ADDENDUM No. 1

RFP No. 25-16

Ann Arbor Landfill Monitoring and Maintenance Program

Proposals Due: April 8, 2025 by 2:00 P.M. (local time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any) and is appended thereto. **This Addendum includes four hundred and eighty-six (486) pages.**

The Proposer is to acknowledge receipt of this Addendum No. 1, including all attachments in its Proposal by so indicating in the proposal that the addendum has been received. Proposals submitted without acknowledgement of receipt of this addendum may be considered non-conforming.

The following forms provided within the RFP Document should be included in submitted proposal:

- **Attachment B – City of Ann Arbor Non-Discrimination Declaration of Compliance**
- **Attachment C – City of Ann Arbor Living Wage Declaration of Compliance**
- **Attachment D – Vendor Conflict of Interest Disclosure Form of the RFP Document**

Proposals that fail to provide these completed forms listed above upon proposal opening may be rejected as non-responsive and may not be considered for award.

I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the RFP documents which are outlined below are referenced to a page or Section in which they appear conspicuously. Offerors are to take note in its review of the documents and include these changes as they may affect work or details in other areas not specifically referenced here.

Section/Page(s)	Change
Section 5.1; P. 24	Remove: "The Consultant shall also complete a landfill cap inspection annually, independent of the EGLE, to identify any deficiencies." Replace with: "The Consultant shall also complete monthly landfill inspections between March and October, independent of the EGLE, to identify any deficiencies."

Comment: The RFP incorrectly stated that consultant-led landfill inspections are once per year. Landfill inspections occur on a monthly basis between March and October. An inspection template is included in this Addendum as Attachment G.

II. QUESTIONS AND ANSWERS

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the RFP. Respondents are directed to take note in its review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

Question 1: What kind of groundwater model has been used?

Answer 1: For the previous Capture Zone Analysis, a MODFLOW model developed within the Groundwater Vistas software was used.

Question 2: Does the city participate in MiDEAL?

Answer 2: Yes, the City uses MiDEAL for a number of purposes.

Question 3: Can the City provide copies of the most recent Semi-Annual and Annual Ground Water Monitoring Report?

Answer 3: Please see **Attachment A** for the 2024 April and October 2024 semi-annual reports. Note that the semi-annual groundwater reports contain the same locations (with one exception), but the parameters differ slightly.

Question 4: Can the City provide meeting minutes from the most current Regulatory and Public Meetings?

Answer 4: The City has not had the need for a regulatory or public meeting within the last few years. However, the City wishes to retain regulatory and public meetings in the RFP should the need arise.

Question 5: Can the City provide copies of the most recent Semi-Annual and Annual Gas Monitoring Report?

Answer 5: Please see **Attachment B** for the 2024 Quarter 4 (semi-annual event) and Quarter 3 (quarterly event) reports.

Question 6: Can the City provide design specifications on the existing methane extraction system?

Answer 6: Unfortunately, the methane extraction system design specifications have been lost to time. At the end of 2024, the City became responsible for the operations and maintenance of the wellfield and gas flaring system for the first time in almost 30 years. Prior to 2024, the City worked with a third-contractor to collect and sell landfill gas, but due to the age of the landfill and subsequent decrease in methane gas production, it was no longer economically feasible for the contractor. The City has since contracted with a separate vendor to help address the knowledge gap, and to support wellfield monitoring and maintenance.

Question 7: Can the City provide a copy of the most recent annual Greenhouse Gas (GHG) Report?

Answer 7: Yes, please see **Attachment C** for the 2023 reports.

Question 8: Can the City provide a copy of the most recent Quarterly Wastewater Sampling Report?

Answer 8: Yes, please see **Attachment D** for the 2024 Quarter 4 report.

Question 9: Can the City provide a copy of the Current Industrial Use Permit?

Answer 9: This is provided in the RFP package as Attachment I.

Question 10: Can the City (WRRF) provide the name of the laboratory so we can subcontract them and obtain pricing for the proposal?

Answer 10: The laboratory used for the wastewater sampling is Eurofins.

Question 11: Can the City provide details regarding the pilot bioaugmentation project in Bicentennial Park?

Answer 11: The Bioaugmentation Pilot Report is available as **Attachment E**. The attachments to the Bioaugmentation Pilot Report were not included.

Question 12: Can the City provide a copy of the most recent Annual Maintenance Report?

Answer 12: Yes, please see **Attachment F**.

Question 13: Can the City provide the most recent Landfill Inspection Report?

Answer 13: Yes, please see **Attachment G** for the landfill inspection template.

Offerors are responsible for any conclusions that they may draw from the information contained in the Addendum.

List of Attachments

Attachment A: Semi-Annual Groundwater Monitoring Reports
Attachment B: Semi-Annual and Quarterly Gas Monitoring Reports
Attachment C: GHG Reports
Attachment D: Quarterly Wastewater Sampling Report
Attachment E: Bioaugmentation Pilot Report
Attachment F: Annual Maintenance Report
Attachment G: Landfill Inspection Report Template

Attachment A: Semi Annual Groundwater Monitoring Reports (2024)

Groundwater Monitoring Report
First Semi-Annual Event 2024

City of Ann Arbor Landfill
Ann Arbor, Michigan

July 15, 2024

TETRA TECH

Groundwater Monitoring Report
First Semi-Annual Event 2024

City of Ann Arbor Landfill
Ann Arbor, Michigan

Prepared for:

Erin Donnelly
Environmental Services Manager
City of Ann Arbor
301 E. Huron Street
Ann Arbor, Michigan 48104

Prepared by:

Tetra Tech
1136 Oak Valley Drive, Suite 100
Ann Arbor, Michigan 48108

July 15, 2024

Alison Rauss
Senior Scientist

Patti J. McCall
Principal Hydrogeologist

TABLE OF CONTENTS

1. INTRODUCTION....3
2. STATIC GROUNDWATER LEVEL ELEVATIONS....3
3. GROUNDWATER MONITORING WELL SAMPLE COLLECTION....4
4. PURGE WELL SAMPLE COLLECTION....5
5. GROUNDWATER ANALYTICAL RESULTS....5
5.1 Analytical Results – Volatile Organic Compounds....5
5.2 Analytical Results – 1,4-Dioxane....7
6. MAINTENANCE....8
7. SUMMARY....8

TABLES

Table 1 Groundwater Monitoring Program
Table 2 Groundwater Elevations April 1, 2024
Table 3 Historical Groundwater Elevation Summary

FIGURES

Figure 1 Well Location Map
Figure 2 Upper Aquifer Groundwater Elevation Contour Map April 1, 2024
Figure 3 Total VOCs Isoconcentration Map April 2024
Figure 4 1,4-Dioxane Concentration Map April 2024

APPENDICES

Appendix A Groundwater Sampling Record
Appendix B Laboratory Analytical Report – Eurofins
Appendix C Groundwater Database

1. INTRODUCTION

Tetra Tech completed the first semi-annual groundwater sampling event at Ann Arbor Landfill (AALF) located in Ann Arbor, Michigan in April 2024. All groundwater samples were collected and analyzed in accordance with the *Ann Arbor Landfill Revised Hydrogeologic Monitoring Plan* (2015 HMP) dated December 18, 2015 and HMP Amendment letter request to Michigan Department of Environment, Great Lakes & Energy (EGLE) dated June 1, 2018 (2018 HMP Revision Request). Sampling is in accordance with this HMP Revision Request and the addition of four monitoring wells installed in 2020 for 1,4-dioxane monitoring. A summary of the sample locations and analytical parameters analyzed for AALF is provided as **Table 1**.

2. STATIC GROUNDWATER LEVEL ELEVATIONS

Static water levels for the second semi-annual event were measured on April 1, 2024. All groundwater monitoring wells are depicted on **Figure 1**. Static water levels were obtained from 54 locations: 26 groundwater monitoring wells, 22 piezometers, three observation wells and three purge wells. A static water level measurement was obtained from each location with an electronic water level meter accurate to 0.01-foot. The water level meter was thoroughly rinsed with alconox and distilled water following each use to minimize the potential for cross contamination between wells.

The groundwater elevations measured on April 1, 2024 are presented on **Table 2**. A summary of groundwater elevations collected from October 2020 through April 2024 is presented on **Table 3**. Recent groundwater elevations are on average 0.54 feet lower when compared to April 2023, and 1.23 feet lower when compared to April 2022.

Potentiometric contours and apparent horizontal groundwater flow direction for the upper aquifer are presented on **Figure 2**. Review of **Figure 2** indicates that the direction of groundwater flow in the upper aquifer around Phase I and Phase II is influenced by the slurry wall. The influence of the slurry wall is evident by evaluating the pressure head difference between the piezometer wells located on the upgradient and

downgradient sides of the slurry wall. The purpose of the slurry wall is to prevent unimpacted upgradient groundwater from mixing with the landfill groundwater.

Groundwater flow north of Phase II flows immediately to the east and then to the north and northwest. Groundwater north of Phase I flows to the north/northwest. Although groundwater elevations are lower than April 2023, groundwater flow direction is consistent with historical data.

Static water level measurements of the observation and monitoring wells located within the landfill demonstrate a generally flat gradient. Two extraction wells, PW-1R-12 and PW-3R-12, are located within the opening of the slurry wall along the north side of Phase I. These two extraction wells capture the landfill groundwater and groundwater from the impacted area north of Ellsworth Road. The water is discharged to the sanitary sewer at a target combined rate of up to 70 gallons per minute (gpm) per the Industrial User Permit.

3. GROUNDWATER MONITORING WELL SAMPLE COLLECTION

Seven of the AALF monitoring wells have dedicated well wizard micropurge pumps for low-flow sampling. Eleven of the monitoring wells do not have well wizard pumps and were purged with a peristaltic pump using low flow sampling techniques. At all monitoring wells, water was purged until a stabilized water level and stabilized field parameters were achieved. Field parameters, including pH, specific conductance, temperature, oxidation-reduction potential and dissolved oxygen measurements were recorded until the readings stabilized. When stabilized field parameters were achieved, groundwater samples were collected. All field measurements obtained from each monitoring well were recorded on groundwater sampling records, provided as **Appendix A**.

The groundwater samples were placed directly into clean laboratory provided containers. All samples were placed into ice-packed coolers. Upon completion of all sampling activities, a courier from Eurofins delivered the groundwater samples to their

laboratory in Ohio. All samples were handled under the proper chain-of-custody procedures.

4. PURGE WELL SAMPLE COLLECTION

The three purge wells contain ball valves that are connected to the effluent groundwater discharge. These valves allow for diversion of a portion of the effluent groundwater from the sanitary discharge pipe to a port for sample collection.

All purge well samples were placed directly into clean laboratory provided containers. After sampling, the purge well valves were turned off, returning all effluent discharge to the sanitary sewer. All samples were placed into ice-packed coolers. A courier from Eurofins delivered the samples to their laboratory in Ohio. All samples were handled under the proper chain-of-custody procedures.

5. GROUNDWATER ANALYTICAL RESULTS

Laboratory analytical reports and chain-of-custody documentation for groundwater sampling is provided by Eurofins in **Appendix B**. Analytical results have been summarized for each sampling location and are presented in the groundwater database summary in **Appendix C**. Groundwater sampling was completed at eighteen groundwater monitoring wells and three purge wells for this event. Analysis included sampling for volatile organic compounds (VOCs) and 1,4-dioxane in accordance with the 2015 HMP and 2018 HMP Revision Request.

5.1 Analytical Results – Volatile Organic Compounds

Tetra Tech personnel collected groundwater samples from twelve groundwater monitoring wells and three purge wells for VOCs during this event. Groundwater sample analyses were completed using the U.S. Environmental Protection Agency's (USEPA) Method SW846 8260.

Analytical results indicate that VOCs were detected in monitoring wells W-84-92, W-85-92, W-87-92, W-88-92, W-90-92 and W-100-93 and purge wells PW-1R-12, PW-2R-22

and PW-3R-12 (**Figure 3**). The parameters detected at each well location are generally consistent with historical data with a notable change in W-85-92. The majority of the contaminant mass is located along the southern boundary of Southeast Area Park (**Figure 3**).

Trichloroethene (TCE) was detected at 1.7 micrograms per liter (ug/L) in monitoring well W-85-92, for the third consecutive event after remaining below the detection limit since October 2021. TCE in W-85-92 has remained at a lower concentration than the highest TCE concentration detected at this well of 11 ug/L in April 2020 (**Appendix C**). TCE has been detected four times in the last two years.

Concentrations of diethyl ether (W-84-92, W-85-92, W-87-92, PW-1R-12, PW-2R-22 and PW-3R-12), and cis-1,2-DCE and trans-1,2-DCE (W-85-92, W-88-92 and PW-3R-12), were detected above reporting limits during this event and are generally consistent with historical detections.

The following observation are noted for concentrations of vinyl chloride:

- PW-3R-12 had a decrease from 49 ug/L in October 2023 to 39 ug/L in April 2024. This concentration is consistent with historical detections. The low concentration of vinyl chloride in June 2023 was the lowest detected at this location and was likely attributable to the non-pumping state of the purge well during that sampling event.
- W-84-92 did not have a detection for the fourth consecutive sampling event. Low concentrations of vinyl chloride are typically detected in W-84-92.
- W-85-92, W-90-92 and W-100-93 had low detections of vinyl chloride. Low detections are typically detected in these monitoring wells. W-85-92 and W-100-93 were both non-detect in October 2023. W-90-92 was non-detect the previous three sampling events.
- The concentrations detected in W-87-92, W-88-92 and PW-2R-22 are generally consistent with historical detections.

Toluene and acetone, detected in June 2023 at PW-3R-12 and reported in the First Semi-Annual Event 2023 Report, were not detected for the second consecutive sampling event. The acetone is likely a laboratory contaminant. Toluene has never been detected in PW-3R-12 previously and is assumed to have not been a valid detection, however it will continue to be analyzed in the event this is a new contaminant.

Acetone was detected in the field blank at a concentration of 10 ug/L. This parameter was not detected in any other samples this event. It is believed this acetone detection is a laboratory contaminant.

5.2 Analytical Results – 1,4-Dioxane

Eight monitoring wells and three purge wells were sampled for 1,4-dioxane during this event. The analyses were completed using USEPA Method 522. The 1,4-dioxane concentrations for the monitoring wells sampled during the last four events are illustrated on **Figure 4**. The analytical results indicate that 1,4-dioxane was detected at the same locations detected historically and at concentrations consistent with historical data, with the exception of W-48-89 and W-108-20.

The concentration of 1,4-dioxane in W-48-89 increased from a concentration of 80.0 ug/L in October 2023 to a concentration of 120 ug/L in April. The April concentration is the highest concentration to date for this location. Monitoring well W-108-20 had a detection of 0.22 ug/L; the first detection of 1,4-dioxane at this location.

The concentration of 1,4-dioxane detected at W-87-92 remained consistent with the concentration detected in October 2023 at 30 ug/L, this concentration is within the typical range of detections since 1,4-dioxane monitoring began for the well in October 2015.

The concentration of 1,4-dioxane detected at PW-1R-12 increased from 170 ug/L in October 2023 to 240 ug/L in April. This is within its typical range, although elevated

compared to recent concentrations and may be a result of reduced pumping rates at PW-3R-12 this quarter; allowing PW-1R-12 to cover a larger area.

The concentration of 1,4-dioxane detected at PW-2R-22 remained consistent with the concentration detected in October 2023 at 22 ug/L. The concentration of 1,4-dioxane detected at PW-3R-12 increased from 180 ug/L in October 2023 to 220 ug/L in October April 2024, similar to the October 2022 concentration of 179 ug/L. Purge well PW-2R-22 and PW-3R-12 were both inoperable during the first semi-annual event in 2023 and were sampled during a non-pumping state. In both purge wells, the June 2023 concentration is lower than the respective typical concentration range recently and is likely attributable to the non-pumping state of the purge well.

Three monitoring wells (W-48-89, W-68-90 and W-87-92) had detections of 1,4-dioxane above the drinking water criteria of 7.2 ug/L during this event.

6. MAINTENANCE

On December 1, 2023, Tetra Tech personnel observed that the PW-3R-12 manhole had standing water and the cleanout had water flowing from the top. The well was turned off until the discharge line from the cleanout to the sanitary line could be jet rodded to improve the flow rate. On January 11, 2024, Michigan Power Rodding jet rodded the PW-3R-12 discharge line and the well was turned back on and operating.

April 3, 2024, Tetra Tech personnel observed that the PW-3R-12 meter was not turning. The pump could be heard, indicating that the well was recovering groundwater, however the meter was inoperable. The City of Ann Arbor's AquaHawk AMR readings indicate that the meter stopped advancing after March 25, 2024. A replacement meter has been ordered.

7. SUMMARY

The upper aquifer groundwater flow around Phase I and Phase II continues to be influenced by the slurry wall. Groundwater flow around the perimeter of the landfill is

inward toward the slurry wall at each upgradient piezometer, as indicated by the difference in groundwater elevations measured on each side of the slurry wall. North of the landfill, groundwater in the upper aquifer generally flows north to northwest. Groundwater elevations are generally lower when compared to April 2023 likely reflecting a decrease in precipitation amounts.

Concentrations of VOCs at the sampling locations are generally consistent when compared to recent historical data and recent trends, as discussed in Section 5.1. Concentrations of 1,4-dioxane at the sampling locations are generally consistent when compared to recent historical data, with the exception of the detection of 1,4-dioxane in W-48-89 and W-108-20, as discussed in Section 5.2. The recent significant increase in W-48-89 over the last year will be addressed by increasing the pumping rate at PW-2R-22 while evaluating next steps. The monitoring and purge wells are scheduled for sampling in October 2024 and data trends will continue to be evaluated.

TABLES

TABLE 1
Groundwater Monitoring Program
Ann Arbor Landfill
Ann Arbor, Michigan

Monitoring Wells	SWL	Field Parameters	VOCs	1,4-Dioxane
W-14-84	SA			
W-46-89	SA			
W-47-89	SA	SA	SA	SA
W-48-89	SA	SA		SA
W-50-89	SA			
W-51-89	SA			
W-64-90	SA			
W-68-90	SA	SA		SA
W-70-92R	SA			
W-72-90	SA			
W-84-92	SA	SA	SA	
W-85-92	SA	SA	SA	
W-87-92	SA	SA	SA	SA
W-88-92	SA	SA	SA	
W-89-92	SA	SA	SA	
W-90-92	SA	SA	SA	
W-92-92	SA	SA	SA	
W-94-92	SA	SA	SA	
W-96-92	SA	SA	SA	
W-99-93	SA	SA	SA	
W-100-93	SA	SA	SA	
W-101-93	SA			
W-102-93	A[1]	A[1]	A[1]	
W-105-20	SA	SA		SA
W-106-20	SA	SA		SA
W-107-20	SA	SA		SA
W-108-20	SA	SA		SA
PW-1R-12	SA	SA	SA	SA
PW-2R-22	SA	SA	SA	SA
PW-3R-12	SA	SA	SA	SA
OW-31-08	SA			
OW-32-08	SA			
OW-33-08	SA			
P-0U	SA			
P-0D	SA			
P-1U	SA			
P-1D	SA			
P-2U	SA			
P-2D	SA			
P-3U	SA			
P-3D	SA			
P-4U	SA			
P-4DR	SA			
P-5U	SA			
P-5D	SA			
P-6U	SA			
P-6D	SA			
P-7UR-05	SA			
P-7D	SA			
P-8U	SA			
P-8D	SA			
P-9U	SA			
P-9D	SA			
P-10U	SA			
P-10D	SA			
Totals :	**SWL**	**Field Parameters**	**VOCs**	**1,4-Dioxane**
Semi Annually	**54**	**21**	**15**	**11**
Every 5 Years	**55**	**22**	**16**	**11**

SA = Semi-annual event: April and October

A[1] = Monitoring well W-102-93 will be sampled annually in April every five years for VOCs. The next samling event is April 2025.

Monitoring wells W-105-20, W-106-20, W-107-20 and W-108-20 were installed and surveyed in 2020.

PW-2R-01 was replaced by PW-2R-22 in December 2022.

TABLE 2
Groundwater Elevations
April 1, 2024
Ann Arbor Landfill
Ann Arbor, Michigan

Monitoring Well ID	Top of Casing Elevation (ft amsl) 2018	Static Water Level (ft) 4/1/2024	Groundwater Elevation (ft amsl)
W-14-84	831.93	12.10	819.83
W-46-89	858.52	42.82	815.70
W-47-89	828.29	13.81	814.48
W-48-89	829.91	15.61	814.30
W-50-89	830.85	17.46	813.39
W-51-89	831.37	16.98	814.39
W-64-90	825.98	11.46	814.52
W-68-90	823.79	18.51	805.28
W-70-92R	836.50	21.49	815.01
W-72-90	836.51	19.87	816.64
W-84-92	826.32	11.33	814.99
W-85-92	838.39	22.98	815.41
W-87-92	832.79	17.37	815.42
W-88-92	835.47	20.14	815.33
W-89-92	837.77	22.28	815.49
W-90-92	833.05	17.63	815.42
W-92-92	827.80	12.47	815.33
W-94-92	822.92	8.49	814.43
W-96-92	834.35	5.11	829.24
W-99-93	828.62	13.20	815.42
W-100-93	822.42	7.08	815.34
W-101-93	825.71	12.81	812.90
W-105-20	823.54	18.37	805.17
W-106-20	820.24	6.71	813.53
W-107-20	828.02	22.28	805.74
W-108-20	823.73	9.68	814.05
OW-31-08	831.26	16.80	814.46
OW-32-08	826.48	12.15	814.33
OW-33-08	834.51	19.76	814.75
PW-1R-12	838.16	35.43	802.73
PW-2R-22	825.33	17.06	808.27
PW-3R-12	841.48	28.36	813.12
P-0U	841.43	25.72	815.71
P-0D	845.14	29.73	815.41
P-1U	854.32	38.32	816.00
P-1D	857.85	41.84	816.01
P-2U	854.47	38.54	815.93
P-2D	851.34	35.85	815.49
P-3U	848.32	32.16	816.16
P-3DR	849.13	33.58	815.55
P-4U	837.44	22.17	815.27
P-4DR	839.08	23.89	815.19
P-5U	832.73	17.53	815.20
P-5D	832.75	17.34	815.41
P-6U	832.21	14.26	817.95
P-6D	828.96	13.60	815.36
P-7UR-05	833.02	14.50	818.52
P-7D	837.53	23.00	814.53
P-8U	842.42	22.69	819.73
P-8D	841.77	27.29	814.48
P-9U	854.59	30.72	823.87
P-9D	844.06	28.15	815.91
P-10U	843.04	28.52	814.52
P-10D	839.45	25.01	814.44

Notes:

Top of casing elevation surveyed by City of Ann Arbor Surveyors between 2016 and 2018.

ft. amsl: feet above mean sea level

NA : Not applicable; well was not accessible or the reading was not reliable.

NM: not measured

Monitoring wells W-105-20, W-106-20, W-107-20 and W-108-20 were installed and surveyed in 2020.

PW-2R-01 was replaced with PW-2R-22 in December 2022.

Monitoring wells W-88-92, PW-1R-12, PW-2R-22, P-1U, P-2U and P-2D were surveyed in March 2024.

