ	#9956
DOD ELAP & ISO/IEC 17025:2017	#69699 PJLA Testing
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
o	Associated EIS outside of control limits
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
q	Qualifier ion ratio outside of control limits
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



Analytical Laboratory Report

Method Summary

Method	Version
E608.3	EPA Method 608.3 December 2016
N/A	Not Applicable
SW3510C	SW 846 Method 3510C Revision 3 December 1996
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003
SW8270D	SW 846 Method 8270D Revision 4 February 2007



Analytical Laboratory Report

Sample Summary (11 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S62617.01	MW-16-22_GW-052824	Groundwater	05/28/24 14:25
S62617.02	DUP-01_GW-052824	Groundwater	05/28/24 00:01
S62617.03	MWF16-22_GW-052824	Groundwater	05/28/24 16:05
S62617.04	MWF16-22_GW-052824 MS	Groundwater	05/28/24 16:05
S62617.05	MWF16-22_GW-052824 MSD	Groundwater	05/28/24 16:05
S62617.06	MWW1-02_GW-052824	Groundwater	05/28/24 17:45
S62617.07	MWM32-09_GW-052924	Groundwater	05/29/24 11:40
S62617.08	MWM30-01_GW-052924	Groundwater	05/29/24 14:45
S62617.09	MWM32-01_GW-052924	Groundwater	05/29/24 16:45
S62617.10	Trip Blank C1	Water	05/29/24 00:01
S62617.11	Trip Blank C2	Water	05/29/24 00:01



Analytical Laboratory Report

Lab Sample ID: S62617.01

Sample Tag: MW-16-22_GW-052824

Collected Date/Time: 05/28/2024 14:25

Matrix: Groundwater

COC Reference: 159483

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	4.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/24 13:13	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/01/24 08:05, Analyst: ACK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	2	1		ug/L	1	156-60-5	
1,1-Dichloroethane	4	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	22	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	1	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	5	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	1	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	17	1		ug/L	1	79-01-6	B
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	416	1		ug/L	1	127-18-4	E

B-Compound also found in associated method blank

E-Concentration exceeds calibration range



Analytical Laboratory Report

Lab Sample ID: S62617.01 (continued)

Sample Tag: MW-16-22_GW-052824

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/01/24 08:05, Analyst: ACK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 06/03/24 22:40, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	100		ug/L	10	60-29-7	Y
Acetone	Not detected	500		ug/L	10	67-64-1	Y
Methyl iodide	Not detected	10		ug/L	10	74-88-4	Y
Carbon disulfide	Not detected	50		ug/L	10	75-15-0	Y
tert-Methyl butyl ether (MTBE)	Not detected	50		ug/L	10	1634-04-4	Y
Acrylonitrile	Not detected	20		ug/L	10	107-13-1	Y
2-Butanone (MEK)	Not detected	250		ug/L	10	78-93-3	Y
Dichlorodifluoromethane	Not detected	50		ug/L	10	75-71-8	Y
Chloromethane	Not detected	50		ug/L	10	74-87-3	Y
Vinyl chloride	Not detected	10		ug/L	10	75-01-4	Y
Bromomethane	Not detected	50		ug/L	10	74-83-9	Y
Chloroethane	Not detected	50		ug/L	10	75-00-3	Y
Trichlorofluoromethane	Not detected	10		ug/L	10	75-69-4	Y
1,1-Dichloroethene	Not detected	10		ug/L	10	75-35-4	Y
Methylene chloride	Not detected	50		ug/L	10	75-09-2	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S62617.01 (continued)

Sample Tag: MW-16-22_GW-052824

Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 06/03/24 22:40, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,2-Dichloroethene	Not detected	10		ug/L	10	156-60-5	Y
1,1-Dichloroethane	Not detected	10		ug/L	10	75-34-3	Y
cis-1,2-Dichloroethene	20	10		ug/L	10	156-59-2	Y
Tetrahydrofuran*	Not detected	900		ug/L	10	109-99-9	Y
Chloroform	Not detected	10		ug/L	10	67-66-3	Y
Bromochloromethane	Not detected	10		ug/L	10	74-97-5	Y
1,1,1-Trichloroethane	Not detected	10		ug/L	10	71-55-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	500		ug/L	10	108-10-1	Y
2-Hexanone	Not detected	500		ug/L	10	591-78-6	Y
Carbon tetrachloride	Not detected	10		ug/L	10	56-23-5	Y
Benzene	Not detected	10		ug/L	10	71-43-2	Y
1,2-Dichloroethane	Not detected	10		ug/L	10	107-06-2	Y
Trichloroethene	10	10		ug/L	10	79-01-6	Y
1,2-Dichloropropane	Not detected	10		ug/L	10	78-87-5	Y
Bromodichloromethane	Not detected	10		ug/L	10	75-27-4	Y
Dibromomethane	Not detected	50		ug/L	10	74-95-3	Y
cis-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-01-5	Y
Toluene	Not detected	10		ug/L	10	108-88-3	Y
trans-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-02-6	Y
1,1,2-Trichloroethane	Not detected	10		ug/L	10	79-00-5	Y
Tetrachloroethene	300	10		ug/L	10	127-18-4	Y
trans-1,4-Dichloro-2-butene	Not detected	10		ug/L	10	110-57-6	Y
Dibromochloromethane	Not detected	50		ug/L	10	124-48-1	Y
1,2-Dibromoethane	Not detected	10		ug/L	10	106-93-4	Y
Chlorobenzene	Not detected	10		ug/L	10	108-90-7	Y
1,1,1,2-Tetrachloroethane	Not detected	10		ug/L	10	630-20-6	Y
Ethylbenzene	Not detected	10		ug/L	10	100-41-4	Y
p,m-Xylene*	Not detected	20		ug/L	10		Y
o-Xylene	Not detected	10		ug/L	10	95-47-6	Y
Styrene	Not detected	10		ug/L	10	100-42-5	Y
Isopropylbenzene	Not detected	50		ug/L	10	98-82-8	Y
Bromoform	Not detected	10		ug/L	10	75-25-2	Y
1,1,2,2-Tetrachloroethane	Not detected	10		ug/L	10	79-34-5	Y
1,2,3-Trichloropropane	Not detected	10		ug/L	10	96-18-4	Y
n-Propylbenzene	Not detected	10		ug/L	10	103-65-1	Y
Bromobenzene	Not detected	10		ug/L	10	108-86-1	Y
1,3,5-Trimethylbenzene	Not detected	10		ug/L	10	108-67-8	Y
tert-Butylbenzene	Not detected	10		ug/L	10	98-06-6	Y
1,2,4-Trimethylbenzene	Not detected	10		ug/L	10	95-63-6	Y
sec-Butylbenzene	Not detected	10		ug/L	10	135-98-8	Y
p-Isopropyltoluene	Not detected	50		ug/L	10	99-87-6	Y
1,3-Dichlorobenzene	Not detected	10		ug/L	10	541-73-1	Y
1,4-Dichlorobenzene	Not detected	10		ug/L	10	106-46-7	Y
1,2-Dichlorobenzene	Not detected	10		ug/L	10	95-50-1	Y
1,2,3-Trimethylbenzene	Not detected	10		ug/L	10	526-73-8	Y
n-Butylbenzene	Not detected	10		ug/L	10	104-51-8	Y
Hexachloroethane	Not detected	50		ug/L	10	67-72-1	Y
1,2-Dibromo-3-chloropropane	Not detected	50		ug/L	10	96-12-8	Y
1,2,4-Trichlorobenzene	Not detected	50		ug/L	10	120-82-1	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S62617.01 (continued)

Sample Tag: MW-16-22_GW-052824

Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 06/03/24 22:40, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2,3-Trichlorobenzene	Not detected	50		ug/L	10	87-61-6	Y
Naphthalene	Not detected	50		ug/L	10	91-20-3	Y
2-Methylnaphthalene	Not detected	50		ug/L	10	91-57-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S62617.02

Sample Tag: DUP-01_GW-052824

Collected Date/Time: 05/28/2024 00:01

Matrix: Groundwater

COC Reference: 159483

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	4.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/24 13:13	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/01/24 08:29, Analyst: ACK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	2	1		ug/L	1	156-60-5	
1,1-Dichloroethane	4	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	23	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	1	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	5	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	1	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	17	1		ug/L	1	79-01-6	B
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	423	1		ug/L	1	127-18-4	E

B-Compound also found in associated method blank

E-Concentration exceeds calibration range



Analytical Laboratory Report

Lab Sample ID: S62617.02 (continued)

Sample Tag: DUP-01_GW-052824

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/01/24 08:29, Analyst: ACK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 06/03/24 23:03, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	100		ug/L	10	60-29-7	Y
Acetone	Not detected	500		ug/L	10	67-64-1	Y
Methyl iodide	Not detected	10		ug/L	10	74-88-4	Y
Carbon disulfide	Not detected	50		ug/L	10	75-15-0	Y
tert-Methyl butyl ether (MTBE)	Not detected	50		ug/L	10	1634-04-4	Y
Acrylonitrile	Not detected	20		ug/L	10	107-13-1	Y
2-Butanone (MEK)	Not detected	250		ug/L	10	78-93-3	Y
Dichlorodifluoromethane	Not detected	50		ug/L	10	75-71-8	Y
Chloromethane	Not detected	50		ug/L	10	74-87-3	Y
Vinyl chloride	Not detected	10		ug/L	10	75-01-4	Y
Bromomethane	Not detected	50		ug/L	10	74-83-9	Y
Chloroethane	Not detected	50		ug/L	10	75-00-3	Y
Trichlorofluoromethane	Not detected	10		ug/L	10	75-69-4	Y
1,1-Dichloroethene	Not detected	10		ug/L	10	75-35-4	Y
Methylene chloride	Not detected	50		ug/L	10	75-09-2	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S62617.02 (continued)

Sample Tag: DUP-01_GW-052824

Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 06/03/24 23:03, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,2-Dichloroethene	Not detected	10		ug/L	10	156-60-5	Y
1,1-Dichloroethane	Not detected	10		ug/L	10	75-34-3	Y
cis-1,2-Dichloroethene	20	10		ug/L	10	156-59-2	Y
Tetrahydrofuran*	Not detected	900		ug/L	10	109-99-9	Y
Chloroform	Not detected	10		ug/L	10	67-66-3	Y
Bromochloromethane	Not detected	10		ug/L	10	74-97-5	Y
1,1,1-Trichloroethane	Not detected	10		ug/L	10	71-55-6	Y
4-Methyl-2-pentanone (MIBK)	Not detected	500		ug/L	10	108-10-1	Y
2-Hexanone	Not detected	500		ug/L	10	591-78-6	Y
Carbon tetrachloride	Not detected	10		ug/L	10	56-23-5	Y
Benzene	Not detected	10		ug/L	10	71-43-2	Y
1,2-Dichloroethane	Not detected	10		ug/L	10	107-06-2	Y
Trichloroethene	10	10		ug/L	10	79-01-6	Y
1,2-Dichloropropane	Not detected	10		ug/L	10	78-87-5	Y
Bromodichloromethane	Not detected	10		ug/L	10	75-27-4	Y
Dibromomethane	Not detected	50		ug/L	10	74-95-3	Y
cis-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-01-5	Y
Toluene	Not detected	10		ug/L	10	108-88-3	Y
trans-1,3-Dichloropropene	Not detected	10		ug/L	10	10061-02-6	Y
1,1,2-Trichloroethane	Not detected	10		ug/L	10	79-00-5	Y
Tetrachloroethene	300	10		ug/L	10	127-18-4	Y
trans-1,4-Dichloro-2-butene	Not detected	10		ug/L	10	110-57-6	Y
Dibromochloromethane	Not detected	50		ug/L	10	124-48-1	Y
1,2-Dibromoethane	Not detected	10		ug/L	10	106-93-4	Y
Chlorobenzene	Not detected	10		ug/L	10	108-90-7	Y
1,1,1,2-Tetrachloroethane	Not detected	10		ug/L	10	630-20-6	Y
Ethylbenzene	Not detected	10		ug/L	10	100-41-4	Y
p,m-Xylene*	Not detected	20		ug/L	10		Y
o-Xylene	Not detected	10		ug/L	10	95-47-6	Y
Styrene	Not detected	10		ug/L	10	100-42-5	Y
Isopropylbenzene	Not detected	50		ug/L	10	98-82-8	Y
Bromoform	Not detected	10		ug/L	10	75-25-2	Y
1,1,2,2-Tetrachloroethane	Not detected	10		ug/L	10	79-34-5	Y
1,2,3-Trichloropropane	Not detected	10		ug/L	10	96-18-4	Y
n-Propylbenzene	Not detected	10		ug/L	10	103-65-1	Y
Bromobenzene	Not detected	10		ug/L	10	108-86-1	Y
1,3,5-Trimethylbenzene	Not detected	10		ug/L	10	108-67-8	Y
tert-Butylbenzene	Not detected	10		ug/L	10	98-06-6	Y
1,2,4-Trimethylbenzene	Not detected	10		ug/L	10	95-63-6	Y
sec-Butylbenzene	Not detected	10		ug/L	10	135-98-8	Y
p-Isopropyltoluene	Not detected	50		ug/L	10	99-87-6	Y
1,3-Dichlorobenzene	Not detected	10		ug/L	10	541-73-1	Y
1,4-Dichlorobenzene	Not detected	10		ug/L	10	106-46-7	Y
1,2-Dichlorobenzene	Not detected	10		ug/L	10	95-50-1	Y
1,2,3-Trimethylbenzene	Not detected	10		ug/L	10	526-73-8	Y
n-Butylbenzene	Not detected	10		ug/L	10	104-51-8	Y
Hexachloroethane	Not detected	50		ug/L	10	67-72-1	Y
1,2-Dibromo-3-chloropropane	Not detected	50		ug/L	10	96-12-8	Y
1,2,4-Trichlorobenzene	Not detected	50		ug/L	10	120-82-1	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S62617.02 (continued)