TABLE 3
Historical Groundwater Elevation Summary
Ann Arbor Landfill
Ann Arbor, Michigan

Monitoring Well ID	Top of Casing Elevation (ft amsl) 2018	October 2020 Groundwater Elevation	April 2021 Groundwater Elevation	October 2021 Groundwater Elevation	April 2022 Groundwater Elevation	October 2022 Groundwater Elevation	April 2023 Groundwater Elevation	October 2023 Groundwater Elevation	April 2024 Groundwater Elevation
W-14-84	831.93	821.14	820.32	820.52	821.46	820.40	820.09	819.78	819.83
W-46-89	858.52	818.15	817.24	817.48	818.06	817.76	816.72	816.12	815.70
W-47-89	828.29	815.22	814.60	814.83	815.44	812.77	815.23	814.37	814.48
W-48-89	829.91	815.30	814.48	814.68	815.31	816.40	815.05	814.27	814.30
W-50-89	830.85	815.22	814.76	814.76	815.39	814.68	815.16	814.32	813.39
W-51-89	831.37	815.18	814.59	814.78	815.41	814.74	815.19	814.33	814.39
W-64-90	825.98	815.15	814.85	814.96	815.59	814.80	815.27	814.44	814.52
W-68-90	823.79	804.69	804.47	804.76	805.44	804.70	805.09	804.86	805.28
W-70-92R	836.50	817.91	816.83	816.95	817.70	817.33	816.19	815.46	815.01
W-72-90	836.51	817.13	816.19	816.74	817.85	816.45	816.70	816.27	816.64
W-84-92	826.32	816.04	814.94	815.25	816.22	815.38	815.56	814.89	814.99
W-85-92	838.39	816.61	815.46	815.95	816.63	815.61	815.93	815.32	815.41
W-87-92	832.79	816.52	815.46	815.90	816.55	815.83	815.98	815.26	815.42
W-88-92	835.47	816.44	815.31	815.76	816.42	815.67	815.76	815.19	815.33
W-89-92	837.77	816.69	815.60	816.06	816.79	815.87	816.04	815.34	815.49
W-90-92	833.05	816.59	815.53	816.06	816.75	815.82	816.02	815.33	815.42
W-92-92	827.80	816.39	815.46	815.99	816.69	815.70	815.96	815.26	815.33
W-94-92	822.92	815.33	814.84	814.93	815.59	814.74	815.22	814.43	814.43
W-96-92	834.35	817.09	816.16	816.11	817.55	816.75	NA	821.94	829.24
W-99-93	828.62	816.58	815.50	816.05	816.70	815.82	815.99	815.32	815.42
W-100-93	822.42	816.42	816.11	815.97	816.67	815.77	815.94	815.23	815.34
W-101-93	825.71	811.45	812.69	808.63	809.04	810.37	811.79	812.38	812.90
W-105-20	823.54	804.43	804.35	804.58	805.39	804.56	808.12	804.77	805.17
W-106-20	820.24	813.41	813.23	813.36	814.33	812.52	812.84	812.88	813.53
W-107-20	828.02	806.80	806.86	806.71	806.57	807.58	806.80	807.27	805.74
W-108-20	823.73	814.71	814.10	814.35	814.99	814.29	814.74	813.93	814.05
OW-31-08	831.26	815.16	814.54	814.85	815.36	814.67	815.25	814.35	814.46
OW-32-08	826.48	815.13	814.56	814.75	815.33	814.74	815.21	814.26	814.33
OW-33-08	834.51	815.75	814.70	815.26	815.83	815.09	815.34	814.64	814.75
PW-1R-12	838.16	808.60	805.98	804.57	813.63	808.63	807.74	808.57	802.73
PW-2R-01	825.96	810.36	814.72	810.45	809.53	--	--	--	NM
PW-2R-22	825.33	--	--	--	--	--	NM	NM	808.27
PW-3R-12	841.48	809.99	807.38	812.41	812.69	810.53	809.27	811.63	813.12
P-0U	841.43	816.88	815.78	816.28	816.98	816.15	812.25	NM	815.71
P-0D	845.14	816.60	815.42	815.90	816.55	815.80	815.90	814.57	815.41
P-1U	854.32	817.96	816.79	817.24	817.82	817.26	816.80	816.21	816.00
P-1D	857.85	816.87	815.51	815.86	816.51	816.03	815.79	815.45	816.01
P-2U	854.47	818.38	817.20	817.54	818.10	817.72	817.27	816.29	815.93
P-2D	851.34	816.96	815.46	815.74	816.36	816.08	815.59	815.47	815.49
P-3U	848.32	818.74	817.51	817.85	818.45	818.13	817.13	816.51	816.16
P-3DR	849.13	816.81	815.57	815.75	816.42	816.11	815.71	815.54	815.55
P-4U	837.44	818.09	816.02	817.15	817.87	817.49	816.47	815.72	815.27
P-4DR	839.08	816.51	815.32	815.44	816.11	815.80	815.78	815.23	815.19
P-5U	832.73	817.99	816.95	817.07	821.19	817.41	816.36	815.64	815.20
P-5D	832.75	816.71	815.52	815.70	816.39	816.05	815.61	815.44	815.41
P-6U	832.21	819.51	818.27	819.05	819.73	815.76	818.55	817.93	817.95
P-6D	828.96	816.66	815.51	815.69	816.37	816.00	815.64	815.40	815.36
P-7UR-05	833.02	819.76	819.07	819.38	820.08	818.79	819.19	818.31	818.52
P-7D	837.53	815.27	815.13	815.22	815.55	814.80	815.30	814.44	814.53
P-8U	842.42	820.88	819.69	820.56	821.28	819.86	820.43	819.25	819.73
P-8D	841.77	815.26	814.61	814.90	815.45	814.79	815.27	814.41	814.48
P-9U	854.59	823.98	823.42	823.77	824.77	823.70	823.82	823.28	823.87
P-9D	844.06	816.47	815.75	816.28	817.04	815.98	816.23	815.79	815.91
P-10U	843.04	815.27	814.66	814.93	815.49	814.84	815.33	814.44	814.52
P-10D	839.45	815.19	814.57	814.84	815.42	814.75	815.27	814.40	814.44

Notes:
1. Data from the most current eight quarters is represented on this table.
2. All wells were surveyed by City of Ann Arbor Surveyors between 2016 and 2018, except wells W-105-20, W-106-20, W-107-20 and W-108-20, which were installed and surveyed in 2020. Beginning with the October 2018 event these surveyed elevations were used to calculate groundwater elevations. Monitoring wells W-88-92, PW-1R-12, PW-2R-22, P-1U, P-2U and P-2D were surveyed in March 2024 and these surveyed elevations were used to calculate groundwater elevations beginning in April 2024.
3. NM = not measured
4. "-" = Monitoring well did not exist or was not accessible.
5. PW-2R-01 was replaced with PW-2R-22 in December 2022.
6. P-0U was covered by a soil pile from recent paving in October 2023.

FIGURES



P:\Projects\Ann Arbor\Landfill\GIS\Figures\GroundWater\2nd Qtr 2021\Well Location Map_REV.mxd

Source: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Upper Aquifer Monitoring Well
- Slurry Wall*

PW-1R-12	Purge Well Location
W-84-92	Monitoring Well Location
OW-31-08	Observation Well Location
P-1D	Piezometer Well Location

0 500 1,000 Feet

N

*Slurry wall location is approximate

TETRA TECH

CHECKED: PJM

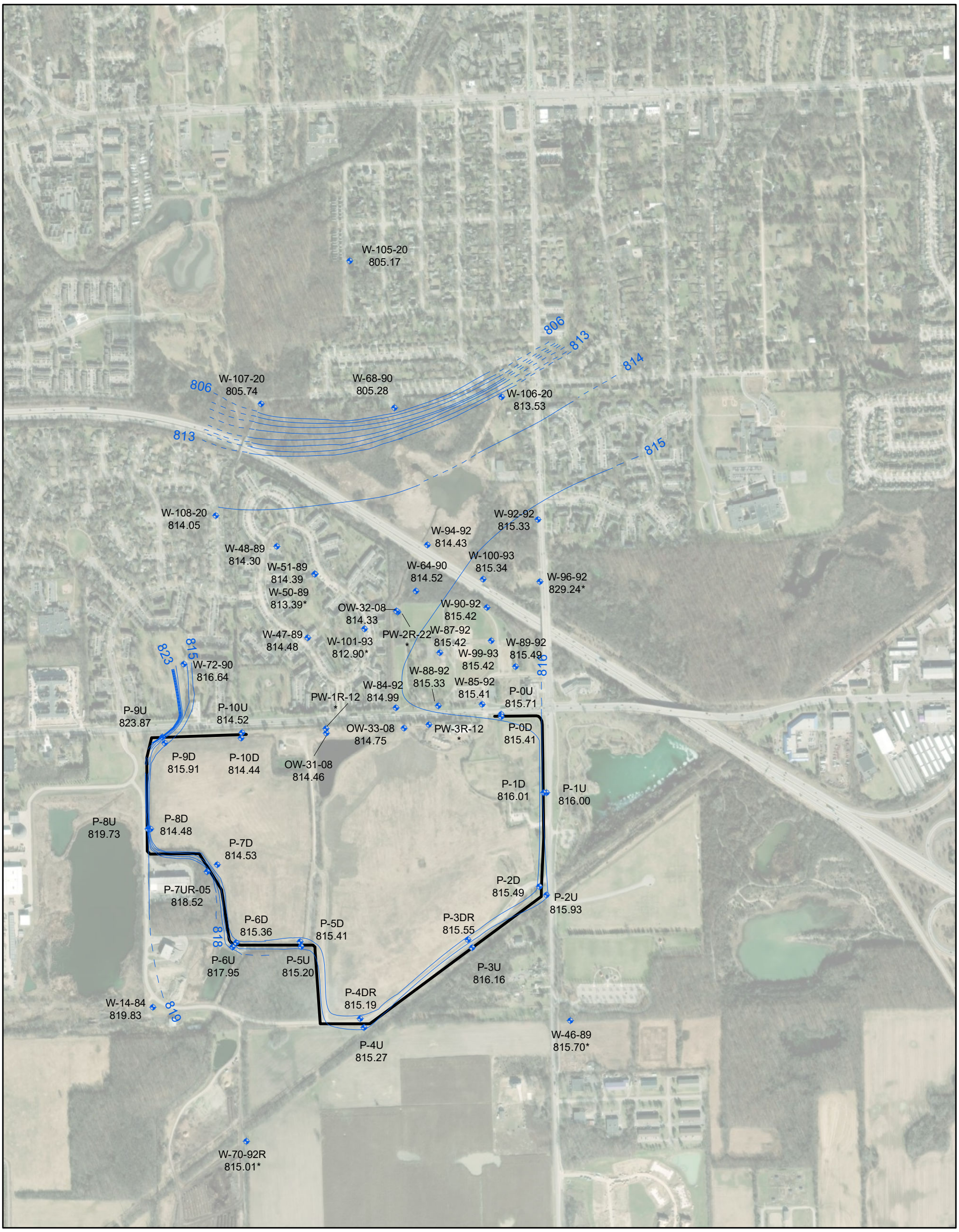
DATE: 10/01/2020

ANN ARBOR LANDFILL
ANN ARBOR, MICHIGAN

WELL LOCATION MAP

FIGURE

1



P:\Projects\Ann Arbor\Landfill\GIS\Figures\GroundWater\2nd Qtr 2024\UpperAquiferElevation_April2024.mxd

Base Map Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Upper Aquifer Well	PW-1R-01	Purge Well Location
813 Groundwater Elevation Contour	W-84-92	Monitoring Well Location
813 Groundwater Elevation	OW-31-08	Observation Well Location
Slurry Wall[2]	P-1D	Piezometer Well Location

N

0 500 1,000 Feet

Notes:
1. Contour Interval = 1.0 feet
2. Slurry Wall Location is Approximate.
3. Groundwater elevations for PW-1R-12, PW-2R-22 and PW-3R-12 were not used in the construction of this map as they are pumping wells.
4. * Water level not used in the construction of contours.
5. NA = not applicable, measurement not reliable.
6. Datum is NAVD 1988.

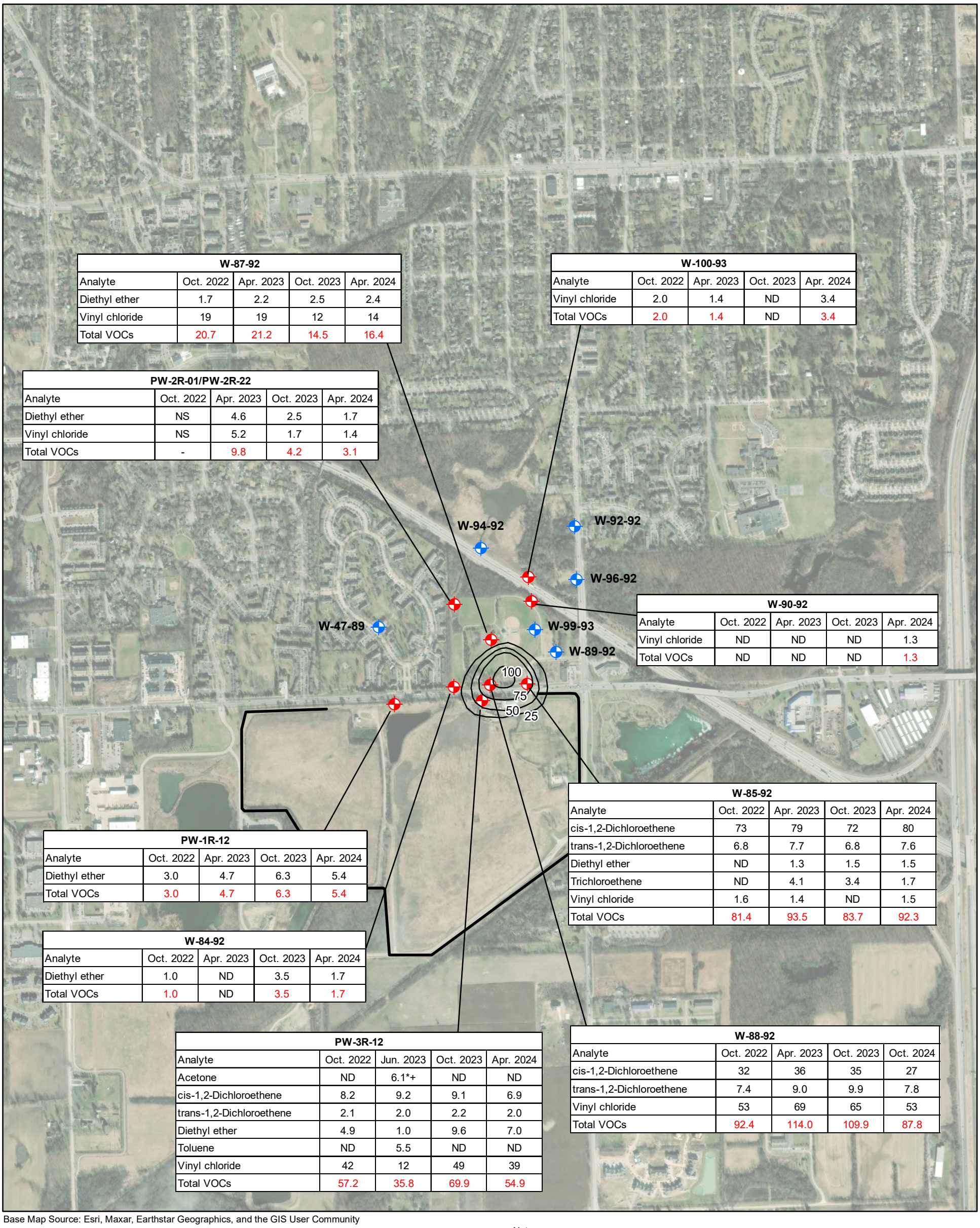
TETRA TECH

CHECKED: PJM | DATE: 7/8/2024

ANN ARBOR LANDFILL
ANN ARBOR, MICHIGAN

UPPER AQUIFER GROUNDWATER ELEVATION CONTOUR MAP APRIL 1, 2024

FIGURE 2



W-87-92

Analyte	Oct. 2022	Apr. 2023	Oct. 2023	Apr. 2024
Diethyl ether	1.7	2.2	2.5	2.4
Vinyl chloride	19	19	12	14
Total VOCs	20.7	21.2	14.5	16.4

W-100-93

Analyte	Oct. 2022	Apr. 2023	Oct. 2023	Apr. 2024
Vinyl chloride	2.0	1.4	ND	3.4
Total VOCs	2.0	1.4	ND	3.4

PW-2R-01/PW-2R-22

Analyte	Oct. 2022	Apr. 2023	Oct. 2023	Apr. 2024
Diethyl ether	NS	4.6	2.5	1.7
Vinyl chloride	NS	5.2	1.7	1.4
Total VOCs	-	9.8	4.2	3.1

W-90-92

Analyte	Oct. 2022	Apr. 2023	Oct. 2023	Apr. 2024
Vinyl chloride	ND	ND	ND	1.3
Total VOCs	ND	ND	ND	1.3

W-85-92

Analyte	Oct. 2022	Apr. 2023	Oct. 2023	Apr. 2024
cis-1,2-Dichloroethene	73	79	72	80
trans-1,2-Dichloroethene	6.8	7.7	6.8	7.6
Diethyl ether	ND	1.3	1.5	1.5
Trichloroethene	ND	4.1	3.4	1.7
Vinyl chloride	1.6	1.4	ND	1.5
Total VOCs	81.4	93.5	83.7	92.3

PW-1R-12

Analyte	Oct. 2022	Apr. 2023	Oct. 2023	Apr. 2024
Diethyl ether	3.0	4.7	6.3	5.4
Total VOCs	3.0	4.7	6.3	5.4

W-84-92

Analyte	Oct. 2022	Apr. 2023	Oct. 2023	Apr. 2024
Diethyl ether	1.0	ND	3.5	1.7
Total VOCs	1.0	ND	3.5	1.7

PW-3R-12

Analyte	Oct. 2022	Jun. 2023	Oct. 2023	Apr. 2024
Acetone	ND	6.1*+	ND	ND
cis-1,2-Dichloroethene	8.2	9.2	9.1	6.9
trans-1,2-Dichloroethene	2.1	2.0	2.2	2.0
Diethyl ether	4.9	1.0	9.6	7.0
Toluene	ND	5.5	ND	ND
Vinyl chloride	42	12	49	39
Total VOCs	57.2	35.8	69.9	54.9

W-88-92

Analyte	Oct. 2022	Apr. 2023	Oct. 2023	Oct. 2024
cis-1,2-Dichloroethene	32	36	35	27
trans-1,2-Dichloroethene	7.4	9.0	9.9	7.8
Vinyl chloride	53	69	65	53
Total VOCs	92.4	114.0	109.9	87.8

P:\Projects\Ann Arbor\Landfill\GIS\Figures\GroundWater\2nd Qtr 2024\April 2024_VOCs_Isoconcentration Map.mxd

Base Map Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Monitoring well with detectable VOC concentrations

Monitoring well with no detectable VOC concentrations

Slurry Wall[3]

April 2024 Isoconcentration Contour Line
(Contour interval = 25 feet)

N

0 500 1,000 Feet

Notes:
1. All units expressed in micrograms per liter.
2. ND = below current reporting limits.
3. NS = not sampled.
4. Slurry wall location is approximate.
5. Total Volatile Organic Compounds (VOCs) do not include 1,4-Dioxane concentrations.
6. PW-1R-12, PW-2R-22 and PW-3R-12 are not used for contouring.
7. Total detectable VOC concentrations are depicted in red.
8. PW-2R-01 was not operational during the October 2022 semi-annual event and was replaced in December 2022. The new well was shut off due to mechanical issues in April 2023.
9. PW-2R-22 and PW-3R-12 were not operational during the April 2023 semi-annual event but were sampled in June 2023.
10. *+ = LCS and/or LCSD is outside acceptance limits, high biased.
11. Locations with no data presented have been ND for all parameters for at least the last four quarters.

TETRA TECH

CHECKED: PJM

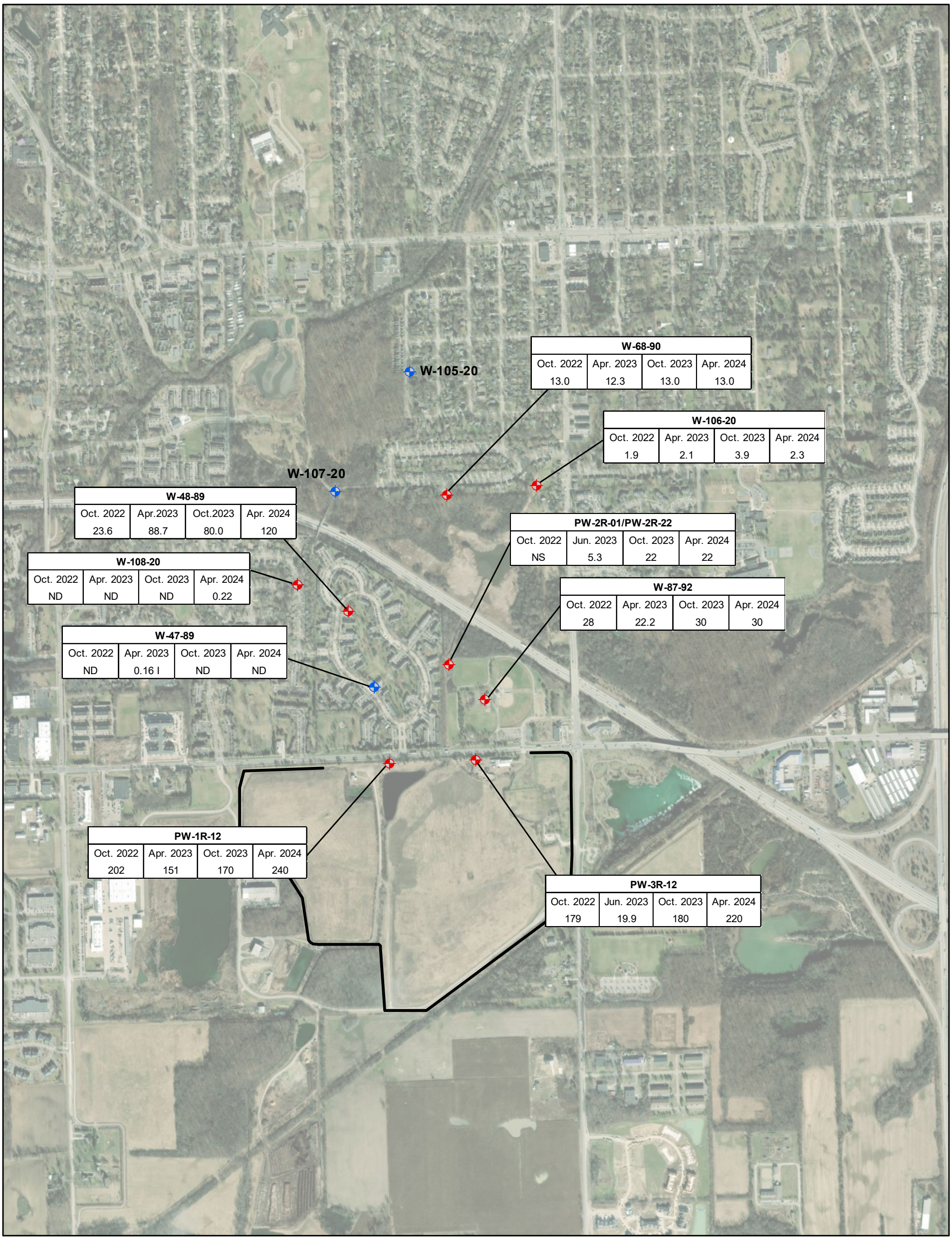
DATE: 7/15/2024

ANN ARBOR LANDFILL
ANN ARBOR, MICHIGAN

TOTAL VOCs ISOCONCENTRATION MAP
APRIL 2024

FIGURE

3



P:\Projects\Ann Arbor\Landfill\GIS\Figures\GroundWater\2nd Qtr 2024\April 2024_dioxane_Concentration Map.mxd

Base Map Source: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

- Monitoring well with detectable concentrations of 1,4-Dioxane
- Monitoring well with no detectable concentrations of 1,4-Dioxane
- Slurry Wall[2]

0 500 1,000 2,000 Feet

N

Notes:
1. All units expressed in micrograms per liter.
2. Slurry Wall Location is Approximate.
3. I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
4. NS = not sampled.
3. PW-2R-01 was not operational during the October 2022 semi-annual event and was replaced in December 2022. The new well was shut off due to mechanical issues in April 2023.
6. PW-2R-22 and PW-3R-12 were not operational during the April 2023 semi-annual event but were sampled in June 2023.
7. Locations with no data presented have been ND for all parameters for at least the last four quarters.