Sample Tag: DUP-01_GW-052824

Volatile Organics - DEQ List (Replicate 01), Method: SW5030C/8260C, Run Date: 06/03/24 23:03, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2,3-Trichlorobenzene	Not detected	50		ug/L	10	87-61-6	Y
Naphthalene	Not detected	50		ug/L	10	91-20-3	Y
2-Methylnaphthalene	Not detected	50		ug/L	10	91-57-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S62617.03

Sample Tag: MWF16-22_GW-052824

Collected Date/Time: 05/28/2024 16:05

Matrix: Groundwater

COC Reference: 159483

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	4.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/24 13:13	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 15:00, Analyst: ACK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	5	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	3	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	3	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	84	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S62617.03 (continued)

Sample Tag: MWF16-22_GW-052824

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 15:00, Analyst: ACK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S62617.04

Sample Tag: MWF16-22_GW-052824 MS

Collected Date/Time: 05/28/2024 16:05

Matrix: Groundwater

COC Reference: 159483

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	4.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/24 13:13	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 22:12, Analyst: ACK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	51	10		ug/L	1	60-29-7	1
Acetone	Not detected	50		ug/L	1	67-64-1	1
Methyl iodide	55	1		ug/L	1	74-88-4	1
Carbon disulfide	49	5		ug/L	1	75-15-0	1
tert-Methyl butyl ether (MTBE)	51	5		ug/L	1	1634-04-4	1
Acrylonitrile	47	2		ug/L	1	107-13-1	1
2-Butanone (MEK)	50	25		ug/L	1	78-93-3	1
Dichlorodifluoromethane	41	5		ug/L	1	75-71-8	1
Chloromethane	45	5		ug/L	1	74-87-3	1
Vinyl chloride	47	1		ug/L	1	75-01-4	1
Bromomethane	50	5		ug/L	1	74-83-9	1
Chloroethane	49	5		ug/L	1	75-00-3	1
Trichlorofluoromethane	49	1		ug/L	1	75-69-4	1
1,1-Dichloroethene	48	1		ug/L	1	75-35-4	1
Methylene chloride	50	5		ug/L	1	75-09-2	1
trans-1,2-Dichloroethene	48	1		ug/L	1	156-60-5	1
1,1-Dichloroethane	50	1		ug/L	1	75-34-3	1
cis-1,2-Dichloroethene	56	1		ug/L	1	156-59-2	1
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	1
Chloroform	49	1		ug/L	1	67-66-3	1
Bromochloromethane	55	1		ug/L	1	74-97-5	1
1,1,1-Trichloroethane	52	1		ug/L	1	71-55-6	1
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	1
2-Hexanone	Not detected	50		ug/L	1	591-78-6	1
Carbon tetrachloride	52	1		ug/L	1	56-23-5	1
Benzene	50	1		ug/L	1	71-43-2	1
1,2-Dichloroethane	48	1		ug/L	1	107-06-2	1
Trichloroethene	54	1		ug/L	1	79-01-6	1
1,2-Dichloropropane	48	1		ug/L	1	78-87-5	1
Bromodichloromethane	53	1		ug/L	1	75-27-4	1
Dibromomethane	55	5		ug/L	1	74-95-3	1
cis-1,3-Dichloropropene	51	1		ug/L	1	10061-01-5	1
Toluene	50	1		ug/L	1	108-88-3	1
trans-1,3-Dichloropropene	51	1		ug/L	1	10061-02-6	1
1,1,2-Trichloroethane	53	1		ug/L	1	79-00-5	1
Tetrachloroethene	133	1		ug/L	1	127-18-4	1

1-Spiked at 50 ug/L



Analytical Laboratory Report

Lab Sample ID: S62617.04 (continued)

Sample Tag: MWF16-22_GW-052824 MS

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 22:12, Analyst: ACK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	36	1		ug/L	1	110-57-6	1
Dibromochloromethane	60	5		ug/L	1	124-48-1	1
1,2-Dibromoethane	56	1		ug/L	1	106-93-4	1
Chlorobenzene	55	1		ug/L	1	108-90-7	1
1,1,1,2-Tetrachloroethane	55	1		ug/L	1	630-20-6	1
Ethylbenzene	54	1		ug/L	1	100-41-4	1
p,m-Xylene*	111	2		ug/L	1		1
o-Xylene	53	1		ug/L	1	95-47-6	1
Styrene	53	1		ug/L	1	100-42-5	1
Isopropylbenzene	55	5		ug/L	1	98-82-8	1
Bromoform	59	1		ug/L	1	75-25-2	1
1,1,2,2-Tetrachloroethane	54	1		ug/L	1	79-34-5	1
1,2,3-Trichloropropane	54	1		ug/L	1	96-18-4	1
n-Propylbenzene	53	1		ug/L	1	103-65-1	1
Bromobenzene	56	1		ug/L	1	108-86-1	1
1,3,5-Trimethylbenzene	56	1		ug/L	1	108-67-8	1
tert-Butylbenzene	52	1		ug/L	1	98-06-6	1
1,2,4-Trimethylbenzene	56	1		ug/L	1	95-63-6	1
sec-Butylbenzene	51	1		ug/L	1	135-98-8	1
p-Isopropyltoluene	54	5		ug/L	1	99-87-6	1
1,3-Dichlorobenzene	54	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	54	1		ug/L	1	106-46-7	1
1,2-Dichlorobenzene	55	1		ug/L	1	95-50-1	1
1,2,3-Trimethylbenzene	55	1		ug/L	1	526-73-8	1
n-Butylbenzene	52	1		ug/L	1	104-51-8	1
Hexachloroethane	57	5		ug/L	1	67-72-1	1
1,2-Dibromo-3-chloropropane	54	5		ug/L	1	96-12-8	1
1,2,4-Trichlorobenzene	57	5		ug/L	1	120-82-1	1
1,2,3-Trichlorobenzene	59	5		ug/L	1	87-61-6	1
Naphthalene	56	5		ug/L	1	91-20-3	1
2-Methylnaphthalene	54	5		ug/L	1	91-57-6	1