TETRA TECH

CHECKED: PJM | DATE: 7/15/2024

ANN ARBOR LANDFILL
ANN ARBOR, MICHIGAN

1,4-DIOXANE CONCENTRATION MAP
APRIL 2024

FIGURE
4

APPENDICES

APPENDIX A

Groundwater Sampling Record

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Co-op, near # 2650, within fenced in area, thru gate(stick up)

SAMPLE: W-47-89

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: **Weather:** **Date:** 4-4-24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 13.91 **Initial Depth to Water (ft.):** 13.76

Total Depth of Well (ft.): 31.00 **Time Sampled:** 18:10

Water Volume in Well (gal.): 2.81 **Purge Volume Prior to Sampling (gal.):** 1

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - 1,4 dioxane and VOCs (April & Oct)

Comments: Throttle @ 25 PSI, water clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/6/23										
12:58	13.91	14.60	6.95	1.025	mS/cm	194.1	2.7	18.97	0.8	
17:44	13.78	13.0	7.16	0.868	mS/cm	114.6	~~01.05~~	81.85		O_2: 2.17 @ 17:44
17:47	13.76	13.0	7.07	0.877		89.4	0.95	59.15		
17:50	13.76	13.0	7.06	0.889		75.8	0.55	29.86		
17:53	13.76	13.1	7.05	0.896		66.4	0.28	21.67		
17:56	13.76	13.1	7.04	0.898		60.3	0.18	13.35		
17:59	13.76	13.1	7.04	0.898		56.8	0.09	11.95		
18:02	13.76	13.1	7.03	0.896		52.7	0.00	10.86		
18:05	13.76	13.1	7.02	0.893		47.5	0.00	10.13		
18:08	13.76	13.1	7.02	0.889		43.7	0.00	9.65		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Vol=pi(r)2*h 1 liter = .264 gallons 1 gallon = 231 inches³
1 liter = 61.02 inches³ 1 inch = 2.54 cm

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: 2908 between large bush and fence **SAMPLE:** W-48-89

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** Overcast, upper 40's **Date:** 4-4-24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 15.67 **Initial Depth to Water (ft.):** 15.25

Total Depth of Well (ft.): 36.90 **Time Sampled:** 17:30

Water Volume in Well (gal.): 3.53 **Actual Volume Removed (gal.):** 2.5

Disposal Method for Purged Water: Sanitary sewer

Parameters: 1,4 dioxane

Comments: Throttle @ 35 PSI, water clear.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/6/23										
13:41	15.69	14.6	6.90	1.27	mS/cm	123.5	3.72	9.44	1.0	
16:46	15.29	12.7	7.20	1.056		144.9	2.68	12.32		
16:49	15.50	12.3	7.18	1.023		116.4	3.18	18.16		
16:52	15.50	11.9	7.18	1.002		85.6	4.25	30.44		
16:55	15.50	12.6	7.08	1.025		52.7	1.45	14.87		
16:58	15.50	13.2	7.06	1.062		17.5	0.31	16.72		
17:01	15.50	13.1	7.06	1.073		6.1	1.05	13.89		
17:04	15.50	13.2	7.06	1.075		-0.6	0.63	14.93		
17:07	15.50	13.2	7.04	1.078		-4.5	0.17	16.57		
17:10	15.50	13.2	7.04	1.078		-6.0	0.28	16.91		
17:13	15.50	13.3	7.04	1.078		-7.3	0.26	17.18		
17:16	15.50	13.2	7.05	1.077		-3.3	1.17	27.92		
17:19	15.50	13.2	7.02	1.078		0.3	0.20	30.89		
17:22	15.50	13.3	7.01	1.076		-3.1	0.18	29.35		
17:25	15.50	13.3	7.01	1.077	↓	-5.3	0.20	32.89		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: East side of dead-end @ Eddy, off of verle (stick up)

SAMPLE: W-68-90

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** Overcast, upper 40's **Date:** 4-4-24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 17.80 **Initial Depth to Water (ft.):** 18.45

Total Depth of Well (ft.): 24.50 **Time Sampled:** 12:05

Water Volume in Well (gal.): 0.99 **Actual Volume Removed (gal.):** 1.1

Disposal Method for Purged Water: Sanitary sewer

Parameters: 1,4 dioxane

Comments: Throttle @ 25 psi, water clear.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/6/23										
10:59	17.20	11.0	6.78	1.667	mS/cm	105.6	2.23	3.5	1.25	
11:44	18.62	10.2	6.97	1.476		-43.2	0.32	55.18		
11:47	18.52	10.0	6.91	1.414		-23.2	0.0	12.52		
11:50	18.57	10.0	6.91	1.406		-21.9	0.0	5.38		
11:53	18.57	10.1	6.92	1.403		-22.1	0.0	4.28		
11:56	18.57	10.2	6.92	1.403		-22.7	0.0	3.64		
11:59	18.57	10.3	6.92	1.403		-23.3	0.0	3.37		
12:02	18.57	10.3	6.92	1.402	↓	-23.6	0.0	3.08		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Park, near the meter pit

SAMPLE: W-84-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** Overcast, mid 40's **Date:** 4-5-24

Sampling Equipment: Peristaltic Pump

Previous Water Level (ft.): 11.38 **Initial Depth to Water (ft.):** 11.32

Total Depth of Well (ft.): 21.02 **Time Sampled:** 15:15

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** 1.0

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA: VOCs (April and Oct)

Comments: Water initially black, then mostly clear. Pump set @ 18.5', flow rate = 100 mL/min.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/4/23										
14:56	11.86	16.30	6.82	0.582	mS/cm	52.5	2.48	26.22	0.7	bubbles/air
14:42	11.76	10.3	7.42	0.380		92.6	4.92	55.09		black substrate in water
14:45	11.78	10.3	7.37	0.381		108.1	4.34	108.55		
14:48	11.78	10.3	7.27	0.408		113.6	3.81	58.35		
14:51	11.78	10.4	7.21	0.433		114.6	3.28	39.29		
14:54	11.78	10.9	7.18	0.448		113.8	2.87	35.82		
14:57	11.78	11.0	7.17	0.456		113.8	2.76	34.12		
15:00	11.78	11.0	7.15	0.472		114.3	2.59	31.48		
15:03	11.78	10.7	7.15	0.478		114.6	2.33	30.35		
15:06	11.78	10.8	7.15	0.488		114.5	2.10	30.89		
15:09	11.78	10.9	7.14	0.497		114.5	1.95	29.26		
15:12	11.78	10.8	7.14	0.501		114.6	1.90	28.47		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech-GEO
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Park, near driveway/entrance

SAMPLE: W-85-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** overcast, low 40s **Date:** 4-5-24

Sampling Equipment: Peristaltic Pump

Previous Water Level (ft.): 23.04 **Initial Depth to Water (ft.):** 22.95

Total Depth of Well (ft.): 32.38 **Time Sampled:** 12:15

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** .5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April, & Oct)

Comments: Water cloudy, then clear. Pump set at 29', flow rate = 100 mL/min.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance		Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
				Value	Units					
Previous Reading: 10/6/23										
12:18	23.05	15.40	6.49	1.947	mS/cm	168.6	1.86	11.0	0.6	
11:53	22.95	10.4	6.58	1.749		50.6	0.28	14.51		
11:56	22.95	10.7	6.57	1.745		48.0	0.0	8.77		
11:59	22.95	10.6	6.57	1.747		47.9	0.0	8.94		
12:02	22.95	10.7	6.58	1.747		47.5	0.0	9.09		
12:05	22.95	10.8	6.58	1.744		47.2	0.0	6.40		
12:08	22.95	11.1	6.58	1.740		47.3	0.0	6.56		
12:11	22.95	11.1	6.58	1.744		47.5	0.0	6.41		
12:14	22.95	11.0	6.58	1.743		47.7	0.0	6.32		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Park, near bathroom and red playground area, next to bench **SAMPLE:** W-87-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** light snow, low 40's **Date:** 4-5-24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 17.57 **Initial Depth to Water (ft.):** 17.37

Total Depth of Well (ft.): 26.72 **Time Sampled:** 14:05

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** 2.0

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - 1,4 dioxane and VOCs (April & Oct)

Comments: Throttle @ 45 PSI. Water clear.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance		Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
				Value	Units					
Previous Reading: 10/5/23										
14:39	17.57	13.70	6.69	1.526	mS/cm	68.4	1.90	14.22	0.7	
13:29	17.37	11.8	6.91	1.375		10.4	0.20	34.46		
13:32	17.37	11.8	6.86	1.353		5.3	-0.62	110.25		
13:35	17.37	11.8	6.90	1.342		-1.0	-0.73	54.87		
13:38	17.37	11.9	6.90	1.342		-1.5	-0.68	35.16		
13:41	17.37	11.8	6.91	1.337		-3.1	-0.62	23.60		
13:44	17.37	11.9	6.92	1.330		-4.6	-0.55	20.23		
13:47	17.37	11.9	6.94	1.319		-4.1	-0.12	17.61		
13:50	17.37	12.0	6.95	1.318		-4.1	-0.08	18.34		
13:53	17.37	12.0	6.96	1.312		-3.8	0.10	15.21		
13:56	17.37	12.1	6.97	1.301		-3.3	0.39	13.95		
13:59	17.37	12.1	6.98	1.300		-2.8	0.42	12.26		
14:02	17.37	12.1	6.97	1.299		-2.9	0.37	11.95		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: SE Area Park, grass area south of sidewalk **SAMPLE:** W-88-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TUM, RMF **Weather:** 45° Rainy, Overcast **Date:** 4-2-24

Sampling Equipment: Peristaltic Pump

Previous Water Level (ft.): 20.27 **Initial Depth to Water (ft.):** 20.07

Total Depth of Well (ft.): 29.21 **Time Sampled:** 15:50

Water Volume in Well (gal.): 1.49 **Purge Volume Prior to Sampling (gal.):** ~.5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA: VOCs (April and Oct)

Comments: Water clear, pump set @ 27', flow rate = 100 mL/min.

Time	Depth to H20 (FT)	Temp (C) ±5%	pH (S.U.) ±.1	Specific Conductance Value ±3%	Specific Conductance Units	Redox (mV) ±10 mV	O_2 (mg/l) 10%	Turb (NTU) 10%	Vol. removed (gal.)	Notes
Previous Reading: 10/9/23										
11:17	20.27	13.10	6.41	1.383	mS/cm	108.7	2.14	0.49	0.5	
15:25	20.08	9.4	7.06	1.555		-18.4	0.48	4.15		
15:28	20.08	9.9	7.04	1.557		-10.5	-0.24	3.21		
15:31	20.08	10.1	7.04	1.570		-5.6	-0.45	3.82		
15:34	20.08	10.1	7.04	1.572		-0.8	-0.58	2.17		
15:37	20.08	10.2	7.04	1.572		0.5	-0.67	1.03		
15:40	20.08	10.2	7.04	1.572		1.2	-0.71	1.07		
15:43	20.08	10.1	7.05	1.574		2.4	-0.73	1.11		
15:46	20.08	10.0	7.05	1.573		2.4	-0.74	1.12		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Park, east of gravel lot, near light post in grass **SAMPLE:** W-89-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** 43 Partly cloudy **Date:** 4-5-24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 22.43 **Initial Depth to Water (ft.):** 22.25

Total Depth of Well (ft.): 32.41 **Time Sampled:** 13:00

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** 1.5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April & Oct)

Comments: Throttle @ 90 PSI, water clear throttle @ 50 PSI

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/5/23										
12:15	22.43	13.90	6.62	1.427	mS/cm	55.3	1.88	0.55	0.70	
12:37	22.27	11.0	6.83	1.262		-68.0	0.22	7.63		
12:40	22.27	11.2	6.92	1.097		-64.3	-0.37	6.06		
12:43	22.27	11.1	6.97	1.052		-57.0	-0.66	4.57		
12:46	22.27	11.2	6.98	1.044		-52.9	-0.76	4.48		Straighten tubing
12:49	22.27	11.0	6.98	1.041		-49.3	-0.83	3.85		to purge at lower
12:52	22.27	10.8	6.98	1.038		-46.7	-0.87	3.53		psi
12:55	22.27	10.7	6.98	1.038		-44.4	-0.89	3.60		
12:58	22.27	10.8	6.97	1.037		-42.0	-0.89	3.44		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Park, N of baseball field, enter trees at end of pines before curve in sidewalk

SAMPLE: W-90-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** cloudy, mid 40's **Date:** 4-3-24

Sampling Equipment: Peristaltic Pump

Previous Water Level (ft.): 17.70 **Initial Depth to Water (ft.):** 17.51

Total Depth of Well (ft.): 24.05 **Time Sampled:** 16:00

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** ~.6

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April & Oct)

Comments: Water clear. Pump set @ 21.5' Flow rate = 100 mL/min

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/4/23		3%	±0.1	3%		±10 mV	10%	10%		
14:05	17.72	17.60	6.86	0.971	mS/cm	126.9	2.48	6.81	0.7	
15:33	17.51	9.6	7.20	0.829		147.1	0.99	4.77		
15:36	17.51	9.4	7.20	0.831		140.6	0.03	3.90		
15:39	17.51	9.5	7.19	0.825		134.1	-0.30	3.72		
15:42		9.5	7.18	0.827		130.3	-0.45	3.49		
15:45		9.8	7.17	0.826		128.4	-0.52	3.78		
15:48		9.5	7.17	0.835		127.1	-0.60	3.60		
15:51		9.4	7.17	0.837		126.4	-0.64	3.09		
15:54		9.4	7.17	0.841		125.8	-0.69	2.62		
15:57		9.3	7.17	0.843		1255	-0.72	2.70		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: On sidewalk along Platt Road

SAMPLE: W-92-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TUM, RMF **Weather:** 43, Partly Cloudy **Date:** 4-4-24

Sampling Equipment: Peristaltic pump

Previous Water Level (ft.): 12.55 **Initial Depth to Water (ft.):** 12.29

Total Depth of Well (ft.): 18.24 **Time Sampled:** 13:50

Water Volume in Well (gal.): 0.97 **Purge Volume Prior to Sampling (gal.):** 3

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April, & Oct)

Comments: Pump set at 15', Pumping rate = 100 ml/min, Water clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/9/23										
10:08	12.55	13.20	6.61	1.556	mS/cm	168.9	1.98	1.3	0.75	
13:19	12.31	10.1	7.15	2.103	mS/cm	176.6	2.57	35.78		
13:22	12.31	10.2	7.11	2.041		159.2	0.19	19.35		
13:25	12.31	10.2	7.11	2.003		154.2	-0.05	10.81		
13:28	12.31	10.4	7.10	1.958		149.7	-0.28	9.66		
13:31	12.31	10.5	7.09	1.912		146.2	-0.40	8.85		
13:34	12.31	10.7	7.08	1.886		143.9	-0.53	7.25		
13:37	12.31	11.0	7.08	1.869		141.5	-0.57	6.84		
13:40	12.31	11.2	7.07	1.857		139.5	-0.61	6.02		
13:43	12.31	11.3	7.06	1.852		137.8	-0.62	6.11		
13:46	12.31	11.3	7.05	1.850		137.1	-0.60	5.89		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0026	0.0059	0.0104	0.0163	0.0234	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: I-94, near wetland past W-100-93, near orange warning sign, past red brick bldg in distance (stick up)

SAMPLE: W-94-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** Overcast, low 40's **Date:** 4-5-24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 8.48 **Initial Depth to Water (ft.):** 8.47

Total Depth of Well (ft.): 34.96 **Time Sampled:** 11:03

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** 2

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April & Oct)

Comments: Throttle @ 35 PSI, water clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/5/23										
13:37	8.54	11.20	7.00	1.537	mS/cm	42.1	2.02	27.03	0.6	
10:30	8.47	9.6	7.78	1.464		107.1	3.66	7.96		
10:33	8.50	10.2	7.54	1.355		-22.1	1.54	165.38		
10:36	8.50	10.1	7.46	1.349		-36.0	0.02	97.60		
10:39	8.50	10.0	7.37	1.348		-39.8	0.0	50.64		
10:42	8.50	9.9	7.30	1.349		-40.0	0.0	28.20		
10:45	8.50	10.0	7.24	1.350		-40.1	0.0	20.27		
10:48	8.50	10.1	7.19	1.354		-37.0	0.0	15.34		
10:51	8.50	10.2	7.15	1.355		-34.3	0.0	12.06		
10:54	8.50	10.3	7.12	1.356		-31.3	0.0	9.40		
10:57	8.50	10.3	7.10	1.358		-28.4	0.0	8.10		
11:00	8.50	10.3	7.08	1.357		-25.8	0.0	7.50		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Platt Rd., in front of 3802 **SAMPLE:** W-96-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TWM, RMF **Weather:** 42, Partly Cloudy **Date:** 4-4-24

Sampling Equipment: Peristaltic Pump

Previous Water Level (ft.): 12.52 **Initial Depth to Water (ft.):** 5.28

Total Depth of Well (ft.): 25.64 **Time Sampled:** 15:10

Water Volume in Well (gal.): 3.32 **Purge Volume Prior to Sampling (gal.):** ~4

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April & Oct)

Comments: Water clear. Excessive drawdown.

Pump set at 23'. Pump rate = 100 mL/min.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/9/23										
9:33	24.18	13.60	6.97	1.598	mS/cm	45.5	2.78	30.11	2.5	well purged dry
14:16	6.24	11.3	7.02	7.604	mS/cm	-4.2	0.42	19.08		
14:19	6.94	11.1	7.05	7.617		-3.2	-0.29	16.40		
14:22	7.45	11.3	7.09	7.603		2.1	-0.51	14.67		
14:25	7.90	11.3	7.11	7.618		2.3	-0.60	12.91		All parameters
14:28	8.39	11.3	7.12	7.612		1.4	-0.66	13.12		stabalized except
14:31	9.13	11.5	7.12	7.610		-0.1	-0.72	11.97		Depth to water,
14:34	9.63	11.6	7.13	7.610		-1.4	-0.74	11.92		would not stabilize.
14:37	10.21	11.7	7.13	7.608		-3.1	-0.77	11.19		Well Purged dry
										Recharge Sampled

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Vol=pi(r)2*h 1 liter = .264 gallons 1 liter = 61.02 inches³ 1 gallon = 231 inches³ 1 inch = 2.54 cm

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: SE Area Park, grass between baseball fields **SAMPLE:** W-99-93

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TJM, RMF **Weather:** 45° Rainy, Overcast **Date:** 4-2-24

Sampling Equipment: Peristaltic Pump

Previous Water Level (ft.): 13.30 **Initial Depth to Water (ft.):** 13.14

Total Depth of Well (ft.): 16.58 **Time Sampled:** 14:52

Water Volume in Well (gal.): 0.56 **Purge Volume Prior to Sampling (gal.):** ~.5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April & Oct)

Comments: Water clear, flow rate = 100 mL/min, pump set at 14'

Time	Depth to H20 (FT)	Temp (C) 3%	pH (S.U.) ±.1	Specific Conductance Value 3%	Specific Conductance Units	Redox (mV) ±10mV	O_2 (mg/l) 10%	Turb (NTU) 10%	Vol. removed (gal.)	Notes
Previous Reading: 10/4/23										
13:09	13.30	19.20	7.28	0.558	ms/cm	99.2	3.88	19.11	0.50	
14:24	13.16	8.9	7.91	0.524		220.2	3.05	25.77		
14:27	13.16	8.8	7.90	0.525		220.2	2.76	21.63		
14:30	13.16	8.8	7.90	0.522		219.6	2.64	18.36		
14:33	13.16	8.9	7.89	0.522		219.4	2.58	18.31		
14:36	13.16	8.8	7.87	0.523		219.3	2.51	14.06		
14:39	13.16	8.7	7.86	0.522		219.0	2.43	13.60		
14:42	13.16	8.7	7.85	0.521		218.7	2.34	11.47		
14:45	13.16	8.7	7.84	0.521		218.2	2.29	10.93		
14:48	13.16	8.7	7.83	0.520		217.7	2.25	11.15		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: I-94, past 23 and 2 overpasseses, eastern well under willow tree **SAMPLE: W-100-93**

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** overcast, 35°F **Date:** 4/5/24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 7.19 **Initial Depth to Water (ft.):** 6.97

Total Depth of Well (ft.): 29.51 **Time Sampled:** 9:53

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** 1

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April & Oct)

Comments: Throttle @ 30 PSI, water clear. Well wizard causing air in flow cell.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/5/2023										
13:05	7.19	15.80	7.96	1.059	mS/cm	136	9.30	15.56	0.60	
9:27	6.97	9.6	7.98	1.320		-26.0	2.58	1.49		
9:30	7.00	9.7	7.40	1.285		-53.4	-0.12	0.88		
9:33	7.00	9.0	7.37	1.286		-53.2	-0.37	0.76		
9:36	7.00	8.4	7.29	1.259		-51.5	-0.50	0.64		
9:39	7.00	8.1	7.27	1.259		-50.9	-0.57	0.58		
9:42	7.00	7.8	7.24	1.256		-49.9	-0.61	0.51		
9:45	7.00	7.6	7.23	1,256		-49.4	-0.63	0.56		
9:48	7.00	7.5	7.21	1.254		-49.5	-0.66	0.53		
9:51	7.00	7.5	7.21	1.255		-49.3	-0.68	0.57		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Vol=pi(r)2*h 1 liter = .264 gallons 1 liter = 61.02 inches³ 1 gallon = 231 inches³ 1 inch = 2.54 cm

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: 3255 Cardinal Ave. ROW

SAMPLE: W-105-20

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** Overcast 35 **Date:** 4-4-24

Sampling Equipment: peristaltic pump

Previous Water Level (ft.): 18.80 **Initial Depth to Water (ft.):** 18.29

Total Depth of Well (ft.): 27.85 **Time Sampled:** 10:05

Water Volume in Well (gal.): 1.56 **Purge Volume Prior to Sampling (gal.):** ~.75

Disposal Method for Purged Water: Sanitary Sewer

Parameters: 1,4-dioxane

Comments: Pumping rate @ 150 mL/min

Time	Depth to H20 (FT)	Temp (C) 3%	pH (S.U.) ±.1	Specific Conductance Value 3%	Specific Conductance Units	Redox (mV) ± 10mV	O_2 (mg/l) 10%	Turb (NTU) 10%	Vol. removed (gal.)	Notes
Previous Reading: 10/6/23										
9:31	18.80	14.30	6.86	0.977	mS/cm	313.6	2.21	12.95	1.0	
9:30	18.30	9.3	7.06	0.812	mS/cm	215.3	1.70	43.67		
9:33	18.30	9.3	7.05	0.820		208.5	0.55	35.29		
9:36	18.30	9.1	7.05	0.817		197.0	0.31	24.89		
9:39	18.30	9.2	7.05	0.815		192.8	0.26	22.81		
9:42	18.30	9.3	7.05	0.816		187.4	0.21	18.26		
9:45	18.30	9.4	7.05	0.815		180.3	0.14	16.49		
9:48	18.30	9.3	7.06	0.816		175.5	0.10	15.20		
9:51	18.30	9.3	7.06	0.812		170.4	0.05	10.62		
9:54	18.30	9.3	7.06	0.814		166.5	0.02	9.90		
9:57	18.30	9.3	7.06	0.813		165.4	0.00	10.03		
10:00	18.30	9.3	7.06	0.811		162.2	0.00	10.20		
10:03	18.30	9.2	7.06	0.811		158.1	0.00	9.87		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Pilgrim Park **SAMPLE:** W-106-20

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** cloudy, upper 40's **Date:** 4-4-24

Sampling Equipment: peristaltic pump

Previous Water Level (ft.): 7.30 **Initial Depth to Water (ft.):** 6.43

Total Depth of Well (ft.): 17.86 **Time Sampled:** 12:55

Water Volume in Well (gal.): 1.87 **Purge Volume Prior to Sampling (gal.):** .5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: 1,4-dioxane

Comments: Pump rate 100 mL/min. Water clear.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/6/23										
11:40	7.65	14.50	6.82	1.369	ms/cm	105.4	1.89	31.13	0.70	
12:29	6.54	10.2	6.94	1.180		55.3	2.54	71.88		
12:32	6.54	10.1	6.93	1.176		42.2	0.73	111.98		
12:35	6.54	9.9	6.93	1.164		39.3	-0.32	106.22		
12:38	6.54	10.6	6.93	1.160		35.7	-0.53	68.41		
12:41	6.54	10.8	6.92	1.166		33.5	-0.51	51.48		
12:44	6.54	10.8	6.92	1.169		33.6	-0.56	40.35		
12:47	6.54	11.1	6.92	1.164		26.0	-0.66	35.68		
12:50	6.54	11.1	6.92	1.168		25.6	-0.68	37.88		
12:53	6.54	11.0	6.92	1.171	↓	26.5	-0.69	35.16		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Mary Beth Doyle Park (between pathways) **SAMPLE:** W-107-20

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** overcast, mid 40s **Date:** 4-4-24

Sampling Equipment: peristaltic pump

Previous Water Level (ft.): 20.86 **Initial Depth to Water (ft.):** 19.86

Total Depth of Well (ft.): 31.55 **Time Sampled:** 11:20

Water Volume in Well (gal.): 1.91 **Purge Volume Prior to Sampling (gal.):** 6.8

Disposal Method for Purged Water: Sanitary Sewer

Parameters: 1,4-dioxane

Comments: 100mL/min, water clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/6/23										
10:27	24.48	13.10	6.85	1.275	mS/cm	286.5	2.53	100.59	0.50	
10:36	20.72	10.1	6.92	1.071	mS/cm	56.5	1.34	32.01		
10:39	20.94	10.1	6.90	1.082		52.4	0.26	25.75		
10:42	21.14	10.1	6.90	1.081		55.0	0.13	21.69		
10:45	21.35	10.2	6.91	1.079		56.6	0.04	21.49		
10:48	21.55	10.4	6.91	1.079		61.0	0.09	22.66		
10:51	21.73	10.6	6.92	1.077		64.9	0.15	20.30		
10:54	21.86	10.6	6.92	1.078		67.2	0.19	20.03		
10:57	22.00	10.8	6.93	1.077		66.9	0.19	18.43		
11:00	22.19	10.9	6.93	1.079		66.3	0.18	16.79		
11:03	22.3	10.9	6.93	1.081		64.3	0.09	16.96		
11:06	22.42	10.9	6.93	1.080		62.4	0.07	15.71		
11:09	22.51	10.9	6.93	1.081		59.3	0.0	14.91		
11:12	22.63	11.0	6.94	1.080		48.0	0.0	11.93		
11:15	22.74	11.1	6.94	1.081		42.8	0.0	11.20		
11:18	22.80	11.1	6.94	1.081		40.4	0.0	12.10		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: 2170 Hemlock Dr. ROW

SAMPLE: W-108-20

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TWM, RMF **Weather:** 44, Partly Cloudy **Date:** 4-4-24

Sampling Equipment: peristaltic pump

Previous Water Level (ft.): 9.78 **Initial Depth to Water (ft.):** 9.48

Total Depth of Well (ft.): 41.42 **Time Sampled:** 16:25

Water Volume in Well (gal.): 5.21 **Purge Volume Prior to Sampling (gal.):** .5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: 1,4-dioxane

Comments: Pumping rate @ 100 mL/min. Water clear.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/5/23										
15:38	9.78	15.60	6.84	0.935	mS/cm	60.1	1.79	9.6	0.6	
16:01	9.58	9.6	7.58	0.876	mS/cm	-18.2	2.02	29.15		
16:04	9.58	10.5	7.32	0.817		-36.6	-0.19	32.72		
16:07	9.58	10.6	7.27	0.801		-38.0	-0.46	31.97		
16:10	9.58	10.7	7.24	0.788		-38.5	-0.59	30.73		
16:13	9.58	10.5	7.23	0.787		-38.6	-0.66	37.95		
16:16	9.58	10.7	7.22	0.787		-38.6	-0.75	33.22		
16:19	9.58	10.8	7.21	0.788		-38.7	-0.78	34.95		
16:22	9.58	10.8	7.21	0.788		-38.7	-0.80	33.61		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches

1 gallon = 231 inches
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: large box, north of retention pond

SAMPLE: PW-1R-12

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/3.2

Personnel: IVM, RMF **Weather:** cloudy, mid 40's **Date:** 4/3/24

Sampling Equipment: Dedicated pump system

Previous Water Level (ft.): 29.35 **Initial Depth to Water (ft.):** 35.49

Total Depth of Well (ft.): 38.00 **Time Sampled:** 12:00

Water Volume in Well (gal.): nm **Purge Volume Prior to Sampling (gal.):** 5 gal.

Disposal Method for Purged Water: Sanitary Sewer

Parameters: WW: Q - 1,4 dioxane, Ammonia, VC (Jan, July & Oct), A - annual list (April)

GW: SA - VOCs & 1,4 dioxane (April & Oct)

Comments: Water was clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/4/23										
9:22	29.36	12.90	6.64	1.862	ms/cm	-25.2	6.59	6.85	8.0	
	35.49	12.1	6.80	1.498		-3.4	6.03	15.20		
	35.49	12.5	6.77	1.543		-5.2	5.47	21.72		
	35.49	12.5	6.76	1511		-6.7	5.94	2.21		

1,4-dioxane sample bottle (Eurofins)

pH paper reading:	Did you add aditional preservative to 1,4-dioxane bottle? (circle one) Y / N	If Y (yes), approximate quantity added:

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches

1 gallon = 231 inches
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: large box, north of retention pond

SAMPLE: PW-2R-22

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: TVM, RMF **Weather:** cloudy, mid 40's **Date:** 4-3-24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 12.37 **Initial Depth to Water (ft.):** 16.90

Total Depth of Well (ft.): 22.00 **Time Sampled:** [redacted] 15:00

Water Volume in Well (gal.): nm **Purge Volume Prior to Sampling (gal.):** 5 gal

Disposal Method for Purged Water: Sanitary Sewer

Parameters: GW: SA - VOCs & 1,4 dioxane (April & Oct)

Comments: Water clear.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/4/23										
11:42	12.41	14.40	7.00	1.369	mS/cm	-6.5	9.79	4.87	6.2	
	16.90	11.1	7.13	1.153		-21.6	8.09	3.51		
		11.4	7.06	1.143		-25.5	6.65	1.53		
		11.6	7.05	1.145		-16.0	6.18	1.67		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
710 Avis Dr., Ann Arbor, MI 48108 (734) 213-2204

WATER QUALITY DATA SHEET

SAMPLE LOCATION: large box, north of retention pond

SAMPLE: PW-3R-12

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/3.2

Personnel: TJM, RMF **Weather:** Cloudy, mid 40's **Date:** 4-3-24

Sampling Equipment: Dedicated pump system

Previous Water Level (ft.): 30.53 **Initial Depth to Water (ft.):** 28.32

Total Depth of Well (ft.): 36.00 **Time Sampled:** 09:55

Water Volume in Well (gal.): nm **Purge Volume Prior to Sampling (gal.):** 5 gal

Disposal Method for Purged Water: Sanitary Sewer

Parameters: WW: Q - 1,4-dioxane, Ammonia, VC (Jan, July & Oct), A - annual list (Apr)

GW: SA - VOCs & 1,4 dioxane (April & Oct)

Comments: Water clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Previous Reading: 10/4/23										
10:39	30.57	14.10	6.70	2.271	mS/cm	2.1	8.43	3.73	8.0	
9:44	28.32	11.5	7.03	1.807		-10.0	8.55	4.56		
9:47	28.32	12.1	6.47	1.819		5.9	7.15	0.51		
9:50	28.32	12.5	6.89	1.804		7.2	6.46	1.21		

1,4-dioxane sample bottle (Eurofins)

pH paper reading:	Did you add aditional preservative to 1,4-dioxane bottle? (circle one) Y / N	If Y (yes), approximate quantity added:

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

APPENDIX B

Laboratory Analytical Report – Eurofins

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Alison Rauss
Tetra Tech GEO
1136 Oak Valley Dr.
Suite 100
Ann Arbor, Michigan 48108

Generated 5/2/2024 1:53:33 PM

JOB DESCRIPTION

Ann Arbor Landfill Semi-Annual GW

JOB NUMBER

240-202371-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
5/2/2024 1:53:33 PM

Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Method Summary 6
Sample Summary 7
Detection Summary 8
Client Sample Results 10
Surrogate Summary 38
QC Sample Results 39
QC Association Summary 46
Lab Chronicle 48
Certification Summary 51
Chain of Custody 52
Receipt Checklists 61

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job Narrative
240-202371-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 4/6/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.4°C.

GC/MS VOA
Method 8260D: NO MS/MSD in batch 608811 due to an incorrect dilution.

W-99-93 (240-202371-1), W-88-92 (240-202371-2), PW-3R-12 (240-202371-3), PW-1R-12 (240-202371-4), PW-2R-22 (240-202371-5), W-90-92 (240-202371-6), W-92-92 (240-202371-7), W-96-92 (240-202371-8), W-47-89 (240-202371-9), W-100-93 (240-202371-10), W-94-92 (240-202371-11) and (240-202228-C-2)

Method 8260D: The unpreserved vial was used for both analyses (UP and 8260C/D)

W-99-93 (240-202371-1), W-88-92 (240-202371-2), PW-3R-12 (240-202371-3), PW-1R-12 (240-202371-4), PW-2R-22 (240-202371-5), W-90-92 (240-202371-6), W-92-92 (240-202371-7), W-96-92 (240-202371-8), W-47-89 (240-202371-9), W-100-93 (240-202371-10) and W-94-92 (240-202371-11)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 522: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 200-202912.

Method 522: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of 2.5: PW-1R-12 (240-202371-4). The sample(s) was preserved to the appropriate pH in the laboratory using concentrated hydrochloric acid.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CLE
522	1,4 Dioxane (GC/MS SIM)	EPA	EET BUR
5030C	Purge and Trap	SW846	EET CLE
522	Solid-Phase Extraction (SPE)	EPA	EET BUR

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET BUR = Eurofins Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-202371-1	W-99-93	Water	04/02/24 14:52	04/06/24 08:00
240-202371-2	W-88-92	Water	04/02/24 15:50	04/06/24 08:00
240-202371-3	PW-3R-12	Water	04/03/24 09:55	04/06/24 08:00
240-202371-4	PW-1R-12	Water	04/03/24 12:00	04/06/24 08:00
240-202371-5	PW-2R-22	Water	04/03/24 15:00	04/06/24 08:00
240-202371-6	W-90-92	Water	04/03/24 16:00	04/06/24 08:00
240-202371-7	W-92-92	Water	04/04/24 13:50	04/06/24 08:00
240-202371-8	W-96-92	Water	04/04/24 15:10	04/06/24 08:00
240-202371-9	W-47-89	Water	04/04/24 18:10	04/06/24 08:00
240-202371-10	W-100-93	Water	04/05/24 09:53	04/06/24 08:00
240-202371-11	W-94-92	Water	04/05/24 11:03	04/06/24 08:00
240-202371-12	W-68-90	Water	04/04/24 12:05	04/06/24 08:00
240-202371-13	W-48-89	Water	04/04/24 17:30	04/06/24 08:00
240-202371-14	W-108-20	Water	04/04/24 16:25	04/06/24 08:00
240-202371-15	W-107-20	Water	04/04/24 11:20	04/06/24 08:00
240-202371-16	W-106-20	Water	04/04/24 12:55	04/06/24 08:00
240-202371-17	W-105-20	Water	04/04/24 10:05	04/06/24 08:00

Detection Summary

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-99-93 — Lab Sample ID: 240-202371-1

No Detections.

Client Sample ID: W-88-92 — Lab Sample ID: 240-202371-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	27		1.0		ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	7.8		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride - RA	53		2.0		ug/L	2		8260D	Total/NA

Client Sample ID: PW-3R-12 — Lab Sample ID: 240-202371-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	6.9		1.0		ug/L	1		8260D	Total/NA
Ethyl ether	7.0		1.0		ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	2.0		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride	39		1.0		ug/L	1		8260D	Total/NA
1,4-Dioxane	220		4.0		ug/L	20		522	Total/NA

Client Sample ID: PW-1R-12 — Lab Sample ID: 240-202371-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Ethyl ether	5.4		1.0		ug/L	1		8260D	Total/NA
1,4-Dioxane	240		4.0		ug/L	20		522	Total/NA

Client Sample ID: PW-2R-22 — Lab Sample ID: 240-202371-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Ethyl ether	1.7		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride	1.4		1.0		ug/L	1		8260D	Total/NA
1,4-Dioxane	22		0.40		ug/L	2		522	Total/NA

Client Sample ID: W-90-92 — Lab Sample ID: 240-202371-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	1.3		1.0		ug/L	1		8260D	Total/NA

Client Sample ID: W-92-92 — Lab Sample ID: 240-202371-7

No Detections.

Client Sample ID: W-96-92 — Lab Sample ID: 240-202371-8

No Detections.

Client Sample ID: W-47-89 — Lab Sample ID: 240-202371-9

No Detections.

Client Sample ID: W-100-93 — Lab Sample ID: 240-202371-10

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	3.4		1.0		ug/L	1		8260D	Total/NA

Client Sample ID: W-94-92 — Lab Sample ID: 240-202371-11

No Detections.

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-68-90 — Lab Sample ID: 240-202371-12

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	13		0.20		ug/L	1		522	Total/NA

Client Sample ID: W-48-89 — Lab Sample ID: 240-202371-13

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	120		2.0		ug/L	10		522	Total/NA

Client Sample ID: W-108-20 — Lab Sample ID: 240-202371-14

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.22		0.20		ug/L	1		522	Total/NA

Client Sample ID: W-107-20 — Lab Sample ID: 240-202371-15

No Detections.

Client Sample ID: W-106-20 — Lab Sample ID: 240-202371-16

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.3		0.20		ug/L	1		522	Total/NA

Client Sample ID: W-105-20 — Lab Sample ID: 240-202371-17

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202371-1

Client Sample ID: W-99-93
Date Collected: 04/02/24 14:52
Date Received: 04/06/24 08:00

Lab Sample ID: 240-202371-1
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/08/24 22:51	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/08/24 22:51	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/08/24 22:51	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/08/24 22:51	1
1,1-Dichloroethane	ND		1.0		ug/L			04/08/24 22:51	1
1,1-Dichloroethene	ND		1.0		ug/L			04/08/24 22:51	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/08/24 22:51	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/08/24 22:51	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/08/24 22:51	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/08/24 22:51	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/08/24 22:51	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/08/24 22:51	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/08/24 22:51	1
1,2-Dichloroethane	ND		1.0		ug/L			04/08/24 22:51	1
1,2-Dichloropropane	ND		1.0		ug/L			04/08/24 22:51	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/08/24 22:51	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/08/24 22:51	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/08/24 22:51	1
2-Butanone (MEK)	ND		10		ug/L			04/08/24 22:51	1
2-Hexanone	ND		10		ug/L			04/08/24 22:51	1
2-Methylnaphthalene	ND		5.0		ug/L			04/08/24 22:51	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/08/24 22:51	1
Acetone	ND		10		ug/L			04/08/24 22:51	1
Acrylonitrile	ND		20		ug/L			04/08/24 22:51	1
Benzene	ND		1.0		ug/L			04/08/24 22:51	1
Bromoform	ND		1.0		ug/L			04/08/24 22:51	1
Bromomethane	ND		1.0		ug/L			04/08/24 22:51	1
Carbon disulfide	ND		5.0		ug/L			04/08/24 22:51	1
Carbon tetrachloride	ND		1.0		ug/L			04/08/24 22:51	1
Chlorobenzene	ND		1.0		ug/L			04/08/24 22:51	1
Chlorodibromomethane	ND		1.0		ug/L			04/08/24 22:51	1
Chloroethane	ND		1.0		ug/L			04/08/24 22:51	1
Chloroform	ND		1.0		ug/L			04/08/24 22:51	1
Chloromethane	ND		1.0		ug/L			04/08/24 22:51	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/08/24 22:51	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/08/24 22:51	1
Dibromomethane	ND		1.0		ug/L			04/08/24 22:51	1
Chlorobromomethane	ND		1.0		ug/L			04/08/24 22:51	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/08/24 22:51	1
Dichlorobromomethane	ND		1.0		ug/L			04/08/24 22:51	1
Ethyl ether	ND		1.0		ug/L			04/08/24 22:51	1
Ethylbenzene	ND		1.0		ug/L			04/08/24 22:51	1
Iodomethane	ND		1.0		ug/L			04/08/24 22:51	1
Isopropylbenzene	ND		1.0		ug/L			04/08/24 22:51	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/08/24 22:51	1
Methylene Chloride	ND		5.0		ug/L			04/08/24 22:51	1
Naphthalene	ND		1.0		ug/L			04/08/24 22:51	1
n-Butylbenzene	ND		1.0		ug/L			04/08/24 22:51	1
N-Propylbenzene	ND		1.0		ug/L			04/08/24 22:51	1

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-99-93
Lab Sample ID: 240-202371-1
Date Collected: 04/02/24 14:52
Matrix: Water
Date Received: 04/06/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/08/24 22:51	1
Tetrachloroethene	ND		1.0		ug/L			04/08/24 22:51	1
Toluene	ND		1.0		ug/L			04/08/24 22:51	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/08/24 22:51	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/08/24 22:51	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/08/24 22:51	1
Trichloroethene	ND		1.0		ug/L			04/08/24 22:51	1
Trichlorofluoromethane	ND		1.0		ug/L			04/08/24 22:51	1
Vinyl chloride	ND		1.0		ug/L			04/08/24 22:51	1
Xylenes, Total	ND		2.0		ug/L			04/08/24 22:51	1
1,2-Dibromoethane	ND		1.0		ug/L			04/08/24 22:51	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/08/24 22:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*78 - 122*		*04/08/24 22:51*	*1*
Dibromofluoromethane (Surr)	*100*		*73 - 120*		*04/08/24 22:51*	*1*
4-Bromofluorobenzene (Surr)	*88*		*56 - 136*		*04/08/24 22:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*62 - 137*		*04/08/24 22:51*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202371-1

Client Sample ID: W-88-92
Date Collected: 04/02/24 15:50
Date Received: 04/06/24 08:00

Lab Sample ID: 240-202371-2
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/08/24 23:16	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/08/24 23:16	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/08/24 23:16	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/08/24 23:16	1
1,1-Dichloroethane	ND		1.0		ug/L			04/08/24 23:16	1
1,1-Dichloroethene	ND		1.0		ug/L			04/08/24 23:16	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/08/24 23:16	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/08/24 23:16	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/08/24 23:16	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/08/24 23:16	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/08/24 23:16	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/08/24 23:16	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/08/24 23:16	1
1,2-Dichloroethane	ND		1.0		ug/L			04/08/24 23:16	1
1,2-Dichloropropane	ND		1.0		ug/L			04/08/24 23:16	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/08/24 23:16	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/08/24 23:16	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/08/24 23:16	1
2-Butanone (MEK)	ND		10		ug/L			04/08/24 23:16	1
2-Hexanone	ND		10		ug/L			04/08/24 23:16	1
2-Methylnaphthalene	ND		5.0		ug/L			04/08/24 23:16	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/08/24 23:16	1
Acetone	ND		10		ug/L			04/08/24 23:16	1
Acrylonitrile	ND		20		ug/L			04/08/24 23:16	1
Benzene	ND		1.0		ug/L			04/08/24 23:16	1
Bromoform	ND		1.0		ug/L			04/08/24 23:16	1
Bromomethane	ND		1.0		ug/L			04/08/24 23:16	1
Carbon disulfide	ND		5.0		ug/L			04/08/24 23:16	1
Carbon tetrachloride	ND		1.0		ug/L			04/08/24 23:16	1
Chlorobenzene	ND		1.0		ug/L			04/08/24 23:16	1
Chlorodibromomethane	ND		1.0		ug/L			04/08/24 23:16	1
Chloroethane	ND		1.0		ug/L			04/08/24 23:16	1
Chloroform	ND		1.0		ug/L			04/08/24 23:16	1
Chloromethane	ND		1.0		ug/L			04/08/24 23:16	1
cis-1,2-Dichloroethene	**27**		1.0		ug/L			04/08/24 23:16	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/08/24 23:16	1
Dibromomethane	ND		1.0		ug/L			04/08/24 23:16	1
Chlorobromomethane	ND		1.0		ug/L			04/08/24 23:16	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/08/24 23:16	1
Dichlorobromomethane	ND		1.0		ug/L			04/08/24 23:16	1
Ethyl ether	ND		1.0		ug/L			04/08/24 23:16	1
Ethylbenzene	ND		1.0		ug/L			04/08/24 23:16	1
Iodomethane	ND		1.0		ug/L			04/08/24 23:16	1
Isopropylbenzene	ND		1.0		ug/L			04/08/24 23:16	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/08/24 23:16	1
Methylene Chloride	ND		5.0		ug/L			04/08/24 23:16	1
Naphthalene	ND		1.0		ug/L			04/08/24 23:16	1
n-Butylbenzene	ND		1.0		ug/L			04/08/24 23:16	1
N-Propylbenzene	ND		1.0		ug/L			04/08/24 23:16	1

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202371-1

Client Sample ID: W-88-92
Date Collected: 04/02/24 15:50
Date Received: 04/06/24 08:00

Lab Sample ID: 240-202371-2
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/08/24 23:16	1
Tetrachloroethene	ND		1.0		ug/L			04/08/24 23:16	1
Toluene	ND		1.0		ug/L			04/08/24 23:16	1
trans-1,2-Dichloroethene	**7.8**		1.0		ug/L			04/08/24 23:16	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/08/24 23:16	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/08/24 23:16	1
Trichloroethene	ND		1.0		ug/L			04/08/24 23:16	1
Trichlorofluoromethane	ND		1.0		ug/L			04/08/24 23:16	1
Xylenes, Total	ND		2.0		ug/L			04/08/24 23:16	1
1,2-Dibromoethane	ND		1.0		ug/L			04/08/24 23:16	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/08/24 23:16*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*78 - 122*		*04/08/24 23:16*	*1*
Dibromofluoromethane (Surr)	*98*		*73 - 120*		*04/08/24 23:16*	*1*
4-Bromofluorobenzene (Surr)	*86*		*56 - 136*		*04/08/24 23:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*		*04/08/24 23:16*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**53**		2.0		ug/L			04/09/24 13:14	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*78 - 122*		*04/09/24 13:14*	*2*
Dibromofluoromethane (Surr)	*98*		*73 - 120*		*04/09/24 13:14*	*2*
4-Bromofluorobenzene (Surr)	*91*		*56 - 136*		*04/09/24 13:14*	*2*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*		*04/09/24 13:14*	*2*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202371-1

Client Sample ID: PW-3R-12
Date Collected: 04/03/24 09:55
Date Received: 04/06/24 08:00