1-Spiked at 50 ug/L



Analytical Laboratory Report

Lab Sample ID: S62617.05

Sample Tag: MWF16-22_GW-052824 MSD

Collected Date/Time: 05/28/2024 16:05

Matrix: Groundwater

COC Reference: 159483

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	4.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/24 13:13	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 22:36, Analyst: ACK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	47	10		ug/L	1	60-29-7	1
Acetone	Not detected	50		ug/L	1	67-64-1	1
Methyl iodide	52	1		ug/L	1	74-88-4	1
Carbon disulfide	46	5		ug/L	1	75-15-0	1
tert-Methyl butyl ether (MTBE)	48	5		ug/L	1	1634-04-4	1
Acrylonitrile	46	2		ug/L	1	107-13-1	1
2-Butanone (MEK)	50	25		ug/L	1	78-93-3	1
Dichlorodifluoromethane	39	5		ug/L	1	75-71-8	1
Chloromethane	43	5		ug/L	1	74-87-3	1
Vinyl chloride	45	1		ug/L	1	75-01-4	1
Bromomethane	47	5		ug/L	1	74-83-9	1
Chloroethane	47	5		ug/L	1	75-00-3	1
Trichlorofluoromethane	47	1		ug/L	1	75-69-4	1
1,1-Dichloroethene	46	1		ug/L	1	75-35-4	1
Methylene chloride	46	5		ug/L	1	75-09-2	1
trans-1,2-Dichloroethene	45	1		ug/L	1	156-60-5	1
1,1-Dichloroethane	47	1		ug/L	1	75-34-3	1
cis-1,2-Dichloroethene	53	1		ug/L	1	156-59-2	1
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	1
Chloroform	46	1		ug/L	1	67-66-3	1
Bromochloromethane	51	1		ug/L	1	74-97-5	1
1,1,1-Trichloroethane	50	1		ug/L	1	71-55-6	1
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	1
2-Hexanone	Not detected	50		ug/L	1	591-78-6	1
Carbon tetrachloride	52	1		ug/L	1	56-23-5	1
Benzene	48	1		ug/L	1	71-43-2	1
1,2-Dichloroethane	45	1		ug/L	1	107-06-2	1
Trichloroethene	51	1		ug/L	1	79-01-6	1
1,2-Dichloropropane	47	1		ug/L	1	78-87-5	1
Bromodichloromethane	50	1		ug/L	1	75-27-4	1
Dibromomethane	54	5		ug/L	1	74-95-3	1
cis-1,3-Dichloropropene	49	1		ug/L	1	10061-01-5	1
Toluene	48	1		ug/L	1	108-88-3	1
trans-1,3-Dichloropropene	49	1		ug/L	1	10061-02-6	1
1,1,2-Trichloroethane	50	1		ug/L	1	79-00-5	1
Tetrachloroethene	129	1		ug/L	1	127-18-4	1

1-Spiked at 50 ug/L



Analytical Laboratory Report

Lab Sample ID: S62617.05 (continued)

Sample Tag: MWF16-22_GW-052824 MSD

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 22:36, Analyst: ACK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	37	1		ug/L	1	110-57-6	1
Dibromochloromethane	58	5		ug/L	1	124-48-1	1
1,2-Dibromoethane	55	1		ug/L	1	106-93-4	1
Chlorobenzene	55	1		ug/L	1	108-90-7	1
1,1,1,2-Tetrachloroethane	54	1		ug/L	1	630-20-6	1
Ethylbenzene	54	1		ug/L	1	100-41-4	1
p,m-Xylene*	109	2		ug/L	1		1
o-Xylene	53	1		ug/L	1	95-47-6	1
Styrene	52	1		ug/L	1	100-42-5	1
Isopropylbenzene	55	5		ug/L	1	98-82-8	1
Bromoform	59	1		ug/L	1	75-25-2	1
1,1,2,2-Tetrachloroethane	55	1		ug/L	1	79-34-5	1
1,2,3-Trichloropropane	55	1		ug/L	1	96-18-4	1
n-Propylbenzene	53	1		ug/L	1	103-65-1	1
Bromobenzene	55	1		ug/L	1	108-86-1	1
1,3,5-Trimethylbenzene	56	1		ug/L	1	108-67-8	1
tert-Butylbenzene	53	1		ug/L	1	98-06-6	1
1,2,4-Trimethylbenzene	55	1		ug/L	1	95-63-6	1
sec-Butylbenzene	53	1		ug/L	1	135-98-8	1
p-Isopropyltoluene	54	5		ug/L	1	99-87-6	1
1,3-Dichlorobenzene	54	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	55	1		ug/L	1	106-46-7	1
1,2-Dichlorobenzene	55	1		ug/L	1	95-50-1	1
1,2,3-Trimethylbenzene	55	1		ug/L	1	526-73-8	1
n-Butylbenzene	53	1		ug/L	1	104-51-8	1
Hexachloroethane	59	5		ug/L	1	67-72-1	1
1,2-Dibromo-3-chloropropane	55	5		ug/L	1	96-12-8	1
1,2,4-Trichlorobenzene	57	5		ug/L	1	120-82-1	1
1,2,3-Trichlorobenzene	59	5		ug/L	1	87-61-6	1
Naphthalene	59	5		ug/L	1	91-20-3	1
2-Methylnaphthalene	57	5		ug/L	1	91-57-6	1

1-Spiked at 50 ug/L



Analytical Laboratory Report

Lab Sample ID: S62617.06

Sample Tag: MWW1-02_GW-052824

Collected Date/Time: 05/28/2024 17:45

Matrix: Groundwater

COC Reference: 159483

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	4.0	IR
4	1L Amber	None	Yes	4.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/24 13:13	ACK	
BNA Extraction	Completed	SW3510C	06/03/24 12:00	TAW	
Extraction, PCB*	Completed	E608.3	05/31/24 14:00	JWR	

Organics - PCBs/Pesticides

PCB, Method: E608.3, Run Date: 06/03/24 12:31, Analyst: JANB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PCB-1016	Not detected	0.1		ug/L	1	12674-11-2	
PCB-1221	Not detected	0.1		ug/L	1	11104-28-2	
PCB-1232	Not detected	0.1		ug/L	1	11141-16-5	
PCB-1242	Not detected	0.1		ug/L	1	53469-21-9	
PCB-1248	Not detected	0.1		ug/L	1	12672-29-6	
PCB-1254	Not detected	0.1		ug/L	1	11097-69-1	
PCB-1260	Not detected	0.1		ug/L	1	11096-82-5	
PCB, Total*	Not detected	0.1		ug/L	1	1336-36-3	

Organics - Semi-Volatiles

Semi-Volatile Organics - MDEQ, Method: SW8270D, Run Date: 06/03/24 19:55, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acenaphthene	Not detected	5		ug/L	2	83-32-9	
Acenaphthylene	Not detected	5		ug/L	2	208-96-8	
Anthracene	Not detected	5		ug/L	2	120-12-7	
Benzo(a)anthracene	Not detected	1		ug/L	2	56-55-3	
Benzo(b)fluoranthene	Not detected	1		ug/L	2	205-99-2	
Benzo(k)fluoranthene	Not detected	1		ug/L	2	207-08-9	
Benzo(ghi)perylene	Not detected	1		ug/L	2	191-24-2	
Benzo(a)pyrene	Not detected	1		ug/L	2	50-32-8	
bis(2-Chloroethoxy)methane	Not detected	5		ug/L	2	111-91-1	
bis(2-Chloroethyl)ether	Not detected	5		ug/L	2	111-44-4	
bis(2-Chloroisopropyl)ether*	Not detected	5		ug/L	2	108-60-1	
bis(2-Ethylhexyl)phthalate	Not detected	5		ug/L	2	117-81-7	
4-Bromophenyl phenyl ether	Not detected	5		ug/L	2	101-55-3	
Butyl benzyl phthalate	Not detected	5		ug/L	2	85-68-7	
4-Chloroaniline	Not detected	10		ug/L	2	106-47-8	
2-Chloronaphthalene	Not detected	5		ug/L	2	91-58-7	
4-Chloro-3-methylphenol	Not detected	5		ug/L	2	59-50-7	
2-Chlorophenol	Not detected	10		ug/L	2	95-57-8	
4-Chlorophenyl phenyl ether	Not detected	5		ug/L	2	7005-72-3	
Chrysene	Not detected	1		ug/L	2	218-01-9	
3-, 4-Methylphenol (p,m-Cresol)	Not detected	20		ug/L	2	3/4-CRESOL	
2-Methylphenol (o-Cresol)	Not detected	10		ug/L	2	95-48-7	



Analytical Laboratory Report

Lab Sample ID: S62617.06 (continued)

Sample Tag: MWW1-02_GW-052824

Semi-Volatile Organics - MDEQ, Method: SW8270D, Run Date: 06/03/24 19:55, Analyst: PL (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibenzo(ah)anthracene	Not detected	2		ug/L	2	53-70-3	
Dibenzofuran	Not detected	4		ug/L	2	132-64-9	
di-n-Butyl phthalate	Not detected	5		ug/L	2	84-74-2	
1,2-Dichlorobenzene	Not detected	1		ug/L	2	95-50-1	
1,3-Dichlorobenzene	Not detected	1		ug/L	2	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	2	106-46-7	
3,3'-Dichlorobenzidine	Not detected	5		ug/L	2	91-94-1	
2,4-Dichlorophenol	Not detected	10		ug/L	2	120-83-2	
Diethyl phthalate	Not detected	5		ug/L	2	84-66-2	
2,4-Dimethylphenol	Not detected	5		ug/L	2	105-67-9	
Dimethyl phthalate	Not detected	5		ug/L	2	131-11-3	
4,6-Dinitro-2-methylphenol	Not detected	20		ug/L	2	534-52-1	
2,4-Dinitrophenol	Not detected	25		ug/L	2	51-28-5	
2,4-Dinitrotoluene	Not detected	5		ug/L	2	121-14-2	
2,6-Dinitrotoluene	Not detected	5		ug/L	2	606-20-2	
1,2-Diphenylhydrazine*	Not detected	5		ug/L	2	122-66-7	
di-n-Octyl phthalate	Not detected	5		ug/L	2	117-84-0	
Fluoranthene	Not detected	1		ug/L	2	206-44-0	
Fluorene	Not detected	5		ug/L	2	86-73-7	
Hexachlorobenzene	Not detected	5		ug/L	2	118-74-1	
Hexachlorobutadiene	Not detected	10		ug/L	2	87-68-3	
Hexachlorocyclopentadiene*	Not detected	5		ug/L	2	77-47-4	
Hexachloroethane	Not detected	5		ug/L	2	67-72-1	
Indeno(1,2,3-cd)pyrene	Not detected	2		ug/L	2	193-39-5	
Isophorone	Not detected	5		ug/L	2	78-59-1	
2-Methylnaphthalene	Not detected	5		ug/L	2	91-57-6	
Naphthalene	Not detected	5		ug/L	2	91-20-3	
2-Nitroaniline	Not detected	25		ug/L	2	88-74-4	
3-Nitroaniline	Not detected	25		ug/L	2	99-09-2	
4-Nitroaniline	Not detected	25		ug/L	2	100-01-6	
Nitrobenzene	Not detected	5		ug/L	2	98-95-3	
2-Nitrophenol	Not detected	5		ug/L	2	88-75-5	
4-Nitrophenol	Not detected	25		ug/L	2	100-02-7	
N-Nitrosodiphenylamine	Not detected	5		ug/L	2	86-30-6	
N-Nitrosodi-n-propylamine	Not detected	5		ug/L	2	621-64-7	
Pentachlorophenol	Not detected	5		ug/L	2	87-86-5	
Phenanthrene	Not detected	2		ug/L	2	85-01-8	
Phenol	Not detected	5		ug/L	2	108-95-2	
Pyrene	Not detected	5		ug/L	2	129-00-0	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	2	120-82-1	
2,4,5-Trichlorophenol	Not detected	5		ug/L	2	95-95-4	
2,4,6-Trichlorophenol	Not detected	4		ug/L	2	88-06-2	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 15:24, Analyst: ACK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	



Analytical Laboratory Report

Lab Sample ID: S62617.06 (continued)

Sample Tag: MWW1-02_GW-052824

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 15:24, Analyst: ACK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	



Analytical Laboratory Report

Lab Sample ID: S62617.06 (continued)

Sample Tag: MWW1-02_GW-052824

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 15:24, Analyst: ACK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S62617.07

Sample Tag: MWM32-09_GW-052924

Collected Date/Time: 05/29/2024 11:40

Matrix: Groundwater

COC Reference: 159483

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	4.0	IR
2	1L Amber	None	Yes	4.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/24 13:13	ACK	
BNA Extraction	Completed	SW3510C	06/03/24 12:00	TAW	