Lab Sample ID: 240-202371-3
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/08/24 23:40	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/08/24 23:40	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/08/24 23:40	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/08/24 23:40	1
1,1-Dichloroethane	ND		1.0		ug/L			04/08/24 23:40	1
1,1-Dichloroethene	ND		1.0		ug/L			04/08/24 23:40	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/08/24 23:40	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/08/24 23:40	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/08/24 23:40	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/08/24 23:40	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/08/24 23:40	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/08/24 23:40	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/08/24 23:40	1
1,2-Dichloroethane	ND		1.0		ug/L			04/08/24 23:40	1
1,2-Dichloropropane	ND		1.0		ug/L			04/08/24 23:40	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/08/24 23:40	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/08/24 23:40	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/08/24 23:40	1
2-Butanone (MEK)	ND		10		ug/L			04/08/24 23:40	1
2-Hexanone	ND		10		ug/L			04/08/24 23:40	1
2-Methylnaphthalene	ND		5.0		ug/L			04/08/24 23:40	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/08/24 23:40	1
Acetone	ND		10		ug/L			04/08/24 23:40	1
Acrylonitrile	ND		20		ug/L			04/08/24 23:40	1
Benzene	ND		1.0		ug/L			04/08/24 23:40	1
Bromoform	ND		1.0		ug/L			04/08/24 23:40	1
Bromomethane	ND		1.0		ug/L			04/08/24 23:40	1
Carbon disulfide	ND		5.0		ug/L			04/08/24 23:40	1
Carbon tetrachloride	ND		1.0		ug/L			04/08/24 23:40	1
Chlorobenzene	ND		1.0		ug/L			04/08/24 23:40	1
Chlorodibromomethane	ND		1.0		ug/L			04/08/24 23:40	1
Chloroethane	ND		1.0		ug/L			04/08/24 23:40	1
Chloroform	ND		1.0		ug/L			04/08/24 23:40	1
Chloromethane	ND		1.0		ug/L			04/08/24 23:40	1
cis-1,2-Dichloroethene	**6.9**		1.0		ug/L			04/08/24 23:40	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/08/24 23:40	1
Dibromomethane	ND		1.0		ug/L			04/08/24 23:40	1
Chlorobromomethane	ND		1.0		ug/L			04/08/24 23:40	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/08/24 23:40	1
Dichlorobromomethane	ND		1.0		ug/L			04/08/24 23:40	1
Ethyl ether	**7.0**		1.0		ug/L			04/08/24 23:40	1
Ethylbenzene	ND		1.0		ug/L			04/08/24 23:40	1
Iodomethane	ND		1.0		ug/L			04/08/24 23:40	1
Isopropylbenzene	ND		1.0		ug/L			04/08/24 23:40	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/08/24 23:40	1
Methylene Chloride	ND		5.0		ug/L			04/08/24 23:40	1
Naphthalene	ND		1.0		ug/L			04/08/24 23:40	1
n-Butylbenzene	ND		1.0		ug/L			04/08/24 23:40	1
N-Propylbenzene	ND		1.0		ug/L			04/08/24 23:40	1

Client Sample ID: PW-3R-12
Lab Sample ID: 240-202371-3
Date Collected: 04/03/24 09:55
Matrix: Water
Date Received: 04/06/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/08/24 23:40	1
Tetrachloroethene	ND		1.0		ug/L			04/08/24 23:40	1
Toluene	ND		1.0		ug/L			04/08/24 23:40	1
trans-1,2-Dichloroethene	**2.0**		1.0		ug/L			04/08/24 23:40	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/08/24 23:40	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/08/24 23:40	1
Trichloroethene	ND		1.0		ug/L			04/08/24 23:40	1
Trichlorofluoromethane	ND		1.0		ug/L			04/08/24 23:40	1
Vinyl chloride	**39**		1.0		ug/L			04/08/24 23:40	1
Xylenes, Total	ND		2.0		ug/L			04/08/24 23:40	1
1,2-Dibromoethane	ND		1.0		ug/L			04/08/24 23:40	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/08/24 23:40*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*78 - 122*		*04/08/24 23:40*	*1*
Dibromofluoromethane (Surr)	*98*		*73 - 120*		*04/08/24 23:40*	*1*
4-Bromofluorobenzene (Surr)	*85*		*56 - 136*		*04/08/24 23:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*		*04/08/24 23:40*	*1*

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**220**		4.0		ug/L		04/11/24 11:30	04/23/24 15:38	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*110*		*46 - 130*	*04/11/24 11:30*	*04/23/24 15:38*	*20*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202371-1

Client Sample ID: PW-1R-12
Date Collected: 04/03/24 12:00
Date Received: 04/06/24 08:00

Lab Sample ID: 240-202371-4
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 00:05	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/09/24 00:05	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 00:05	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/09/24 00:05	1
1,1-Dichloroethane	ND		1.0		ug/L			04/09/24 00:05	1
1,1-Dichloroethene	ND		1.0		ug/L			04/09/24 00:05	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/09/24 00:05	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/09/24 00:05	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/09/24 00:05	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/09/24 00:05	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/09/24 00:05	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/09/24 00:05	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/09/24 00:05	1
1,2-Dichloroethane	ND		1.0		ug/L			04/09/24 00:05	1
1,2-Dichloropropane	ND		1.0		ug/L			04/09/24 00:05	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/09/24 00:05	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/09/24 00:05	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/09/24 00:05	1
2-Butanone (MEK)	ND		10		ug/L			04/09/24 00:05	1
2-Hexanone	ND		10		ug/L			04/09/24 00:05	1
2-Methylnaphthalene	ND		5.0		ug/L			04/09/24 00:05	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/09/24 00:05	1
Acetone	ND		10		ug/L			04/09/24 00:05	1
Acrylonitrile	ND		20		ug/L			04/09/24 00:05	1
Benzene	ND		1.0		ug/L			04/09/24 00:05	1
Bromoform	ND		1.0		ug/L			04/09/24 00:05	1
Bromomethane	ND		1.0		ug/L			04/09/24 00:05	1
Carbon disulfide	ND		5.0		ug/L			04/09/24 00:05	1
Carbon tetrachloride	ND		1.0		ug/L			04/09/24 00:05	1
Chlorobenzene	ND		1.0		ug/L			04/09/24 00:05	1
Chlorodibromomethane	ND		1.0		ug/L			04/09/24 00:05	1
Chloroethane	ND		1.0		ug/L			04/09/24 00:05	1
Chloroform	ND		1.0		ug/L			04/09/24 00:05	1
Chloromethane	ND		1.0		ug/L			04/09/24 00:05	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 00:05	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 00:05	1
Dibromomethane	ND		1.0		ug/L			04/09/24 00:05	1
Chlorobromomethane	ND		1.0		ug/L			04/09/24 00:05	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/09/24 00:05	1
Dichlorobromomethane	ND		1.0		ug/L			04/09/24 00:05	1
Ethyl ether	**5.4**		1.0		ug/L			04/09/24 00:05	1
Ethylbenzene	ND		1.0		ug/L			04/09/24 00:05	1
Iodomethane	ND		1.0		ug/L			04/09/24 00:05	1
Isopropylbenzene	ND		1.0		ug/L			04/09/24 00:05	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/09/24 00:05	1
Methylene Chloride	ND		5.0		ug/L			04/09/24 00:05	1
Naphthalene	ND		1.0		ug/L			04/09/24 00:05	1
n-Butylbenzene	ND		1.0		ug/L			04/09/24 00:05	1
N-Propylbenzene	ND		1.0		ug/L			04/09/24 00:05	1

Client Sample ID: PW-1R-12
Lab Sample ID: 240-202371-4
Date Collected: 04/03/24 12:00
Matrix: Water
Date Received: 04/06/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/09/24 00:05	1
Tetrachloroethene	ND		1.0		ug/L			04/09/24 00:05	1
Toluene	ND		1.0		ug/L			04/09/24 00:05	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 00:05	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 00:05	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/09/24 00:05	1
Trichloroethene	ND		1.0		ug/L			04/09/24 00:05	1
Trichlorofluoromethane	ND		1.0		ug/L			04/09/24 00:05	1
Vinyl chloride	ND		1.0		ug/L			04/09/24 00:05	1
Xylenes, Total	ND		2.0		ug/L			04/09/24 00:05	1
1,2-Dibromoethane	ND		1.0		ug/L			04/09/24 00:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/09/24 00:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*78 - 122*		*04/09/24 00:05*	*1*
Dibromofluoromethane (Surr)	*101*		*73 - 120*		*04/09/24 00:05*	*1*
4-Bromofluorobenzene (Surr)	*87*		*56 - 136*		*04/09/24 00:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*62 - 137*		*04/09/24 00:05*	*1*

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**240**		4.0		ug/L		04/11/24 11:30	04/23/24 15:52	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*127*		*46 - 130*	*04/11/24 11:30*	*04/23/24 15:52*	*20*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202371-1

Client Sample ID: PW-2R-22
Date Collected: 04/03/24 15:00
Date Received: 04/06/24 08:00

Lab Sample ID: 240-202371-5
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 00:29	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/09/24 00:29	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 00:29	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/09/24 00:29	1
1,1-Dichloroethane	ND		1.0		ug/L			04/09/24 00:29	1
1,1-Dichloroethene	ND		1.0		ug/L			04/09/24 00:29	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/09/24 00:29	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/09/24 00:29	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/09/24 00:29	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/09/24 00:29	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/09/24 00:29	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/09/24 00:29	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/09/24 00:29	1
1,2-Dichloroethane	ND		1.0		ug/L			04/09/24 00:29	1
1,2-Dichloropropane	ND		1.0		ug/L			04/09/24 00:29	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/09/24 00:29	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/09/24 00:29	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/09/24 00:29	1
2-Butanone (MEK)	ND		10		ug/L			04/09/24 00:29	1
2-Hexanone	ND		10		ug/L			04/09/24 00:29	1
2-Methylnaphthalene	ND		5.0		ug/L			04/09/24 00:29	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/09/24 00:29	1
Acetone	ND		10		ug/L			04/09/24 00:29	1
Acrylonitrile	ND		20		ug/L			04/09/24 00:29	1
Benzene	ND		1.0		ug/L			04/09/24 00:29	1
Bromoform	ND		1.0		ug/L			04/09/24 00:29	1
Bromomethane	ND		1.0		ug/L			04/09/24 00:29	1
Carbon disulfide	ND		5.0		ug/L			04/09/24 00:29	1
Carbon tetrachloride	ND		1.0		ug/L			04/09/24 00:29	1
Chlorobenzene	ND		1.0		ug/L			04/09/24 00:29	1
Chlorodibromomethane	ND		1.0		ug/L			04/09/24 00:29	1
Chloroethane	ND		1.0		ug/L			04/09/24 00:29	1
Chloroform	ND		1.0		ug/L			04/09/24 00:29	1
Chloromethane	ND		1.0		ug/L			04/09/24 00:29	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 00:29	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 00:29	1
Dibromomethane	ND		1.0		ug/L			04/09/24 00:29	1
Chlorobromomethane	ND		1.0		ug/L			04/09/24 00:29	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/09/24 00:29	1
Dichlorobromomethane	ND		1.0		ug/L			04/09/24 00:29	1
Ethyl ether	**1.7**		1.0		ug/L			04/09/24 00:29	1
Ethylbenzene	ND		1.0		ug/L			04/09/24 00:29	1
Iodomethane	ND		1.0		ug/L			04/09/24 00:29	1
Isopropylbenzene	ND		1.0		ug/L			04/09/24 00:29	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/09/24 00:29	1
Methylene Chloride	ND		5.0		ug/L			04/09/24 00:29	1
Naphthalene	ND		1.0		ug/L			04/09/24 00:29	1
n-Butylbenzene	ND		1.0		ug/L			04/09/24 00:29	1
N-Propylbenzene	ND		1.0		ug/L			04/09/24 00:29	1

Client Sample ID: PW-2R-22
Lab Sample ID: 240-202371-5
Date Collected: 04/03/24 15:00
Matrix: Water
Date Received: 04/06/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/09/24 00:29	1
Tetrachloroethene	ND		1.0		ug/L			04/09/24 00:29	1
Toluene	ND		1.0		ug/L			04/09/24 00:29	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 00:29	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 00:29	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/09/24 00:29	1
Trichloroethene	ND		1.0		ug/L			04/09/24 00:29	1
Trichlorofluoromethane	ND		1.0		ug/L			04/09/24 00:29	1
Vinyl chloride	**1.4**		1.0		ug/L			04/09/24 00:29	1
Xylenes, Total	ND		2.0		ug/L			04/09/24 00:29	1
1,2-Dibromoethane	ND		1.0		ug/L			04/09/24 00:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/09/24 00:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*78 - 122*		*04/09/24 00:29*	*1*
Dibromofluoromethane (Surr)	*101*		*73 - 120*		*04/09/24 00:29*	*1*
4-Bromofluorobenzene (Surr)	*87*		*56 - 136*		*04/09/24 00:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*62 - 137*		*04/09/24 00:29*	*1*

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**22**		0.40		ug/L		04/11/24 11:30	04/23/24 16:05	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*94*		*46 - 130*	*04/11/24 11:30*	*04/23/24 16:05*	*2*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202371-1

Client Sample ID: W-90-92
Date Collected: 04/03/24 16:00
Date Received: 04/06/24 08:00

Lab Sample ID: 240-202371-6
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 00:54	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/09/24 00:54	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 00:54	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/09/24 00:54	1
1,1-Dichloroethane	ND		1.0		ug/L			04/09/24 00:54	1
1,1-Dichloroethene	ND		1.0		ug/L			04/09/24 00:54	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/09/24 00:54	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/09/24 00:54	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/09/24 00:54	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/09/24 00:54	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/09/24 00:54	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/09/24 00:54	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/09/24 00:54	1
1,2-Dichloroethane	ND		1.0		ug/L			04/09/24 00:54	1
1,2-Dichloropropane	ND		1.0		ug/L			04/09/24 00:54	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/09/24 00:54	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/09/24 00:54	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/09/24 00:54	1
2-Butanone (MEK)	ND		10		ug/L			04/09/24 00:54	1
2-Hexanone	ND		10		ug/L			04/09/24 00:54	1
2-Methylnaphthalene	ND		5.0		ug/L			04/09/24 00:54	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/09/24 00:54	1
Acetone	ND		10		ug/L			04/09/24 00:54	1
Acrylonitrile	ND		20		ug/L			04/09/24 00:54	1
Benzene	ND		1.0		ug/L			04/09/24 00:54	1
Bromoform	ND		1.0		ug/L			04/09/24 00:54	1
Bromomethane	ND		1.0		ug/L			04/09/24 00:54	1
Carbon disulfide	ND		5.0		ug/L			04/09/24 00:54	1
Carbon tetrachloride	ND		1.0		ug/L			04/09/24 00:54	1
Chlorobenzene	ND		1.0		ug/L			04/09/24 00:54	1
Chlorodibromomethane	ND		1.0		ug/L			04/09/24 00:54	1
Chloroethane	ND		1.0		ug/L			04/09/24 00:54	1
Chloroform	ND		1.0		ug/L			04/09/24 00:54	1
Chloromethane	ND		1.0		ug/L			04/09/24 00:54	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 00:54	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 00:54	1
Dibromomethane	ND		1.0		ug/L			04/09/24 00:54	1
Chlorobromomethane	ND		1.0		ug/L			04/09/24 00:54	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/09/24 00:54	1
Dichlorobromomethane	ND		1.0		ug/L			04/09/24 00:54	1
Ethyl ether	ND		1.0		ug/L			04/09/24 00:54	1
Ethylbenzene	ND		1.0		ug/L			04/09/24 00:54	1
Iodomethane	ND		1.0		ug/L			04/09/24 00:54	1
Isopropylbenzene	ND		1.0		ug/L			04/09/24 00:54	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/09/24 00:54	1
Methylene Chloride	ND		5.0		ug/L			04/09/24 00:54	1
Naphthalene	ND		1.0		ug/L			04/09/24 00:54	1
n-Butylbenzene	ND		1.0		ug/L			04/09/24 00:54	1
N-Propylbenzene	ND		1.0		ug/L			04/09/24 00:54	1

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-90-92
Lab Sample ID: 240-202371-6
Date Collected: 04/03/24 16:00
Matrix: Water
Date Received: 04/06/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/09/24 00:54	1
Tetrachloroethene	ND		1.0		ug/L			04/09/24 00:54	1
Toluene	ND		1.0		ug/L			04/09/24 00:54	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 00:54	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 00:54	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/09/24 00:54	1
Trichloroethene	ND		1.0		ug/L			04/09/24 00:54	1
Trichlorofluoromethane	ND		1.0		ug/L			04/09/24 00:54	1
Vinyl chloride	**1.3**		1.0		ug/L			04/09/24 00:54	1
Xylenes, Total	ND		2.0		ug/L			04/09/24 00:54	1
1,2-Dibromoethane	ND		1.0		ug/L			04/09/24 00:54	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/09/24 00:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*78 - 122*		*04/09/24 00:54*	*1*
Dibromofluoromethane (Surr)	*101*		*73 - 120*		*04/09/24 00:54*	*1*
4-Bromofluorobenzene (Surr)	*83*		*56 - 136*		*04/09/24 00:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*62 - 137*		*04/09/24 00:54*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202371-1

Client Sample ID: W-92-92
Date Collected: 04/04/24 13:50
Date Received: 04/06/24 08:00

Lab Sample ID: 240-202371-7
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 01:18	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/09/24 01:18	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 01:18	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/09/24 01:18	1
1,1-Dichloroethane	ND		1.0		ug/L			04/09/24 01:18	1
1,1-Dichloroethene	ND		1.0		ug/L			04/09/24 01:18	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/09/24 01:18	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/09/24 01:18	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/09/24 01:18	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/09/24 01:18	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/09/24 01:18	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/09/24 01:18	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/09/24 01:18	1
1,2-Dichloroethane	ND		1.0		ug/L			04/09/24 01:18	1
1,2-Dichloropropane	ND		1.0		ug/L			04/09/24 01:18	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/09/24 01:18	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/09/24 01:18	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/09/24 01:18	1
2-Butanone (MEK)	ND		10		ug/L			04/09/24 01:18	1
2-Hexanone	ND		10		ug/L			04/09/24 01:18	1
2-Methylnaphthalene	ND		5.0		ug/L			04/09/24 01:18	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/09/24 01:18	1
Acetone	ND		10		ug/L			04/09/24 01:18	1
Acrylonitrile	ND		20		ug/L			04/09/24 01:18	1
Benzene	ND		1.0		ug/L			04/09/24 01:18	1
Bromoform	ND		1.0		ug/L			04/09/24 01:18	1
Bromomethane	ND		1.0		ug/L			04/09/24 01:18	1
Carbon disulfide	ND		5.0		ug/L			04/09/24 01:18	1
Carbon tetrachloride	ND		1.0		ug/L			04/09/24 01:18	1
Chlorobenzene	ND		1.0		ug/L			04/09/24 01:18	1
Chlorodibromomethane	ND		1.0		ug/L			04/09/24 01:18	1
Chloroethane	ND		1.0		ug/L			04/09/24 01:18	1
Chloroform	ND		1.0		ug/L			04/09/24 01:18	1
Chloromethane	ND		1.0		ug/L			04/09/24 01:18	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 01:18	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 01:18	1
Dibromomethane	ND		1.0		ug/L			04/09/24 01:18	1
Chlorobromomethane	ND		1.0		ug/L			04/09/24 01:18	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/09/24 01:18	1
Dichlorobromomethane	ND		1.0		ug/L			04/09/24 01:18	1
Ethyl ether	ND		1.0		ug/L			04/09/24 01:18	1
Ethylbenzene	ND		1.0		ug/L			04/09/24 01:18	1
Iodomethane	ND		1.0		ug/L			04/09/24 01:18	1
Isopropylbenzene	ND		1.0		ug/L			04/09/24 01:18	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/09/24 01:18	1
Methylene Chloride	ND		5.0		ug/L			04/09/24 01:18	1
Naphthalene	ND		1.0		ug/L			04/09/24 01:18	1
n-Butylbenzene	ND		1.0		ug/L			04/09/24 01:18	1
N-Propylbenzene	ND		1.0		ug/L			04/09/24 01:18	1

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-92-92
Lab Sample ID: 240-202371-7
Date Collected: 04/04/24 13:50
Matrix: Water
Date Received: 04/06/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/09/24 01:18	1
Tetrachloroethene	ND		1.0		ug/L			04/09/24 01:18	1
Toluene	ND		1.0		ug/L			04/09/24 01:18	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 01:18	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 01:18	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/09/24 01:18	1
Trichloroethene	ND		1.0		ug/L			04/09/24 01:18	1
Trichlorofluoromethane	ND		1.0		ug/L			04/09/24 01:18	1
Vinyl chloride	ND		1.0		ug/L			04/09/24 01:18	1
Xylenes, Total	ND		2.0		ug/L			04/09/24 01:18	1
1,2-Dibromoethane	ND		1.0		ug/L			04/09/24 01:18	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/09/24 01:18*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*78 - 122*		*04/09/24 01:18*	*1*
Dibromofluoromethane (Surr)	*102*		*73 - 120*		*04/09/24 01:18*	*1*
4-Bromofluorobenzene (Surr)	*86*		*56 - 136*		*04/09/24 01:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*62 - 137*		*04/09/24 01:18*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202371-1

Client Sample ID: W-96-92
Date Collected: 04/04/24 15:10
Date Received: 04/06/24 08:00

Lab Sample ID: 240-202371-8
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 01:43	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/09/24 01:43	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 01:43	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/09/24 01:43	1
1,1-Dichloroethane	ND		1.0		ug/L			04/09/24 01:43	1
1,1-Dichloroethene	ND		1.0		ug/L			04/09/24 01:43	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/09/24 01:43	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/09/24 01:43	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/09/24 01:43	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/09/24 01:43	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/09/24 01:43	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/09/24 01:43	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/09/24 01:43	1
1,2-Dichloroethane	ND		1.0		ug/L			04/09/24 01:43	1
1,2-Dichloropropane	ND		1.0		ug/L			04/09/24 01:43	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/09/24 01:43	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/09/24 01:43	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/09/24 01:43	1
2-Butanone (MEK)	ND		10		ug/L			04/09/24 01:43	1
2-Hexanone	ND		10		ug/L			04/09/24 01:43	1
2-Methylnaphthalene	ND		5.0		ug/L			04/09/24 01:43	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/09/24 01:43	1
Acetone	ND		10		ug/L			04/09/24 01:43	1
Acrylonitrile	ND		20		ug/L			04/09/24 01:43	1
Benzene	ND		1.0		ug/L			04/09/24 01:43	1
Bromoform	ND		1.0		ug/L			04/09/24 01:43	1
Bromomethane	ND		1.0		ug/L			04/09/24 01:43	1
Carbon disulfide	ND		5.0		ug/L			04/09/24 01:43	1
Carbon tetrachloride	ND		1.0		ug/L			04/09/24 01:43	1
Chlorobenzene	ND		1.0		ug/L			04/09/24 01:43	1
Chlorodibromomethane	ND		1.0		ug/L			04/09/24 01:43	1
Chloroethane	ND		1.0		ug/L			04/09/24 01:43	1
Chloroform	ND		1.0		ug/L			04/09/24 01:43	1
Chloromethane	ND		1.0		ug/L			04/09/24 01:43	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 01:43	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 01:43	1
Dibromomethane	ND		1.0		ug/L			04/09/24 01:43	1
Chlorobromomethane	ND		1.0		ug/L			04/09/24 01:43	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/09/24 01:43	1
Dichlorobromomethane	ND		1.0		ug/L			04/09/24 01:43	1
Ethyl ether	ND		1.0		ug/L			04/09/24 01:43	1
Ethylbenzene	ND		1.0		ug/L			04/09/24 01:43	1
Iodomethane	ND		1.0		ug/L			04/09/24 01:43	1
Isopropylbenzene	ND		1.0		ug/L			04/09/24 01:43	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/09/24 01:43	1
Methylene Chloride	ND		5.0		ug/L			04/09/24 01:43	1
Naphthalene	ND		1.0		ug/L			04/09/24 01:43	1
n-Butylbenzene	ND		1.0		ug/L			04/09/24 01:43	1
N-Propylbenzene	ND		1.0		ug/L			04/09/24 01:43	1