Organics - Semi-Volatiles

Semi-Volatile Organics - MDEQ, Method: SW8270D, Run Date: 06/03/24 20:26, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acenaphthene	Not detected	5		ug/L	2	83-32-9	
Acenaphthylene	Not detected	5		ug/L	2	208-96-8	
Anthracene	Not detected	5		ug/L	2	120-12-7	
Benzo(a)anthracene	Not detected	1		ug/L	2	56-55-3	
Benzo(b)fluoranthene	Not detected	1		ug/L	2	205-99-2	
Benzo(k)fluoranthene	Not detected	1		ug/L	2	207-08-9	
Benzo(ghi)perylene	Not detected	1		ug/L	2	191-24-2	
Benzo(a)pyrene	Not detected	1		ug/L	2	50-32-8	
bis(2-Chloroethoxy)methane	Not detected	5		ug/L	2	111-91-1	
bis(2-Chloroethyl)ether	Not detected	5		ug/L	2	111-44-4	
bis(2-Chloroisopropyl)ether*	Not detected	5		ug/L	2	108-60-1	
bis(2-Ethylhexyl)phthalate	Not detected	5		ug/L	2	117-81-7	
4-Bromophenyl phenyl ether	Not detected	5		ug/L	2	101-55-3	
Butyl benzyl phthalate	Not detected	5		ug/L	2	85-68-7	
4-Chloroaniline	Not detected	10		ug/L	2	106-47-8	
2-Chloronaphthalene	Not detected	5		ug/L	2	91-58-7	
4-Chloro-3-methylphenol	Not detected	5		ug/L	2	59-50-7	
2-Chlorophenol	Not detected	10		ug/L	2	95-57-8	
4-Chlorophenyl phenyl ether	Not detected	5		ug/L	2	7005-72-3	
Chrysene	Not detected	1		ug/L	2	218-01-9	
3-, 4-Methylphenol (p,m-Cresol)	Not detected	20		ug/L	2	3/4-CRESOL	
2-Methylphenol (o-Cresol)	Not detected	10		ug/L	2	95-48-7	
Dibenzo(ah)anthracene	Not detected	2		ug/L	2	53-70-3	
Dibenzofuran	Not detected	4		ug/L	2	132-64-9	
di-n-Butyl phthalate	Not detected	5		ug/L	2	84-74-2	
1,2-Dichlorobenzene	Not detected	1		ug/L	2	95-50-1	
1,3-Dichlorobenzene	Not detected	1		ug/L	2	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	2	106-46-7	
3,3'-Dichlorobenzidine	Not detected	5		ug/L	2	91-94-1	
2,4-Dichlorophenol	Not detected	10		ug/L	2	120-83-2	
Diethyl phthalate	Not detected	5		ug/L	2	84-66-2	
2,4-Dimethylphenol	Not detected	5		ug/L	2	105-67-9	
Dimethyl phthalate	Not detected	5		ug/L	2	131-11-3	
4,6-Dinitro-2-methylphenol	Not detected	20		ug/L	2	534-52-1	
2,4-Dinitrophenol	Not detected	25		ug/L	2	51-28-5	



Analytical Laboratory Report

Lab Sample ID: S62617.07 (continued)

Sample Tag: MWM32-09_GW-052924

Semi-Volatile Organics - MDEQ, Method: SW8270D, Run Date: 06/03/24 20:26, Analyst: PL (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
2,4-Dinitrotoluene	Not detected	5		ug/L	2	121-14-2	
2,6-Dinitrotoluene	Not detected	5		ug/L	2	606-20-2	
1,2-Diphenylhydrazine*	Not detected	5		ug/L	2	122-66-7	
di-n-Octyl phthalate	Not detected	5		ug/L	2	117-84-0	
Fluoranthene	Not detected	1		ug/L	2	206-44-0	
Fluorene	Not detected	5		ug/L	2	86-73-7	
Hexachlorobenzene	Not detected	5		ug/L	2	118-74-1	
Hexachlorobutadiene	Not detected	10		ug/L	2	87-68-3	
Hexachlorocyclopentadiene*	Not detected	5		ug/L	2	77-47-4	
Hexachloroethane	Not detected	5		ug/L	2	67-72-1	
Indeno(1,2,3-cd)pyrene	Not detected	2		ug/L	2	193-39-5	
Isophorone	Not detected	5		ug/L	2	78-59-1	
2-Methylnaphthalene	Not detected	5		ug/L	2	91-57-6	
Naphthalene	Not detected	5		ug/L	2	91-20-3	
2-Nitroaniline	Not detected	25		ug/L	2	88-74-4	
3-Nitroaniline	Not detected	25		ug/L	2	99-09-2	
4-Nitroaniline	Not detected	25		ug/L	2	100-01-6	
Nitrobenzene	Not detected	5		ug/L	2	98-95-3	
2-Nitrophenol	Not detected	5		ug/L	2	88-75-5	
4-Nitrophenol	Not detected	25		ug/L	2	100-02-7	
N-Nitrosodiphenylamine	Not detected	5		ug/L	2	86-30-6	
N-Nitrosodi-n-propylamine	Not detected	5		ug/L	2	621-64-7	
Pentachlorophenol	Not detected	5		ug/L	2	87-86-5	
Phenanthrene	Not detected	2		ug/L	2	85-01-8	
Phenol	Not detected	5		ug/L	2	108-95-2	
Pyrene	Not detected	5		ug/L	2	129-00-0	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	2	120-82-1	
2,4,5-Trichlorophenol	Not detected	5		ug/L	2	95-95-4	
2,4,6-Trichlorophenol	Not detected	4		ug/L	2	88-06-2	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 15:49, Analyst: ACK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



Analytical Laboratory Report

Lab Sample ID: S62617.07 (continued)

Sample Tag: MWM32-09_GW-052924

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 15:49, Analyst: ACK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S62617.08

Sample Tag: MWM30-01_GW-052924

Collected Date/Time: 05/29/2024 14:45

Matrix: Groundwater

COC Reference: 159483

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	4.0	IR
2	1L Amber	None	Yes	4.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/24 13:13	ACK	
BNA Extraction	Completed	SW3510C	06/03/24 12:00	TAW	

Organics - Semi-Volatiles

Semi-Volatile Organics - MDEQ, Method: SW8270D, Run Date: 06/03/24 20:56, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acenaphthene	Not detected	5		ug/L	2	83-32-9	
Acenaphthylene	Not detected	5		ug/L	2	208-96-8	
Anthracene	Not detected	5		ug/L	2	120-12-7	
Benzo(a)anthracene	Not detected	1		ug/L	2	56-55-3	
Benzo(b)fluoranthene	Not detected	1		ug/L	2	205-99-2	
Benzo(k)fluoranthene	Not detected	1		ug/L	2	207-08-9	
Benzo(ghi)perylene	Not detected	1		ug/L	2	191-24-2	
Benzo(a)pyrene	Not detected	1		ug/L	2	50-32-8	
bis(2-Chloroethoxy)methane	Not detected	5		ug/L	2	111-91-1	
bis(2-Chloroethyl)ether	Not detected	5		ug/L	2	111-44-4	
bis(2-Chloroisopropyl)ether*	Not detected	5		ug/L	2	108-60-1	
bis(2-Ethylhexyl)phthalate	Not detected	5		ug/L	2	117-81-7	
4-Bromophenyl phenyl ether	Not detected	5		ug/L	2	101-55-3	
Butyl benzyl phthalate	Not detected	5		ug/L	2	85-68-7	
4-Chloroaniline	Not detected	10		ug/L	2	106-47-8	
2-Chloronaphthalene	Not detected	5		ug/L	2	91-58-7	
4-Chloro-3-methylphenol	Not detected	5		ug/L	2	59-50-7	
2-Chlorophenol	Not detected	10		ug/L	2	95-57-8	
4-Chlorophenyl phenyl ether	Not detected	5		ug/L	2	7005-72-3	
Chrysene	Not detected	1		ug/L	2	218-01-9	
3-, 4-Methylphenol (p,m-Cresol)	Not detected	20		ug/L	2	3/4-CRESOL	
2-Methylphenol (o-Cresol)	Not detected	10		ug/L	2	95-48-7	
Dibenzo(ah)anthracene	Not detected	2		ug/L	2	53-70-3	
Dibenzofuran	Not detected	4		ug/L	2	132-64-9	
di-n-Butyl phthalate	Not detected	5		ug/L	2	84-74-2	
1,2-Dichlorobenzene	Not detected	1		ug/L	2	95-50-1	
1,3-Dichlorobenzene	Not detected	1		ug/L	2	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	2	106-46-7	
3,3'-Dichlorobenzidine	Not detected	5		ug/L	2	91-94-1	
2,4-Dichlorophenol	Not detected	10		ug/L	2	120-83-2	
Diethyl phthalate	Not detected	5		ug/L	2	84-66-2	
2,4-Dimethylphenol	Not detected	5		ug/L	2	105-67-9	
Dimethyl phthalate	Not detected	5		ug/L	2	131-11-3	
4,6-Dinitro-2-methylphenol	Not detected	20		ug/L	2	534-52-1	
2,4-Dinitrophenol	Not detected	25		ug/L	2	51-28-5	



Analytical Laboratory Report

Lab Sample ID: S62617.08 (continued)

Sample Tag: MWM30-01_GW-052924

Semi-Volatile Organics - MDEQ, Method: SW8270D, Run Date: 06/03/24 20:56, Analyst: PL (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
2,4-Dinitrotoluene	Not detected	5		ug/L	2	121-14-2	
2,6-Dinitrotoluene	Not detected	5		ug/L	2	606-20-2	
1,2-Diphenylhydrazine*	Not detected	5		ug/L	2	122-66-7	
di-n-Octyl phthalate	Not detected	5		ug/L	2	117-84-0	
Fluoranthene	Not detected	1		ug/L	2	206-44-0	
Fluorene	Not detected	5		ug/L	2	86-73-7	
Hexachlorobenzene	Not detected	5		ug/L	2	118-74-1	
Hexachlorobutadiene	Not detected	10		ug/L	2	87-68-3	
Hexachlorocyclopentadiene*	Not detected	5		ug/L	2	77-47-4	
Hexachloroethane	Not detected	5		ug/L	2	67-72-1	
Indeno(1,2,3-cd)pyrene	Not detected	2		ug/L	2	193-39-5	
Isophorone	Not detected	5		ug/L	2	78-59-1	
2-Methylnaphthalene	Not detected	5		ug/L	2	91-57-6	
Naphthalene	Not detected	5		ug/L	2	91-20-3	
2-Nitroaniline	Not detected	25		ug/L	2	88-74-4	
3-Nitroaniline	Not detected	25		ug/L	2	99-09-2	
4-Nitroaniline	Not detected	25		ug/L	2	100-01-6	
Nitrobenzene	Not detected	5		ug/L	2	98-95-3	
2-Nitrophenol	Not detected	5		ug/L	2	88-75-5	
4-Nitrophenol	Not detected	25		ug/L	2	100-02-7	
N-Nitrosodiphenylamine	Not detected	5		ug/L	2	86-30-6	
N-Nitrosodi-n-propylamine	Not detected	5		ug/L	2	621-64-7	
Pentachlorophenol	Not detected	5		ug/L	2	87-86-5	
Phenanthrene	Not detected	2		ug/L	2	85-01-8	
Phenol	Not detected	5		ug/L	2	108-95-2	
Pyrene	Not detected	5		ug/L	2	129-00-0	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	2	120-82-1	
2,4,5-Trichlorophenol	Not detected	5		ug/L	2	95-95-4	
2,4,6-Trichlorophenol	Not detected	4		ug/L	2	88-06-2	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 16:12, Analyst: ACK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



Analytical Laboratory Report

Lab Sample ID: S62617.08 (continued)

Sample Tag: MWM30-01_GW-052924

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/04/24 16:12, Analyst: ACK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S62617.09

Sample Tag: MWM32-01_GW-052924

Collected Date/Time: 05/29/2024 16:45

Matrix: Groundwater

COC Reference: 159483

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40mL Glass	HCL	Yes	4.0	IR
2	1L Amber	None	Yes	4.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/04/24 12:05	ACK	
BNA Extraction	Completed	SW3510C	06/03/24 12:00	TAW	