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-96-92
Lab Sample ID: 240-202371-8
Date Collected: 04/04/24 15:10
Matrix: Water
Date Received: 04/06/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/09/24 01:43	1
Tetrachloroethene	ND		1.0		ug/L			04/09/24 01:43	1
Toluene	ND		1.0		ug/L			04/09/24 01:43	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 01:43	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 01:43	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/09/24 01:43	1
Trichloroethene	ND		1.0		ug/L			04/09/24 01:43	1
Trichlorofluoromethane	ND		1.0		ug/L			04/09/24 01:43	1
Vinyl chloride	ND		1.0		ug/L			04/09/24 01:43	1
Xylenes, Total	ND		2.0		ug/L			04/09/24 01:43	1
1,2-Dibromoethane	ND		1.0		ug/L			04/09/24 01:43	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/09/24 01:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*78 - 122*		*04/09/24 01:43*	*1*
Dibromofluoromethane (Surr)	*102*		*73 - 120*		*04/09/24 01:43*	*1*
4-Bromofluorobenzene (Surr)	*83*		*56 - 136*		*04/09/24 01:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*62 - 137*		*04/09/24 01:43*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202371-1

Client Sample ID: W-47-89
Date Collected: 04/04/24 18:10
Date Received: 04/06/24 08:00

Lab Sample ID: 240-202371-9
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 02:08	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/09/24 02:08	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 02:08	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/09/24 02:08	1
1,1-Dichloroethane	ND		1.0		ug/L			04/09/24 02:08	1
1,1-Dichloroethene	ND		1.0		ug/L			04/09/24 02:08	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/09/24 02:08	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/09/24 02:08	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/09/24 02:08	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/09/24 02:08	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/09/24 02:08	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/09/24 02:08	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/09/24 02:08	1
1,2-Dichloroethane	ND		1.0		ug/L			04/09/24 02:08	1
1,2-Dichloropropane	ND		1.0		ug/L			04/09/24 02:08	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/09/24 02:08	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/09/24 02:08	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/09/24 02:08	1
2-Butanone (MEK)	ND		10		ug/L			04/09/24 02:08	1
2-Hexanone	ND		10		ug/L			04/09/24 02:08	1
2-Methylnaphthalene	ND		5.0		ug/L			04/09/24 02:08	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/09/24 02:08	1
Acetone	ND		10		ug/L			04/09/24 02:08	1
Acrylonitrile	ND		20		ug/L			04/09/24 02:08	1
Benzene	ND		1.0		ug/L			04/09/24 02:08	1
Bromoform	ND		1.0		ug/L			04/09/24 02:08	1
Bromomethane	ND		1.0		ug/L			04/09/24 02:08	1
Carbon disulfide	ND		5.0		ug/L			04/09/24 02:08	1
Carbon tetrachloride	ND		1.0		ug/L			04/09/24 02:08	1
Chlorobenzene	ND		1.0		ug/L			04/09/24 02:08	1
Chlorodibromomethane	ND		1.0		ug/L			04/09/24 02:08	1
Chloroethane	ND		1.0		ug/L			04/09/24 02:08	1
Chloroform	ND		1.0		ug/L			04/09/24 02:08	1
Chloromethane	ND		1.0		ug/L			04/09/24 02:08	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 02:08	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 02:08	1
Dibromomethane	ND		1.0		ug/L			04/09/24 02:08	1
Chlorobromomethane	ND		1.0		ug/L			04/09/24 02:08	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/09/24 02:08	1
Dichlorobromomethane	ND		1.0		ug/L			04/09/24 02:08	1
Ethyl ether	ND		1.0		ug/L			04/09/24 02:08	1
Ethylbenzene	ND		1.0		ug/L			04/09/24 02:08	1
Iodomethane	ND		1.0		ug/L			04/09/24 02:08	1
Isopropylbenzene	ND		1.0		ug/L			04/09/24 02:08	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/09/24 02:08	1
Methylene Chloride	ND		5.0		ug/L			04/09/24 02:08	1
Naphthalene	ND		1.0		ug/L			04/09/24 02:08	1
n-Butylbenzene	ND		1.0		ug/L			04/09/24 02:08	1
N-Propylbenzene	ND		1.0		ug/L			04/09/24 02:08	1

Client Sample ID: W-47-89
Lab Sample ID: 240-202371-9
Date Collected: 04/04/24 18:10
Matrix: Water
Date Received: 04/06/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/09/24 02:08	1
Tetrachloroethene	ND		1.0		ug/L			04/09/24 02:08	1
Toluene	ND		1.0		ug/L			04/09/24 02:08	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 02:08	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 02:08	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/09/24 02:08	1
Trichloroethene	ND		1.0		ug/L			04/09/24 02:08	1
Trichlorofluoromethane	ND		1.0		ug/L			04/09/24 02:08	1
Vinyl chloride	ND		1.0		ug/L			04/09/24 02:08	1
Xylenes, Total	ND		2.0		ug/L			04/09/24 02:08	1
1,2-Dibromoethane	ND		1.0		ug/L			04/09/24 02:08	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/09/24 02:08*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*78 - 122*		*04/09/24 02:08*	*1*
Dibromofluoromethane (Surr)	*102*		*73 - 120*		*04/09/24 02:08*	*1*
4-Bromofluorobenzene (Surr)	*85*		*56 - 136*		*04/09/24 02:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*		*04/09/24 02:08*	*1*

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		04/11/24 11:30	04/19/24 16:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*93*		*46 - 130*	*04/11/24 11:30*	*04/19/24 16:26*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202371-1

Client Sample ID: W-100-93
Date Collected: 04/05/24 09:53
Date Received: 04/06/24 08:00

Lab Sample ID: 240-202371-10
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 02:33	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/09/24 02:33	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 02:33	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/09/24 02:33	1
1,1-Dichloroethane	ND		1.0		ug/L			04/09/24 02:33	1
1,1-Dichloroethene	ND		1.0		ug/L			04/09/24 02:33	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/09/24 02:33	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/09/24 02:33	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/09/24 02:33	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/09/24 02:33	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/09/24 02:33	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/09/24 02:33	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/09/24 02:33	1
1,2-Dichloroethane	ND		1.0		ug/L			04/09/24 02:33	1
1,2-Dichloropropane	ND		1.0		ug/L			04/09/24 02:33	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/09/24 02:33	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/09/24 02:33	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/09/24 02:33	1
2-Butanone (MEK)	ND		10		ug/L			04/09/24 02:33	1
2-Hexanone	ND		10		ug/L			04/09/24 02:33	1
2-Methylnaphthalene	ND		5.0		ug/L			04/09/24 02:33	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/09/24 02:33	1
Acetone	ND		10		ug/L			04/09/24 02:33	1
Acrylonitrile	ND		20		ug/L			04/09/24 02:33	1
Benzene	ND		1.0		ug/L			04/09/24 02:33	1
Bromoform	ND		1.0		ug/L			04/09/24 02:33	1
Bromomethane	ND		1.0		ug/L			04/09/24 02:33	1
Carbon disulfide	ND		5.0		ug/L			04/09/24 02:33	1
Carbon tetrachloride	ND		1.0		ug/L			04/09/24 02:33	1
Chlorobenzene	ND		1.0		ug/L			04/09/24 02:33	1
Chlorodibromomethane	ND		1.0		ug/L			04/09/24 02:33	1
Chloroethane	ND		1.0		ug/L			04/09/24 02:33	1
Chloroform	ND		1.0		ug/L			04/09/24 02:33	1
Chloromethane	ND		1.0		ug/L			04/09/24 02:33	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 02:33	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 02:33	1
Dibromomethane	ND		1.0		ug/L			04/09/24 02:33	1
Chlorobromomethane	ND		1.0		ug/L			04/09/24 02:33	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/09/24 02:33	1
Dichlorobromomethane	ND		1.0		ug/L			04/09/24 02:33	1
Ethyl ether	ND		1.0		ug/L			04/09/24 02:33	1
Ethylbenzene	ND		1.0		ug/L			04/09/24 02:33	1
Iodomethane	ND		1.0		ug/L			04/09/24 02:33	1
Isopropylbenzene	ND		1.0		ug/L			04/09/24 02:33	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/09/24 02:33	1
Methylene Chloride	ND		5.0		ug/L			04/09/24 02:33	1
Naphthalene	ND		1.0		ug/L			04/09/24 02:33	1
n-Butylbenzene	ND		1.0		ug/L			04/09/24 02:33	1
N-Propylbenzene	ND		1.0		ug/L			04/09/24 02:33	1

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-100-93
Lab Sample ID: 240-202371-10
Date Collected: 04/05/24 09:53
Matrix: Water
Date Received: 04/06/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/09/24 02:33	1
Tetrachloroethene	ND		1.0		ug/L			04/09/24 02:33	1
Toluene	ND		1.0		ug/L			04/09/24 02:33	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 02:33	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 02:33	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/09/24 02:33	1
Trichloroethene	ND		1.0		ug/L			04/09/24 02:33	1
Trichlorofluoromethane	ND		1.0		ug/L			04/09/24 02:33	1
Vinyl chloride	**3.4**		1.0		ug/L			04/09/24 02:33	1
Xylenes, Total	ND		2.0		ug/L			04/09/24 02:33	1
1,2-Dibromoethane	ND		1.0		ug/L			04/09/24 02:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/09/24 02:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*78 - 122*		*04/09/24 02:33*	*1*
Dibromofluoromethane (Surr)	*106*		*73 - 120*		*04/09/24 02:33*	*1*
4-Bromofluorobenzene (Surr)	*81*		*56 - 136*		*04/09/24 02:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*62 - 137*		*04/09/24 02:33*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202371-1

Client Sample ID: W-94-92
Date Collected: 04/05/24 11:03
Date Received: 04/06/24 08:00

Lab Sample ID: 240-202371-11
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 02:58	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/09/24 02:58	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 02:58	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/09/24 02:58	1
1,1-Dichloroethane	ND		1.0		ug/L			04/09/24 02:58	1
1,1-Dichloroethene	ND		1.0		ug/L			04/09/24 02:58	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/09/24 02:58	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/09/24 02:58	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/09/24 02:58	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/09/24 02:58	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/09/24 02:58	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/09/24 02:58	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/09/24 02:58	1
1,2-Dichloroethane	ND		1.0		ug/L			04/09/24 02:58	1
1,2-Dichloropropane	ND		1.0		ug/L			04/09/24 02:58	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/09/24 02:58	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/09/24 02:58	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/09/24 02:58	1
2-Butanone (MEK)	ND		10		ug/L			04/09/24 02:58	1
2-Hexanone	ND		10		ug/L			04/09/24 02:58	1
2-Methylnaphthalene	ND		5.0		ug/L			04/09/24 02:58	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/09/24 02:58	1
Acetone	ND		10		ug/L			04/09/24 02:58	1
Acrylonitrile	ND		20		ug/L			04/09/24 02:58	1
Benzene	ND		1.0		ug/L			04/09/24 02:58	1
Bromoform	ND		1.0		ug/L			04/09/24 02:58	1
Bromomethane	ND		1.0		ug/L			04/09/24 02:58	1
Carbon disulfide	ND		5.0		ug/L			04/09/24 02:58	1
Carbon tetrachloride	ND		1.0		ug/L			04/09/24 02:58	1
Chlorobenzene	ND		1.0		ug/L			04/09/24 02:58	1
Chlorodibromomethane	ND		1.0		ug/L			04/09/24 02:58	1
Chloroethane	ND		1.0		ug/L			04/09/24 02:58	1
Chloroform	ND		1.0		ug/L			04/09/24 02:58	1
Chloromethane	ND		1.0		ug/L			04/09/24 02:58	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 02:58	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 02:58	1
Dibromomethane	ND		1.0		ug/L			04/09/24 02:58	1
Chlorobromomethane	ND		1.0		ug/L			04/09/24 02:58	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/09/24 02:58	1
Dichlorobromomethane	ND		1.0		ug/L			04/09/24 02:58	1
Ethyl ether	ND		1.0		ug/L			04/09/24 02:58	1
Ethylbenzene	ND		1.0		ug/L			04/09/24 02:58	1
Iodomethane	ND		1.0		ug/L			04/09/24 02:58	1
Isopropylbenzene	ND		1.0		ug/L			04/09/24 02:58	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/09/24 02:58	1
Methylene Chloride	ND		5.0		ug/L			04/09/24 02:58	1
Naphthalene	ND		1.0		ug/L			04/09/24 02:58	1
n-Butylbenzene	ND		1.0		ug/L			04/09/24 02:58	1
N-Propylbenzene	ND		1.0		ug/L			04/09/24 02:58	1

Client Sample ID: W-94-92
Lab Sample ID: 240-202371-11
Date Collected: 04/05/24 11:03
Matrix: Water
Date Received: 04/06/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/09/24 02:58	1
Tetrachloroethene	ND		1.0		ug/L			04/09/24 02:58	1
Toluene	ND		1.0		ug/L			04/09/24 02:58	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 02:58	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 02:58	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/09/24 02:58	1
Trichloroethene	ND		1.0		ug/L			04/09/24 02:58	1
Trichlorofluoromethane	ND		1.0		ug/L			04/09/24 02:58	1
Vinyl chloride	ND		1.0		ug/L			04/09/24 02:58	1
Xylenes, Total	ND		2.0		ug/L			04/09/24 02:58	1
1,2-Dibromoethane	ND		1.0		ug/L			04/09/24 02:58	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/09/24 02:58*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*78 - 122*		*04/09/24 02:58*	*1*
Dibromofluoromethane (Surr)	*103*		*73 - 120*		*04/09/24 02:58*	*1*
4-Bromofluorobenzene (Surr)	*83*		*56 - 136*		*04/09/24 02:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*62 - 137*		*04/09/24 02:58*	*1*

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-68-90
Lab Sample ID: 240-202371-12
Date Collected: 04/04/24 12:05
Matrix: Water
Date Received: 04/06/24 08:00

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	13		0.20		ug/L		04/11/24 11:30	04/19/24 16:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*85*		*46 - 130*	*04/11/24 11:30*	*04/19/24 16:40*	*1*

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-48-89
Lab Sample ID: 240-202371-13
Date Collected: 04/04/24 17:30
Matrix: Water
Date Received: 04/06/24 08:00

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	120		2.0		ug/L		04/11/24 11:30	04/23/24 16:19	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*96*		*46 - 130*	*04/11/24 11:30*	*04/23/24 16:19*	*10*

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-108-20
Lab Sample ID: 240-202371-14
Date Collected: 04/04/24 16:25
Matrix: Water
Date Received: 04/06/24 08:00

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.22		0.20		ug/L		04/11/24 11:30	04/19/24 17:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*80*		*46 - 130*	*04/11/24 11:30*	*04/19/24 17:07*	*1*

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-107-20
Lab Sample ID: 240-202371-15
Date Collected: 04/04/24 11:20
Matrix: Water
Date Received: 04/06/24 08:00

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		04/11/24 11:30	04/19/24 17:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*104*		*46 - 130*	*04/11/24 11:30*	*04/19/24 17:35*	*1*

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-106-20
Lab Sample ID: 240-202371-16
Date Collected: 04/04/24 12:55
Matrix: Water
Date Received: 04/06/24 08:00

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.3		0.20		ug/L		04/11/24 11:30	04/19/24 17:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*86*		*46 - 130*	*04/11/24 11:30*	*04/19/24 17:48*	*1*

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-105-20
Lab Sample ID: 240-202371-17
Date Collected: 04/04/24 10:05
Matrix: Water
Date Received: 04/06/24 08:00

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		04/11/24 11:30	04/19/24 18:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*95*		*46 - 130*	*04/11/24 11:30*	*04/19/24 18:02*	*1*

Surrogate Summary

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DBFM	BFB	DCA
Lab Sample ID	Client Sample ID	(78-122)	(73-120)	(56-136)	(62-137)
240-202371-1	W-99-93	97	100	88	102
240-202371-2	W-88-92	98	98	86	100
240-202371-2 - RA	W-88-92	99	98	91	100
240-202371-3	PW-3R-12	97	98	85	100
240-202371-4	PW-1R-12	99	101	87	104
240-202371-5	PW-2R-22	98	101	87	103
240-202371-6	W-90-92	97	101	83	106
240-202371-7	W-92-92	97	102	86	106
240-202371-8	W-96-92	97	102	83	107
240-202371-9	W-47-89	98	102	85	105
240-202371-10	W-100-93	97	106	81	106
240-202371-11	W-94-92	94	103	83	108
LCS 240-608811/4	Lab Control Sample	103	91	98	93
LCS 240-608811/5	Lab Control Sample	96	95	93	95
LCS 240-608891/4	Lab Control Sample	102	89	97	91
LCS 240-608891/5	Lab Control Sample	95	91	93	93
MB 240-608811/7	Method Blank	97	95	89	99
MB 240-608891/7	Method Blank	99	96	88	100

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DXE
Lab Sample ID	Client Sample ID	(46-130)
240-202371-3	PW-3R-12	110
240-202371-4	PW-1R-12	127
240-202371-5	PW-2R-22	94
240-202371-9	W-47-89	93
240-202371-12	W-68-90	85
240-202371-13	W-48-89	96
240-202371-14	W-108-20	80
240-202371-15	W-107-20	104
240-202371-16	W-106-20	86
240-202371-17	W-105-20	95
LCS 200-202912/2-A	Lab Control Sample	85
LCSD 200-202912/3-A	Lab Control Sample Dup	85
MB 200-202912/1-A	Method Blank	97

Surrogate Legend

DXE = 1,4-Dioxane-d8 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-608811/7
Matrix: Water
Analysis Batch: 608811

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/08/24 22:26	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/08/24 22:26	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/08/24 22:26	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/08/24 22:26	1
1,1-Dichloroethane	ND		1.0		ug/L			04/08/24 22:26	1
1,1-Dichloroethene	ND		1.0		ug/L			04/08/24 22:26	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/08/24 22:26	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/08/24 22:26	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/08/24 22:26	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/08/24 22:26	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/08/24 22:26	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/08/24 22:26	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/08/24 22:26	1
1,2-Dichloroethane	ND		1.0		ug/L			04/08/24 22:26	1
1,2-Dichloropropane	ND		1.0		ug/L			04/08/24 22:26	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/08/24 22:26	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/08/24 22:26	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/08/24 22:26	1
2-Butanone (MEK)	ND		10		ug/L			04/08/24 22:26	1
2-Hexanone	ND		10		ug/L			04/08/24 22:26	1
2-Methylnaphthalene	ND		5.0		ug/L			04/08/24 22:26	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/08/24 22:26	1
Acetone	ND		10		ug/L			04/08/24 22:26	1
Acrylonitrile	ND		20		ug/L			04/08/24 22:26	1
Benzene	ND		1.0		ug/L			04/08/24 22:26	1
Bromoform	ND		1.0		ug/L			04/08/24 22:26	1
Bromomethane	ND		1.0		ug/L			04/08/24 22:26	1
Carbon disulfide	ND		5.0		ug/L			04/08/24 22:26	1
Carbon tetrachloride	ND		1.0		ug/L			04/08/24 22:26	1
Chlorobenzene	ND		1.0		ug/L			04/08/24 22:26	1
Chlorodibromomethane	ND		1.0		ug/L			04/08/24 22:26	1
Chloroethane	ND		1.0		ug/L			04/08/24 22:26	1
Chloroform	ND		1.0		ug/L			04/08/24 22:26	1
Chloromethane	ND		1.0		ug/L			04/08/24 22:26	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/08/24 22:26	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/08/24 22:26	1
Dibromomethane	ND		1.0		ug/L			04/08/24 22:26	1
Chlorobromomethane	ND		1.0		ug/L			04/08/24 22:26	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/08/24 22:26	1
Dichlorobromomethane	ND		1.0		ug/L			04/08/24 22:26	1
Ethyl ether	ND		1.0		ug/L			04/08/24 22:26	1
Ethylbenzene	ND		1.0		ug/L			04/08/24 22:26	1
Iodomethane	ND		1.0		ug/L			04/08/24 22:26	1
Isopropylbenzene	ND		1.0		ug/L			04/08/24 22:26	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/08/24 22:26	1
Methylene Chloride	ND		5.0		ug/L			04/08/24 22:26	1
Naphthalene	ND		1.0		ug/L			04/08/24 22:26	1
n-Butylbenzene	ND		1.0		ug/L			04/08/24 22:26	1

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

Lab Sample ID: MB 240-608811/7
Matrix: Water
Analysis Batch: 608811

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		1.0		ug/L			04/08/24 22:26	1
Styrene	ND		1.0		ug/L			04/08/24 22:26	1
Tetrachloroethene	ND		1.0		ug/L			04/08/24 22:26	1
Toluene	ND		1.0		ug/L			04/08/24 22:26	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/08/24 22:26	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/08/24 22:26	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/08/24 22:26	1
Trichloroethene	ND		1.0		ug/L			04/08/24 22:26	1
Trichlorofluoromethane	ND		1.0		ug/L			04/08/24 22:26	1
Vinyl chloride	ND		1.0		ug/L			04/08/24 22:26	1
Xylenes, Total	ND		2.0		ug/L			04/08/24 22:26	1
1,2-Dibromoethane	ND		1.0		ug/L			04/08/24 22:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*78 - 122*		*04/08/24 22:26*	*1*
Dibromofluoromethane (Surr)	*95*		*73 - 120*		*04/08/24 22:26*	*1*
4-Bromofluorobenzene (Surr)	*89*		*56 - 136*		*04/08/24 22:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*62 - 137*		*04/08/24 22:26*	*1*

Lab Sample ID: LCS 240-608811/4
Matrix: Water
Analysis Batch: 608811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	25.0	24.3		ug/L		97	71 - 124
1,1,1-Trichloroethane	25.0	22.7		ug/L		91	64 - 131
1,1,2,2-Tetrachloroethane	25.0	20.7		ug/L		83	58 - 157
1,1,2-Trichloroethane	25.0	24.0		ug/L		96	70 - 138
1,1-Dichloroethane	25.0	23.6		ug/L		94	72 - 127
1,1-Dichloroethene	25.0	19.8		ug/L		79	63 - 134
1,2,3-Trichlorobenzene	25.0	24.3		ug/L		97	45 - 149
1,2,3-Trichloropropane	25.0	22.9		ug/L		91	57 - 150
1,2,4-Trichlorobenzene	25.0	23.2		ug/L		93	44 - 147
1,2,4-Trimethylbenzene	25.0	22.3		ug/L		89	77 - 129
1,2-Dibromo-3-Chloropropane	25.0	21.0		ug/L		84	53 - 135
1,2-Dichlorobenzene	25.0	23.3		ug/L		93	78 - 120
1,2-Dichloroethane	25.0	22.3		ug/L		89	66 - 128
1,2-Dichloropropane	25.0	24.6		ug/L		98	75 - 133
1,3,5-Trimethylbenzene	25.0	22.5		ug/L		90	75 - 129
1,3-Dichlorobenzene	25.0	23.3		ug/L		93	80 - 120
1,4-Dichlorobenzene	25.0	22.9		ug/L		92	80 - 120
2-Butanone (MEK)	50.0	47.7		ug/L		95	54 - 156
2-Hexanone	50.0	52.3		ug/L		105	43 - 167
4-Methyl-2-pentanone (MIBK)	50.0	47.9		ug/L		96	46 - 158
Acetone	50.0	45.7		ug/L		91	50 - 149
Acrylonitrile	250	258		ug/L		103	51 - 161
Benzene	25.0	21.5		ug/L		86	77 - 123
Bromoform	25.0	24.5		ug/L		98	57 - 129