Organics - Semi-Volatiles

Semi-Volatile Organics - MDEQ, Method: SW8270D, Run Date: 06/03/24 21:27, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acenaphthene	Not detected	5		ug/L	2	83-32-9	
Acenaphthylene	Not detected	5		ug/L	2	208-96-8	
Anthracene	Not detected	5		ug/L	2	120-12-7	
Benzo(a)anthracene	Not detected	1		ug/L	2	56-55-3	
Benzo(b)fluoranthene	Not detected	1		ug/L	2	205-99-2	
Benzo(k)fluoranthene	Not detected	1		ug/L	2	207-08-9	
Benzo(ghi)perylene	Not detected	1		ug/L	2	191-24-2	
Benzo(a)pyrene	Not detected	1		ug/L	2	50-32-8	
bis(2-Chloroethoxy)methane	Not detected	5		ug/L	2	111-91-1	
bis(2-Chloroethyl)ether	Not detected	5		ug/L	2	111-44-4	
bis(2-Chloroisopropyl)ether*	Not detected	5		ug/L	2	108-60-1	
bis(2-Ethylhexyl)phthalate	Not detected	5		ug/L	2	117-81-7	
4-Bromophenyl phenyl ether	Not detected	5		ug/L	2	101-55-3	
Butyl benzyl phthalate	Not detected	5		ug/L	2	85-68-7	
4-Chloroaniline	Not detected	10		ug/L	2	106-47-8	
2-Chloronaphthalene	Not detected	5		ug/L	2	91-58-7	
4-Chloro-3-methylphenol	Not detected	5		ug/L	2	59-50-7	
2-Chlorophenol	Not detected	10		ug/L	2	95-57-8	
4-Chlorophenyl phenyl ether	Not detected	5		ug/L	2	7005-72-3	
Chrysene	Not detected	1		ug/L	2	218-01-9	
3-, 4-Methylphenol (p,m-Cresol)	Not detected	20		ug/L	2	3/4-CRESOL	
2-Methylphenol (o-Cresol)	Not detected	10		ug/L	2	95-48-7	
Dibenzo(ah)anthracene	Not detected	2		ug/L	2	53-70-3	
Dibenzofuran	Not detected	4		ug/L	2	132-64-9	
di-n-Butyl phthalate	Not detected	5		ug/L	2	84-74-2	
1,2-Dichlorobenzene	Not detected	1		ug/L	2	95-50-1	
1,3-Dichlorobenzene	Not detected	1		ug/L	2	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	2	106-46-7	
3,3'-Dichlorobenzidine	Not detected	5		ug/L	2	91-94-1	
2,4-Dichlorophenol	Not detected	10		ug/L	2	120-83-2	
Diethyl phthalate	Not detected	5		ug/L	2	84-66-2	
2,4-Dimethylphenol	Not detected	5		ug/L	2	105-67-9	
Dimethyl phthalate	Not detected	5		ug/L	2	131-11-3	
4,6-Dinitro-2-methylphenol	Not detected	20		ug/L	2	534-52-1	
2,4-Dinitrophenol	Not detected	25		ug/L	2	51-28-5	



Analytical Laboratory Report

Lab Sample ID: S62617.09 (continued)

Sample Tag: MWM32-01_GW-052924

Semi-Volatile Organics - MDEQ, Method: SW8270D, Run Date: 06/03/24 21:27, Analyst: PL (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
2,4-Dinitrotoluene	Not detected	5		ug/L	2	121-14-2	
2,6-Dinitrotoluene	Not detected	5		ug/L	2	606-20-2	
1,2-Diphenylhydrazine*	Not detected	5		ug/L	2	122-66-7	
di-n-Octyl phthalate	Not detected	5		ug/L	2	117-84-0	
Fluoranthene	Not detected	1		ug/L	2	206-44-0	
Fluorene	Not detected	5		ug/L	2	86-73-7	
Hexachlorobenzene	Not detected	5		ug/L	2	118-74-1	
Hexachlorobutadiene	Not detected	10		ug/L	2	87-68-3	
Hexachlorocyclopentadiene*	Not detected	5		ug/L	2	77-47-4	
Hexachloroethane	Not detected	5		ug/L	2	67-72-1	
Indeno(1,2,3-cd)pyrene	Not detected	2		ug/L	2	193-39-5	
Isophorone	Not detected	5		ug/L	2	78-59-1	
2-Methylnaphthalene	Not detected	5		ug/L	2	91-57-6	
Naphthalene	Not detected	5		ug/L	2	91-20-3	
2-Nitroaniline	Not detected	25		ug/L	2	88-74-4	
3-Nitroaniline	Not detected	25		ug/L	2	99-09-2	
4-Nitroaniline	Not detected	25		ug/L	2	100-01-6	
Nitrobenzene	Not detected	5		ug/L	2	98-95-3	
2-Nitrophenol	Not detected	5		ug/L	2	88-75-5	
4-Nitrophenol	Not detected	25		ug/L	2	100-02-7	
N-Nitrosodiphenylamine	Not detected	5		ug/L	2	86-30-6	
N-Nitrosodi-n-propylamine	Not detected	5		ug/L	2	621-64-7	
Pentachlorophenol	Not detected	5		ug/L	2	87-86-5	
Phenanthrene	Not detected	2		ug/L	2	85-01-8	
Phenol	Not detected	5		ug/L	2	108-95-2	
Pyrene	Not detected	5		ug/L	2	129-00-0	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	2	120-82-1	
2,4,5-Trichlorophenol	Not detected	5		ug/L	2	95-95-4	
2,4,6-Trichlorophenol	Not detected	4		ug/L	2	88-06-2	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/03/24 18:20, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



Analytical Laboratory Report

Lab Sample ID: S62617.09 (continued)

Sample Tag: MWM32-01_GW-052924

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 06/03/24 18:20, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S62617.10

Sample Tag: Trip Blank C1

Collected Date/Time: 05/29/2024 00:01

Matrix: Water

COC Reference: 159483

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40mL Glass	HCL	Yes	4.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/24 13:13	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 05/31/24 15:23, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S62617.10 (continued)

Sample Tag: Trip Blank C1

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 05/31/24 15:23, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S62617.11

Sample Tag: Trip Blank C2

Collected Date/Time: 05/29/2024 00:01

Matrix: Water

COC Reference: 159483

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40mL Glass	HCL	Yes	4.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/24 13:13	ACK	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 05/31/24 15:46, Analyst: NDK

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



Analytical Laboratory Report

Lab Sample ID: S62617.11 (continued)

Sample Tag: Trip Blank C2

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 05/31/24 15:46, Analyst: NDK (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

Merit Laboratories Login Checklist

Lab Set ID:S62617

Client:ARCADIS_NOVI (Arcadis US, Inc. - Novi)

Project: RACER - Pontiac North Campus

Submitted:05/30/2024 14:15 Login User: MMC

Attention: Alexis Crisp

Address: Arcadis US, Inc.
28550 Cabot Drive
Suite 500
Novi, MI 48377

Phone: 810-225-1909 FAX:

Email: Alexis.Crisp@arcadis.com

Selection	Description	Note
-----------	-------------	------

Sample Receiving

- | | | |
|-----|--|--|
| 01. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer # IR 4.0 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |

Chain of Custody

- | | | |
|-----|--|--|
| 06. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | COC adequately filled out |
| 07. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | COC signed and relinquished to the lab |
| 08. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Sample tag on bottles match COC |
| 09. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Subcontracting needed? Subcontracted to: |

Preservation

- | | | |
|-----|--|---|
| 10. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Do sample have correct chemical preservation |
| 11. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Completed pH checks on preserved samples? (no VOAs) |
| 12. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Did any samples need to be preserved in the lab? |

Bottle Conditions

- | | | |
|-----|--|---|
| 13. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | All bottles intact |
| 14. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Appropriate analytical bottles are used |
| 15. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Merit bottles used |
| 16. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Sufficient sample volume received |
| 17. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples require laboratory filtration |
| 18. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples submitted within holding time |
| 19. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Do water VOC or TOX bottles contain headspace |

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