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

Lab Sample ID: LCS 240-608811/4
Matrix: Water
Analysis Batch: 608811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	12.5	9.67		ug/L		77	36 - 142
Carbon disulfide	25.0	20.5		ug/L		82	43 - 140
Carbon tetrachloride	25.0	23.3		ug/L		93	55 - 137
Chlorobenzene	25.0	23.3		ug/L		93	80 - 121
Chlorodibromomethane	25.0	23.6		ug/L		94	70 - 124
Chloroethane	12.5	11.2		ug/L		89	38 - 152
Chloroform	25.0	20.8		ug/L		83	74 - 122
Chloromethane	12.5	12.6		ug/L		101	47 - 143
cis-1,2-Dichloroethene	25.0	20.3		ug/L		81	77 - 123
cis-1,3-Dichloropropene	25.0	19.0		ug/L		76	64 - 130
Dibromomethane	25.0	21.1		ug/L		84	67 - 131
Chlorobromomethane	25.0	21.0		ug/L		84	71 - 121
Dichlorodifluoromethane	12.5	8.03		ug/L		64	34 - 153
Dichlorobromomethane	25.0	20.8		ug/L		83	69 - 126
Ethyl ether	25.0	24.3		ug/L		97	53 - 151
Ethylbenzene	25.0	23.9		ug/L		96	80 - 121
Iodomethane	25.0	20.6		ug/L		83	39 - 136
Isopropylbenzene	25.0	23.7		ug/L		95	74 - 128
Methyl tert-butyl ether	25.0	19.5		ug/L		78	65 - 126
Methylene Chloride	25.0	19.0		ug/L		76	71 - 125
Naphthalene	25.0	21.9		ug/L		88	53 - 138
n-Butylbenzene	25.0	22.4		ug/L		89	62 - 139
N-Propylbenzene	25.0	23.2		ug/L		93	76 - 127
Styrene	25.0	23.4		ug/L		94	80 - 135
Tetrachloroethene	25.0	25.3		ug/L		101	76 - 123
Toluene	25.0	23.1		ug/L		93	80 - 123
trans-1,2-Dichloroethene	25.0	21.1		ug/L		85	75 - 124
trans-1,3-Dichloropropene	25.0	22.5		ug/L		90	57 - 129
trans-1,4-Dichloro-2-butene	25.0	23.5		ug/L		94	14 - 173
Trichloroethene	25.0	21.2		ug/L		85	70 - 122
Trichlorofluoromethane	12.5	9.95		ug/L		80	30 - 170
Vinyl chloride	12.5	12.0		ug/L		96	60 - 144
Xylenes, Total	50.0	47.2		ug/L		94	80 - 121
1,2-Dibromoethane	25.0	22.9		ug/L		92	71 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*103*		*78 - 122*
Dibromofluoromethane (Surr)	*91*		*73 - 120*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*93*		*62 - 137*

Lab Sample ID: LCS 240-608811/5
Matrix: Water
Analysis Batch: 608811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*78 - 122*
Dibromofluoromethane (Surr)	*95*		*73 - 120*

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

Lab Sample ID: LCS 240-608811/5
Matrix: Water
Analysis Batch: 608811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*93*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*

Lab Sample ID: MB 240-608891/7
Matrix: Water
Analysis Batch: 608891

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 12:25	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/09/24 12:25	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/09/24 12:25	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/09/24 12:25	1
1,1-Dichloroethane	ND		1.0		ug/L			04/09/24 12:25	1
1,1-Dichloroethene	ND		1.0		ug/L			04/09/24 12:25	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/09/24 12:25	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/09/24 12:25	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/09/24 12:25	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/09/24 12:25	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/09/24 12:25	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/09/24 12:25	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/09/24 12:25	1
1,2-Dichloroethane	ND		1.0		ug/L			04/09/24 12:25	1
1,2-Dichloropropane	ND		1.0		ug/L			04/09/24 12:25	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/09/24 12:25	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/09/24 12:25	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/09/24 12:25	1
2-Butanone (MEK)	ND		10		ug/L			04/09/24 12:25	1
2-Hexanone	ND		10		ug/L			04/09/24 12:25	1
2-Methylnaphthalene	ND		5.0		ug/L			04/09/24 12:25	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/09/24 12:25	1
Acetone	ND		10		ug/L			04/09/24 12:25	1
Acrylonitrile	ND		20		ug/L			04/09/24 12:25	1
Benzene	ND		1.0		ug/L			04/09/24 12:25	1
Bromoform	ND		1.0		ug/L			04/09/24 12:25	1
Bromomethane	ND		1.0		ug/L			04/09/24 12:25	1
Carbon disulfide	ND		5.0		ug/L			04/09/24 12:25	1
Carbon tetrachloride	ND		1.0		ug/L			04/09/24 12:25	1
Chlorobenzene	ND		1.0		ug/L			04/09/24 12:25	1
Chlorodibromomethane	ND		1.0		ug/L			04/09/24 12:25	1
Chloroethane	ND		1.0		ug/L			04/09/24 12:25	1
Chloroform	ND		1.0		ug/L			04/09/24 12:25	1
Chloromethane	ND		1.0		ug/L			04/09/24 12:25	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 12:25	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 12:25	1
Dibromomethane	ND		1.0		ug/L			04/09/24 12:25	1
Chlorobromomethane	ND		1.0		ug/L			04/09/24 12:25	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/09/24 12:25	1
Dichlorobromomethane	ND		1.0		ug/L			04/09/24 12:25	1

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

Lab Sample ID: MB 240-608891/7
Matrix: Water
Analysis Batch: 608891

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethyl ether	ND		1.0		ug/L			04/09/24 12:25	1
Ethylbenzene	ND		1.0		ug/L			04/09/24 12:25	1
Iodomethane	ND		1.0		ug/L			04/09/24 12:25	1
Isopropylbenzene	ND		1.0		ug/L			04/09/24 12:25	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/09/24 12:25	1
Methylene Chloride	ND		5.0		ug/L			04/09/24 12:25	1
Naphthalene	ND		1.0		ug/L			04/09/24 12:25	1
n-Butylbenzene	ND		1.0		ug/L			04/09/24 12:25	1
N-Propylbenzene	ND		1.0		ug/L			04/09/24 12:25	1
Styrene	ND		1.0		ug/L			04/09/24 12:25	1
Tetrachloroethene	ND		1.0		ug/L			04/09/24 12:25	1
Toluene	ND		1.0		ug/L			04/09/24 12:25	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/09/24 12:25	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/09/24 12:25	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/09/24 12:25	1
Trichloroethene	ND		1.0		ug/L			04/09/24 12:25	1
Trichlorofluoromethane	ND		1.0		ug/L			04/09/24 12:25	1
Vinyl chloride	ND		1.0		ug/L			04/09/24 12:25	1
Xylenes, Total	ND		2.0		ug/L			04/09/24 12:25	1
1,2-Dibromoethane	ND		1.0		ug/L			04/09/24 12:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*78 - 122*		*04/09/24 12:25*	*1*
Dibromofluoromethane (Surr)	*96*		*73 - 120*		*04/09/24 12:25*	*1*
4-Bromofluorobenzene (Surr)	*88*		*56 - 136*		*04/09/24 12:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*		*04/09/24 12:25*	*1*

Lab Sample ID: LCS 240-608891/4
Matrix: Water
Analysis Batch: 608891

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane			25.0	26.1		ug/L		104	71 - 124		
1,1,1-Trichloroethane			25.0	24.1		ug/L		96	64 - 131		
1,1,2,2-Tetrachloroethane			25.0	22.7		ug/L		91	58 - 157		
1,1,2-Trichloroethane			25.0	24.7		ug/L		99	70 - 138		
1,1-Dichloroethane			25.0	24.4		ug/L		98	72 - 127		
1,1-Dichloroethene			25.0	20.9		ug/L		84	63 - 134		
1,2,3-Trichlorobenzene			25.0	26.0		ug/L		104	45 - 149		
1,2,3-Trichloropropane			25.0	23.2		ug/L		93	57 - 150		
1,2,4-Trichlorobenzene			25.0	26.0		ug/L		104	44 - 147		
1,2,4-Trimethylbenzene			25.0	24.2		ug/L		97	77 - 129		
1,2-Dibromo-3-Chloropropane			25.0	21.6		ug/L		86	53 - 135		
1,2-Dichlorobenzene			25.0	25.1		ug/L		100	78 - 120		
1,2-Dichloroethane			25.0	22.9		ug/L		92	66 - 128		
1,2-Dichloropropane			25.0	25.6		ug/L		103	75 - 133		
1,3,5-Trimethylbenzene			25.0	24.8		ug/L		99	75 - 129		
1,3-Dichlorobenzene			25.0	25.3		ug/L		101	80 - 120		

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

Lab Sample ID: LCS 240-608891/4
Matrix: Water
Analysis Batch: 608891

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	25.0	25.1		ug/L		100	80 - 120
2-Butanone (MEK)	50.0	49.5		ug/L		99	54 - 156
2-Hexanone	50.0	54.8		ug/L		110	43 - 167
4-Methyl-2-pentanone (MIBK)	50.0	49.5		ug/L		99	46 - 158
Acetone	50.0	45.6		ug/L		91	50 - 149
Acrylonitrile	250	262		ug/L		105	51 - 161
Benzene	25.0	22.4		ug/L		90	77 - 123
Bromoform	25.0	25.7		ug/L		103	57 - 129
Bromomethane	12.5	9.05		ug/L		72	36 - 142
Carbon disulfide	25.0	21.5		ug/L		86	43 - 140
Carbon tetrachloride	25.0	25.1		ug/L		100	55 - 137
Chlorobenzene	25.0	25.5		ug/L		102	80 - 121
Chlorodibromomethane	25.0	24.5		ug/L		98	70 - 124
Chloroethane	12.5	10.9		ug/L		88	38 - 152
Chloroform	25.0	21.3		ug/L		85	74 - 122
Chloromethane	12.5	12.6		ug/L		101	47 - 143
cis-1,2-Dichloroethene	25.0	20.9		ug/L		84	77 - 123
cis-1,3-Dichloropropene	25.0	20.3		ug/L		81	64 - 130
Dibromomethane	25.0	21.4		ug/L		86	67 - 131
Chlorobromomethane	25.0	21.1		ug/L		84	71 - 121
Dichlorodifluoromethane	12.5	8.61		ug/L		69	34 - 153
Dichlorobromomethane	25.0	21.2		ug/L		85	69 - 126
Ethyl ether	25.0	24.6		ug/L		99	53 - 151
Ethylbenzene	25.0	26.5		ug/L		106	80 - 121
Iodomethane	25.0	21.4		ug/L		85	39 - 136
Isopropylbenzene	25.0	26.4		ug/L		106	74 - 128
Methyl tert-butyl ether	25.0	19.8		ug/L		79	65 - 126
Methylene Chloride	25.0	18.8		ug/L		75	71 - 125
Naphthalene	25.0	23.0		ug/L		92	53 - 138
n-Butylbenzene	25.0	24.8		ug/L		99	62 - 139
N-Propylbenzene	25.0	25.9		ug/L		104	76 - 127
Styrene	25.0	25.8		ug/L		103	80 - 135
Tetrachloroethene	25.0	28.3		ug/L		113	76 - 123
Toluene	25.0	25.0		ug/L		100	80 - 123
trans-1,2-Dichloroethene	25.0	21.6		ug/L		86	75 - 124
trans-1,3-Dichloropropene	25.0	24.3		ug/L		97	57 - 129
trans-1,4-Dichloro-2-butene	25.0	22.1		ug/L		88	14 - 173
Trichloroethene	25.0	21.9		ug/L		88	70 - 122
Trichlorofluoromethane	12.5	10.7		ug/L		85	30 - 170
Vinyl chloride	12.5	11.7		ug/L		94	60 - 144
Xylenes, Total	50.0	51.4		ug/L		103	80 - 121
1,2-Dibromoethane	25.0	23.6		ug/L		95	71 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*78 - 122*
Dibromofluoromethane (Surr)	*89*		*73 - 120*
4-Bromofluorobenzene (Surr)	*97*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*91*		*62 - 137*

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

Lab Sample ID: LCS 240-608891/5
Matrix: Water
Analysis Batch: 608891

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	*95*		*78 - 122*
Dibromofluoromethane (Surr)	*91*		*73 - 120*
4-Bromofluorobenzene (Surr)	*93*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*93*		*62 - 137*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Lab Sample ID: MB 200-202912/1-A
Matrix: Water
Analysis Batch: 203268

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 202912

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		04/11/24 11:30	04/19/24 15:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	*97*		*46 - 130*	*04/11/24 11:30*	*04/19/24 15:30*	*1*

Lab Sample ID: LCS 200-202912/2-A
Matrix: Water
Analysis Batch: 203268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202912

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			2.00	1.93		ug/L		96	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Dioxane-d8 (Surr)	*85*		*46 - 130*

Lab Sample ID: LCSD 200-202912/3-A
Matrix: Water
Analysis Batch: 203268

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 202912

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			2.00	1.81		ug/L		90	70 - 130	7	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Dioxane-d8 (Surr)	*85*		*46 - 130*

GC/MS VOA

Analysis Batch: 608811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-202371-1	W-99-93	Total/NA	Water	8260D	
240-202371-2	W-88-92	Total/NA	Water	8260D	
240-202371-3	PW-3R-12	Total/NA	Water	8260D	
240-202371-4	PW-1R-12	Total/NA	Water	8260D	
240-202371-5	PW-2R-22	Total/NA	Water	8260D	
240-202371-6	W-90-92	Total/NA	Water	8260D	
240-202371-7	W-92-92	Total/NA	Water	8260D	
240-202371-8	W-96-92	Total/NA	Water	8260D	
240-202371-9	W-47-89	Total/NA	Water	8260D	
240-202371-10	W-100-93	Total/NA	Water	8260D	
240-202371-11	W-94-92	Total/NA	Water	8260D	
MB 240-608811/7	Method Blank	Total/NA	Water	8260D	
LCS 240-608811/4	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-608811/5	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 608891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-202371-2 - RA	W-88-92	Total/NA	Water	8260D	
MB 240-608891/7	Method Blank	Total/NA	Water	8260D	
LCS 240-608891/4	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-608891/5	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 202912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-202371-3	PW-3R-12	Total/NA	Water	522	
240-202371-4	PW-1R-12	Total/NA	Water	522	
240-202371-5	PW-2R-22	Total/NA	Water	522	
240-202371-9	W-47-89	Total/NA	Water	522	
240-202371-12	W-68-90	Total/NA	Water	522	
240-202371-13	W-48-89	Total/NA	Water	522	
240-202371-14	W-108-20	Total/NA	Water	522	
240-202371-15	W-107-20	Total/NA	Water	522	
240-202371-16	W-106-20	Total/NA	Water	522	
240-202371-17	W-105-20	Total/NA	Water	522	
MB 200-202912/1-A	Method Blank	Total/NA	Water	522	
LCS 200-202912/2-A	Lab Control Sample	Total/NA	Water	522	
LCSD 200-202912/3-A	Lab Control Sample Dup	Total/NA	Water	522	

Analysis Batch: 203268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-202371-9	W-47-89	Total/NA	Water	522	202912
240-202371-12	W-68-90	Total/NA	Water	522	202912
240-202371-14	W-108-20	Total/NA	Water	522	202912
240-202371-15	W-107-20	Total/NA	Water	522	202912
240-202371-16	W-106-20	Total/NA	Water	522	202912
240-202371-17	W-105-20	Total/NA	Water	522	202912
MB 200-202912/1-A	Method Blank	Total/NA	Water	522	202912
LCS 200-202912/2-A	Lab Control Sample	Total/NA	Water	522	202912
LCSD 200-202912/3-A	Lab Control Sample Dup	Total/NA	Water	522	202912

QC Association Summary

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

GC/MS Semi VOA

Analysis Batch: 203368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-202371-3	PW-3R-12	Total/NA	Water	522	202912
240-202371-4	PW-1R-12	Total/NA	Water	522	202912
240-202371-5	PW-2R-22	Total/NA	Water	522	202912
240-202371-13	W-48-89	Total/NA	Water	522	202912

Lab Chronicle

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-99-93
Lab Sample ID: 240-202371-1
Date Collected: 04/02/24 14:52
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	608811	LEE	EET CLE	04/08/24 22:51

Client Sample ID: W-88-92
Lab Sample ID: 240-202371-2
Date Collected: 04/02/24 15:50
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	608811	LEE	EET CLE	04/08/24 23:16
Total/NA	Analysis	8260D	RA	2	608891	LEE	EET CLE	04/09/24 13:14

Client Sample ID: PW-3R-12
Lab Sample ID: 240-202371-3
Date Collected: 04/03/24 09:55
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	608811	LEE	EET CLE	04/08/24 23:40
Total/NA	Prep	522			202912	DO	EET BUR	04/11/24 11:30
Total/NA	Analysis	522		20	203368	K1P	EET BUR	04/23/24 15:38

Client Sample ID: PW-1R-12
Lab Sample ID: 240-202371-4
Date Collected: 04/03/24 12:00
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	608811	LEE	EET CLE	04/09/24 00:05
Total/NA	Prep	522			202912	DO	EET BUR	04/11/24 11:30
Total/NA	Analysis	522		20	203368	K1P	EET BUR	04/23/24 15:52

Client Sample ID: PW-2R-22
Lab Sample ID: 240-202371-5
Date Collected: 04/03/24 15:00
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	608811	LEE	EET CLE	04/09/24 00:29
Total/NA	Prep	522			202912	DO	EET BUR	04/11/24 11:30
Total/NA	Analysis	522		2	203368	K1P	EET BUR	04/23/24 16:05

Client Sample ID: W-90-92
Lab Sample ID: 240-202371-6
Date Collected: 04/03/24 16:00
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	608811	LEE	EET CLE	04/09/24 00:54

Lab Chronicle

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-92-92
Lab Sample ID: 240-202371-7
Date Collected: 04/04/24 13:50
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	608811	LEE	EET CLE	04/09/24 01:18

Client Sample ID: W-96-92
Lab Sample ID: 240-202371-8
Date Collected: 04/04/24 15:10
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	608811	LEE	EET CLE	04/09/24 01:43

Client Sample ID: W-47-89
Lab Sample ID: 240-202371-9
Date Collected: 04/04/24 18:10
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	608811	LEE	EET CLE	04/09/24 02:08
Total/NA	Prep	522			202912	DO	EET BUR	04/11/24 11:30
Total/NA	Analysis	522		1	203268	K1P	EET BUR	04/19/24 16:26

Client Sample ID: W-100-93
Lab Sample ID: 240-202371-10
Date Collected: 04/05/24 09:53
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	608811	LEE	EET CLE	04/09/24 02:33

Client Sample ID: W-94-92
Lab Sample ID: 240-202371-11
Date Collected: 04/05/24 11:03
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	608811	LEE	EET CLE	04/09/24 02:58

Client Sample ID: W-68-90
Lab Sample ID: 240-202371-12
Date Collected: 04/04/24 12:05
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	522			202912	DO	EET BUR	04/11/24 11:30
Total/NA	Analysis	522		1	203268	K1P	EET BUR	04/19/24 16:40

Lab Chronicle

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-48-89
Lab Sample ID: 240-202371-13
Date Collected: 04/04/24 17:30
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	522			202912	DO	EET BUR	04/11/24 11:30
Total/NA	Analysis	522		10	203368	K1P	EET BUR	04/23/24 16:19

Client Sample ID: W-108-20
Lab Sample ID: 240-202371-14
Date Collected: 04/04/24 16:25
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	522			202912	DO	EET BUR	04/11/24 11:30
Total/NA	Analysis	522		1	203268	K1P	EET BUR	04/19/24 17:07

Client Sample ID: W-107-20
Lab Sample ID: 240-202371-15
Date Collected: 04/04/24 11:20
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	522			202912	DO	EET BUR	04/11/24 11:30
Total/NA	Analysis	522		1	203268	K1P	EET BUR	04/19/24 17:35

Client Sample ID: W-106-20
Lab Sample ID: 240-202371-16
Date Collected: 04/04/24 12:55
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	522			202912	DO	EET BUR	04/11/24 11:30
Total/NA	Analysis	522		1	203268	K1P	EET BUR	04/19/24 17:48

Client Sample ID: W-105-20
Lab Sample ID: 240-202371-17
Date Collected: 04/04/24 10:05
Matrix: Water
Date Received: 04/06/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	522			202912	DO	EET BUR	04/11/24 11:30
Total/NA	Analysis	522		1	203268	K1P	EET BUR	04/19/24 18:02

Laboratory References:

EET BUR = Eurofins Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Tetra Tech GEO
Job ID: 240-202371-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	06-30-24
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Laboratory: Eurofins Burlington

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2336	02-25-26
Connecticut	State	PH-0751	09-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	05-18-24
Florida	NELAP	E87467	06-30-24
Minnesota	NELAP	050-999-436	12-31-24
New Hampshire	NELAP	2006	12-18-24
New Jersey	NELAP	VT972	06-30-24
New York	NELAP	10391	03-31-25
Pennsylvania	NELAP	68-00489	04-30-25
Rhode Island	State	LAO00298	12-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00272	12-19-26
Vermont	State	VT4000	02-10-25
Virginia	NELAP	460209	12-14-24
Wisconsin	State	399140830	08-31-24

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone (330) 497-9396 Phone (330) 497-0772

MICHIGAN 190

Chain of Custody Record

1-4/1-4 MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler: TVM	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-119054-41599.1
Client Contact: Patti McCall	Phone: 734-626-2418	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: Tetra Tech GEO	PWSID:			Job #:
Address: 1136 Oak Valley Dr. Suite 100	Due Date Requested:			
City: Ann Arbor	TAT Requested (days): Standard			
State, Zip: MI, 48108	Compliance Project: Δ Yes Δ No			
Phone: 734-213-2204(Tel)	PO #: Purchase Order not required			
Email: patti.mccall@tetratech.com	WO #: 117-10540331 TVM 1.3			
Project Name: Ann Arbor Landfill Semi-Annual GW	Project #: 24027566			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D - VOCs (City of AnnArbor GW List)	8260D_SW_1,4-Dioxane TVM	522 - 1,4 Dioxane (GC/MS SIM)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A			
W-99-93	4-2-24	14:52	G	Water	n	n	X				
W-88-92	4-2-24	15:50	G	Water	n	n	X				
PW-3R-12	4-3-24	9:55	G	Water			X	X	X		
PW-1R-12	4-3-24	12:00	G	Water			X	X	X		
PW-2R-22	4-3-24	15:00	G	Water			X	X	X		
W-90-92	4-3-24	16:00	G	Water			X				
W-92-92	4-4-24	13:50	G	Water			X				
W-96-92	4-4-24	15:10	G	Water			X				
W-47-89	4-4-24	18:10	G	Water			X	X	X		
W-100-93	4-5-24	9:53	G	Water			X		X TVM		
W-94-92	4-5-24	11:03	G	Water			X				

240-202371 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
T Mahoney	4-4-24 19:00	TT	TT Cold Storage	4-4-24 1900	TT
M. E. Mitt	4-5-24 2100PM	TT	N. Blessed	4/5/24 1400	EETA
N. Blessed	4/5/24 1430	EETA		4-6-24 800	EETNC

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler: TJM	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-119254-41660.2
Client Contact: ~~Allison Rauss~~ TJM Patti McCall	Phone: 734-626-2418	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: ~~Page 2 of 2~~ Page 2 of 2
Company: Tetra Tech GEO	PWSID:	Analysis Requested		Job #:
Address: 1136 Oak Valley Dr. Suite 100	Due Date Requested:			Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA; M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify); Other:
City: Ann Arbor	TAT Requested (days): Standard			
State, Zip: MI, 48108	Compliance Project: Δ Yes Δ No			
Phone: 734-213-2204(Tel)	PO #: Purchase Order not required			
Email: TJM ~~alison.rauss@tetratech.com~~ patti.mccall@tetratech.com	WO #: 117-10540331 TJM 1.3			
Project Name: Ann Arbor Landfill Semi-Annual GW	Project #: 24027566			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	522 - 1,4 Dioxane (GC/MS SIM)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
W-68-90	4-4-24	12:05	G	Water	n	n	X		
W-48-84	4-4-24	17:30	G	W	n	n	X		
W-108-20	4-4-24	16:25	G	W	n	n	X		
W-107-20	4-4-24	11:20	G	W	n	n	X		
W-106-20	4-4-24	12:55	G	W	n	n	X		
W-105-20	4-4-24	10:05	G	W	n	n	X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	T Mahoney	4-4-24 19:00	TE	TE Cold Storage	4-4-24 19:00	TE
2	~~M. P Mc~~	4-5-24 2:09 PM	TT	N. Rhymer	4/5/24 1400	EETA
3	N. Rhymer	4/5/24 1430	EETA	[signature]	4-6-24 800	EETA

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Eurofins - Cleveland Sample Receipt Form/Narrative Login # :
Barberton Facility

Client Tetra Tech Site Name

Cooler Received on 4-6-24 Opened on 4-6-24

Cooler unpacked by: Vanny Boyle

FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time Storage Location

Eurofins Cooler # ES ~~Foam Box~~ Client Cooler Box Other

Packing material used. ~~Bubble Wrap~~ Foam Plastic Bag None Other

COOLANT Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 18 (CF 0.0 °C) Observed Cooler Temp 1.4 °C Corrected Cooler Temp 1.4 °C

2	Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes No
	-Were the seals on the outside of the cooler(s) signed & dated?	Yes No NA
	-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes No
	-Were tamper/custody seals intact and uncompromised?	Yes No NA
3	Shippers' packing slip attached to the cooler(s)?	Yes No
4.	Did custody papers accompany the sample(s)?	Yes No
5	Were the custody papers relinquished & signed in the appropriate place?	Yes No
6	Was/were the person(s) who collected the samples clearly identified on the COC?	Yes No
7	Did all bottles arrive in good condition (Unbroken)?	Yes No
8	Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes No
9	For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?	
10	Were correct bottle(s) used for the test(s) indicated?	Yes No
11	Sufficient quantity received to perform indicated analyses?	Yes No
12	Are these work share samples and all listed on the COC?	Yes No
	If yes, Questions 13 17 have been checked at the originating laboratory	
13	Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA pH Strip Lot# HC329089
14.	Were VOAs on the COC?	Yes No
15	Were air bubbles >6 mm in any VOA vials? ● ← Larger than this	Yes No NA
16	Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes No
17	Was a LL Hg or Me Hg trip blank present?	Yes No

Tests that are not checked for pH by Receiving

VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18 CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19 SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.

Sample(s) were received in a broken container

Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory

Time preserved Preservative(s) added/Lot number(s)

VOA Sample Preservation Date/Time VOAs Frozen.

4/6/2024

Login Container Summary Report

240-202371

5/2/2024

Temperature readings _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
W-99-93	240-202371-A-1	Voa Vial 40ml - Hydrochloric Acid				
W-99-93	240-202371-B-1	Voa Vial 40ml - Hydrochloric Acid				
W-99-93	240 202371-C-1	Voa Vial 40ml - Hydrochloric Acid				
W-99-93	240-202371-D-1	Voa Vial 40ml - unpreserved				
W-99-93	240-202371-E-1	Voa Vial 40ml - unpreserved				
W-99-93	240-202371 F-1	Voa Vial 40ml - unpreserved				
W-88-92	240-202371-A-2	Voa Vial 40ml - Hydrochloric Acid				
W-88-92	240-202371-B-2	Voa Vial 40ml - Hydrochloric Acid				
W-88-92	240-202371-C-2	Voa Vial 40ml - Hydrochloric Acid				
W-88-92	240-202371 D-2	Voa Vial 40ml - unpreserved				
W-88-92	240-202371-E-2	Voa Vial 40ml - unpreserved				
W-88-92	240-202371-F-2	Voa Vial 40ml - unpreserved				
PW-3R-12	240-202371-A-3	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-202371-B-3	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-202371-C-3	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-202371 D-3	Voa Vial 40ml - unpreserved				
PW-3R-12	240-202371-E-3	Voa Vial 40ml - unpreserved				
PW 3R-12	240-202371-F-3	Voa Vial 40ml - unpreserved				
PW-3R-12	240-202371-G-3	Amber Glass 250mL - hydrochloric acid				
PW-1R-12	240-202371-A-4	Voa Vial 40ml - Hydrochloric Acid				
PW-1R 12	240-202371-B-4	Voa Vial 40ml - Hydrochloric Acid				
PW 1R-12	240-202371-C-4	Voa Vial 40ml Hydrochloric Acid				
PW-1R-12	240-202371-D-4	Voa Vial 40ml - unpreserved				
PW-1R-12	240-202371-E-4	Voa Vial 40ml - unpreserved				
PW-1R-12	240 202371 F-4	Voa Vial 40ml - unpreserved				
PW-1R-12	240-202371-G-4	Amber Glass 250mL - hydrochloric acid				
PW-2R-22	240 202371 A 5	Voa Vial 40ml - Hydrochloric Acid				
PW 2R 22	240-202371-B-5	Voa Vial 40ml - Hydrochloric Acid				
PW-2R-22	240 202371-C-5	Voa Vial 40ml - Hydrochloric Acid				
PW-2R-22	240 202371-D-5	Voa Vial 40ml - unpreserved				
PW 2R-22	240-202371 E-5	Voa Vial 40ml - unpreserved				
PW-2R-22	240 202371-F 5	Voa Vial 40ml - unpreserved				
PW-2R-22	240-202371-G-5	Amber Glass 250mL - hydrochloric acid				
W-90-92	240 202371 A-6	Voa Vial 40ml Hydrochloric Acid				
W-90-92	240 202371-B-6	Voa Vial 40ml - Hydrochloric Acid				

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
W-90-92	240-202371-C-6	Voa Vial 40ml - Hydrochloric Acid				
W-90-92	240-202371-D-6	Voa Vial 40ml - unpreserved				
W-90-92	240-202371-E-6	Voa Vial 40ml - unpreserved				
W-90-92	240-202371-F-6	Voa Vial 40ml - unpreserved				
W-92-92	240-202371-A-7	Voa Vial 40ml - Hydrochloric Acid				
W-92-92	240-202371-B-7	Voa Vial 40ml - Hydrochloric Acid				
W-92-92	240-202371-C-7	Voa Vial 40ml - Hydrochloric Acid				
W-92-92	240-202371-D-7	Voa Vial 40ml - unpreserved				
W-92-92	240-202371-E-7	Voa Vial 40ml - unpreserved				
W-92-92	240-202371-F-7	Voa Vial 40ml - unpreserved				
W-96-92	240-202371-A-8	Voa Vial 40ml - Hydrochloric Acid				
W-96-92	240-202371-B-8	Voa Vial 40ml - Hydrochloric Acid				
W-96-92	240-202371-C-8	Voa Vial 40ml - Hydrochloric Acid				
W-96-92	240-202371-D-8	Voa Vial 40ml - unpreserved				
W-96-92	240-202371-E-8	Voa Vial 40ml - unpreserved				
W-96-92	240-202371-F-8	Voa Vial 40ml - unpreserved				
W-47-89	240-202371-A-9	Voa Vial 40ml - Hydrochloric Acid				
W-47-89	240-202371-B-9	Voa Vial 40ml - Hydrochloric Acid				
W-47 89	240 202371-C-9	Voa Vial 40ml - Hydrochloric Acid				
W-47-89	240-202371-D-9	Voa Vial 40ml - unpreserved				
W-47-89	240-202371-E-9	Voa Vial 40ml - unpreserved				
W-47-89	240-202371-F-9	Voa Vial 40ml - unpreserved				
W-47-89	240-202371-G-9	Amber Glass 250mL - hydrochloric acid				
W-100-93	240-202371 A-10	Voa Vial 40ml - Hydrochloric Acid				
W-100-93	240-202371-B-10	Voa Vial 40ml - Hydrochloric Acid				
W 100-93	240-202371-C-10	Voa Vial 40ml - Hydrochloric Acid				
W-100-93	240-202371-D-10	Voa Vial 40ml - Hydrochloric Acid				
W 100-93	240-202371 E-10	Voa Vial 40ml - Hydrochloric Acid				
W-100-93	240-202371-F-10	Voa Vial 40ml - Hydrochloric Acid				
W-94-92	240 202371 A-11	Voa Vial 40ml - Hydrochloric Acid				
W-94-92	240 202371-B-11	Voa Vial 40ml - Hydrochloric Acid				
W-94-92	240 202371-C-11	Voa Vial 40ml - Hydrochloric Acid				
W-94-92	240-202371-D-11	Voa Vial 40ml Hydrochloric Acid				
W-94-92	240 202371 E-11	Voa Vial 40ml - Hydrochloric Acid				
W-94-92	240-202371 F 11	Voa Vial 40ml - Hydrochloric Acid				
W-68-90	240-202371-A-12	Amber Glass 250mL - hydrochloric acid				
W-48-89	240-202371 A-13	Amber Glass 250mL - hydrochloric acid				
W-108 20	240-202371-A 14	Amber Glass 250mL - hydrochloric acid				

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
W-107-20	240-202371-A-15	Amber Glass 250mL - hydrochloric acid				
W-106-20	240 202371-A-16	Amber Glass 250mL - hydrochloric acid				
W-105-20	240-202371-A-17	Amber Glass 250mL - hydrochloric acid				

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

240-202371 Chain of Custody

urofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Brooks, Kris M		No: -182834.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: Michigan	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note).		Job #: 240-202371-1
Address: 530 Community Drive, Suite 11,	Due Date Requested: 4/22/2024			
City: South Burlington	TAT Requested (days):			
State, Zip: VT, 05403				
Phone: 802-660-1990(Tel) 802-660-1919(Fax)	PO #:			
Email:	WO #:			
Project Name: Ann Arbor Landfill 2 Year GW & WW Prog.	Project #: 24027566			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	522/522_CWA_Prep 1,4 Dioxane (GC/MS SIM)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
PW-3R-12 (240-202371-3)	4/3/24	09:55 Eastern		Water			X	1	
PW-1R-12 (240-202371-4)	4/3/24	12:00 Eastern		Water			X	1	
PW-2R-22 (240-202371-5)	4/3/24	15:00 Eastern		Water			X	1	
W-47-89 (240-202371-9)	4/4/24	18:10 Eastern		Water			X	1	
W-68-90 (240-202371-12)	4/4/24	12:05 Eastern		Water			X	1	
W-48-89 (240-202371-13)	4/4/24	17:30 Eastern		Water			X	1	
W-108-20 (240-202371-14)	4/4/24	16:25 Eastern		Water			X	1	
W-107-20 (240-202371-15)	4/4/24	11.20 Eastern		Water			X	1	
W-106-20 (240-202371-16)	4/4/24	12:55 Eastern		Water			X	1	

Note Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: Rachelle Marcero	Date/Time: 4/4/24 1025	Company: EETNC	Received by:	Date/Time: 4/9/24 1035	Company: ETA-BUN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks.

Ver: 06/08/2021

5/2/2024

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-182834.2
Client Contact: Shipping/Receiving	Phone	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: Michigan	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note).		Job #: 240-202371-1
Address: 530 Community Drive, Suite 11,	Due Date Requested: 4/22/2024			
City: South Burlington	TAT Requested (days):			
State, Zip: VT, 05403				
Phone: 802-660-1990(Tel) 802-660-1919(Fax)	PO #:			
Email:	WO #:			
Project Name: Ann Arbor Landfill 2 Year GW & WW Prog.	Project #: 24027566			
Site	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	522/522_CWA_Prep 1,4 Dioxane (GC/MS SIM)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
W-105-20 (240-202371-17)	4/4/24	10:05 Eastern		Water			X	1	

Note. Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Rachelle Haase	4/8/24 1025	EET NC		4/9/24 1035	ETA BUR
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 06/08/2021

5/2/2024



ORIGIN ID:CAKA (330) 312-0176
LANCE HERSHMAN
EUROFINS TESTAMERICA BARBERTON
180 S VAN BUREN

BARBERTON, OH 44203
UNITED STATES US

SHIP DATE: 08APR24
ACTWGT: 33.01 LB MAN
CAD: 0792304/CAFE3803

BILL SENDER

TO ENVIRONMENTAL SAMPLE RECEIPT
TESTAMERICA BURLINGTON
530 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 660-1990 REF:
INV:
PO: DEPT:

FedEx
Express

TRK# 0201 7180 5079 7085

TUE - 09 APR 10:30A
PRIORITY OVERNIGHT

NX BTVA

DSR
05403
VT-US BTV

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 240-202371-1

Login Number: 202371
List Number: 2
Creator: Muniz, Luca

List Source: Eurofins Burlington
List Creation: 04/09/24 02:52 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.0ºC
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Alison Rauss
Tetra Tech GEO
1136 Oak Valley Dr.
Suite 100
Ann Arbor, Michigan 48108

Generated 5/17/2024 11:49:49 AM Revision 1

JOB DESCRIPTION

Ann Arbor Landfill Semi-Annual GW

JOB NUMBER

240-202563-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
5/17/2024 11:49:49 AM
Revision 1

Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Method Summary 6
Sample Summary 7
Detection Summary 8
Client Sample Results 9
Surrogate Summary 19
QC Sample Results 20
QC Association Summary 28
Lab Chronicle 29
Certification Summary 30
Chain of Custody 31
Receipt Checklists 37

Definitions/Glossary

Client: Tetra Tech GEO
Job ID: 240-202563-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 240-202563-1 — Eurofins Cleveland

Job Narrative
240-202563-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 4/10/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6°C and 1.6°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-609300 was outside the method criteria for the following analyte(s): 2-Methylnaphthalene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): TRIP BLANK (240-202563-5).

Method 8260D: The laboratory control sample (LCS) analyzed in batch 240-609300 was below the recovery control criteria for the following analyte(s): 2-Methylnaphthalene. This variance only affects results measured above the reporting limit. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. This demonstrates the analyte reporting limit is valid, and it is acceptable to report ND results (non-detects). The samples associated with the LCS were non-detects for the affected analytes; therefore, the results were reported. The following samples are impacted: W-85-92 (240-202563-1), W-89-92 (240-202563-2), W-87-92 (240-202563-3), W-84-92 (240-202563-4) and TRIP BLANK (240-202563-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202563-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CLE
8260D SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CLE
522	1,4 Dioxane (GC/MS SIM)	EPA	EET BUR
5030C	Purge and Trap	SW846	EET CLE
522	Solid-Phase Extraction (SPE)	EPA	EET BUR

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET BUR = Eurofins Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Tetra Tech GEO
Job ID: 240-202563-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-202563-1	W-85-92	Water	04/05/24 12:15	04/10/24 08:00
240-202563-2	W-89-92	Water	04/05/24 13:00	04/10/24 08:00
240-202563-3	W-87-92	Water	04/05/24 14:05	04/10/24 08:00
240-202563-4	W-84-92	Water	04/05/24 15:15	04/10/24 08:00
240-202563-5	TRIP BLANK	Water	04/05/24 00:00	04/10/24 08:00

Detection Summary

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202563-1

Client Sample ID: W-85-92 — Lab Sample ID: 240-202563-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Ethyl ether	1.5		1.0		ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	7.6		1.0		ug/L	1		8260D	Total/NA
Trichloroethene	1.7		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride	1.5		1.0		ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene - RA	80		2.0		ug/L	2		8260D	Total/NA

Client Sample ID: W-89-92 — Lab Sample ID: 240-202563-2

No Detections.

Client Sample ID: W-87-92 — Lab Sample ID: 240-202563-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Ethyl ether	2.4		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride	14		1.0		ug/L	1		8260D	Total/NA
1,4-Dioxane	30		0.80		ug/L	4		522	Total/NA

Client Sample ID: W-84-92 — Lab Sample ID: 240-202563-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Ethyl ether	1.7		1.0		ug/L	1		8260D	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-202563-5

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202563-1

Client Sample ID: W-85-92
Date Collected: 04/05/24 12:15
Date Received: 04/10/24 08:00

Lab Sample ID: 240-202563-1
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 20:41	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/11/24 20:41	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 20:41	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/11/24 20:41	1
1,1-Dichloroethane	ND		1.0		ug/L			04/11/24 20:41	1
1,1-Dichloroethene	ND		1.0		ug/L			04/11/24 20:41	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/11/24 20:41	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/11/24 20:41	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/11/24 20:41	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/11/24 20:41	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/11/24 20:41	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/11/24 20:41	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/11/24 20:41	1
1,2-Dichloroethane	ND		1.0		ug/L			04/11/24 20:41	1
1,2-Dichloropropane	ND		1.0		ug/L			04/11/24 20:41	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/11/24 20:41	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/11/24 20:41	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/11/24 20:41	1
2-Butanone (MEK)	ND		10		ug/L			04/11/24 20:41	1
2-Hexanone	ND		10		ug/L			04/11/24 20:41	1
2-Methylnaphthalene	ND	*-	5.0		ug/L			04/11/24 20:41	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/11/24 20:41	1
Acetone	ND		10		ug/L			04/11/24 20:41	1
Acrylonitrile	ND		20		ug/L			04/11/24 20:41	1
Benzene	ND		1.0		ug/L			04/11/24 20:41	1
Bromoform	ND		1.0		ug/L			04/11/24 20:41	1
Bromomethane	ND		1.0		ug/L			04/11/24 20:41	1
Carbon disulfide	ND		5.0		ug/L			04/11/24 20:41	1
Carbon tetrachloride	ND		1.0		ug/L			04/11/24 20:41	1
Chlorobenzene	ND		1.0		ug/L			04/11/24 20:41	1
Chlorodibromomethane	ND		1.0		ug/L			04/11/24 20:41	1
Chloroethane	ND		1.0		ug/L			04/11/24 20:41	1
Chloroform	ND		1.0		ug/L			04/11/24 20:41	1
Chloromethane	ND		1.0		ug/L			04/11/24 20:41	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 20:41	1
Dibromomethane	ND		1.0		ug/L			04/11/24 20:41	1
Chlorobromomethane	ND		1.0		ug/L			04/11/24 20:41	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/11/24 20:41	1
Dichlorobromomethane	ND		1.0		ug/L			04/11/24 20:41	1
Ethyl ether	**1.5**		1.0		ug/L			04/11/24 20:41	1
Ethylbenzene	ND		1.0		ug/L			04/11/24 20:41	1
Iodomethane	ND		1.0		ug/L			04/11/24 20:41	1
Isopropylbenzene	ND		1.0		ug/L			04/11/24 20:41	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/11/24 20:41	1
Methylene Chloride	ND		5.0		ug/L			04/11/24 20:41	1
Naphthalene	ND		1.0		ug/L			04/11/24 20:41	1
n-Butylbenzene	ND		1.0		ug/L			04/11/24 20:41	1
N-Propylbenzene	ND		1.0		ug/L			04/11/24 20:41	1
Styrene	ND		1.0		ug/L			04/11/24 20:41	1

Client Sample ID: W-85-92
Lab Sample ID: 240-202563-1
Date Collected: 04/05/24 12:15
Matrix: Water
Date Received: 04/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		1.0		ug/L			04/11/24 20:41	1
Toluene	ND		1.0		ug/L			04/11/24 20:41	1
trans-1,2-Dichloroethene	**7.6**		1.0		ug/L			04/11/24 20:41	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 20:41	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/11/24 20:41	1
Trichloroethene	**1.7**		1.0		ug/L			04/11/24 20:41	1
Trichlorofluoromethane	ND		1.0		ug/L			04/11/24 20:41	1
Vinyl chloride	**1.5**		1.0		ug/L			04/11/24 20:41	1
Xylenes, Total	ND		2.0		ug/L			04/11/24 20:41	1
1,2-Dibromoethane	ND		1.0		ug/L			04/11/24 20:41	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/11/24 20:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*78 - 122*		*04/11/24 20:41*	*1*
Dibromofluoromethane (Surr)	*109*		*73 - 120*		*04/11/24 20:41*	*1*
4-Bromofluorobenzene (Surr)	*97*		*56 - 136*		*04/11/24 20:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*123*		*62 - 137*		*04/11/24 20:41*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	**80**		2.0		ug/L			04/12/24 19:33	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*122*		*62 - 137*		*04/12/24 19:33*	*2*
4-Bromofluorobenzene (Surr)	*96*		*56 - 136*		*04/12/24 19:33*	*2*
Toluene-d8 (Surr)	*106*		*78 - 122*		*04/12/24 19:33*	*2*
Dibromofluoromethane (Surr)	*109*		*73 - 120*		*04/12/24 19:33*	*2*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202563-1

Client Sample ID: W-89-92
Date Collected: 04/05/24 13:00
Date Received: 04/10/24 08:00

Lab Sample ID: 240-202563-2
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 21:05	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/11/24 21:05	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 21:05	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/11/24 21:05	1
1,1-Dichloroethane	ND		1.0		ug/L			04/11/24 21:05	1
1,1-Dichloroethene	ND		1.0		ug/L			04/11/24 21:05	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/11/24 21:05	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/11/24 21:05	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/11/24 21:05	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/11/24 21:05	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/11/24 21:05	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/11/24 21:05	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/11/24 21:05	1
1,2-Dichloroethane	ND		1.0		ug/L			04/11/24 21:05	1
1,2-Dichloropropane	ND		1.0		ug/L			04/11/24 21:05	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/11/24 21:05	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/11/24 21:05	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/11/24 21:05	1
2-Butanone (MEK)	ND		10		ug/L			04/11/24 21:05	1
2-Hexanone	ND		10		ug/L			04/11/24 21:05	1
2-Methylnaphthalene	ND	*-	5.0		ug/L			04/11/24 21:05	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/11/24 21:05	1
Acetone	ND		10		ug/L			04/11/24 21:05	1
Acrylonitrile	ND		20		ug/L			04/11/24 21:05	1
Benzene	ND		1.0		ug/L			04/11/24 21:05	1
Bromoform	ND		1.0		ug/L			04/11/24 21:05	1
Bromomethane	ND		1.0		ug/L			04/11/24 21:05	1
Carbon disulfide	ND		5.0		ug/L			04/11/24 21:05	1
Carbon tetrachloride	ND		1.0		ug/L			04/11/24 21:05	1
Chlorobenzene	ND		1.0		ug/L			04/11/24 21:05	1
Chlorodibromomethane	ND		1.0		ug/L			04/11/24 21:05	1
Chloroethane	ND		1.0		ug/L			04/11/24 21:05	1
Chloroform	ND		1.0		ug/L			04/11/24 21:05	1
Chloromethane	ND		1.0		ug/L			04/11/24 21:05	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/11/24 21:05	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 21:05	1
Dibromomethane	ND		1.0		ug/L			04/11/24 21:05	1
Chlorobromomethane	ND		1.0		ug/L			04/11/24 21:05	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/11/24 21:05	1
Dichlorobromomethane	ND		1.0		ug/L			04/11/24 21:05	1
Ethyl ether	ND		1.0		ug/L			04/11/24 21:05	1
Ethylbenzene	ND		1.0		ug/L			04/11/24 21:05	1
Iodomethane	ND		1.0		ug/L			04/11/24 21:05	1
Isopropylbenzene	ND		1.0		ug/L			04/11/24 21:05	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/11/24 21:05	1
Methylene Chloride	ND		5.0		ug/L			04/11/24 21:05	1
Naphthalene	ND		1.0		ug/L			04/11/24 21:05	1
n-Butylbenzene	ND		1.0		ug/L			04/11/24 21:05	1
N-Propylbenzene	ND		1.0		ug/L			04/11/24 21:05	1

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202563-1

Client Sample ID: W-89-92
Date Collected: 04/05/24 13:00
Date Received: 04/10/24 08:00

Lab Sample ID: 240-202563-2
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/11/24 21:05	1
Tetrachloroethene	ND		1.0		ug/L			04/11/24 21:05	1
Toluene	ND		1.0		ug/L			04/11/24 21:05	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/11/24 21:05	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 21:05	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/11/24 21:05	1
Trichloroethene	ND		1.0		ug/L			04/11/24 21:05	1
Trichlorofluoromethane	ND		1.0		ug/L			04/11/24 21:05	1
Vinyl chloride	ND		1.0		ug/L			04/11/24 21:05	1
Xylenes, Total	ND		2.0		ug/L			04/11/24 21:05	1
1,2-Dibromoethane	ND		1.0		ug/L			04/11/24 21:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/11/24 21:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*78 - 122*		*04/11/24 21:05*	*1*
Dibromofluoromethane (Surr)	*109*		*73 - 120*		*04/11/24 21:05*	*1*
4-Bromofluorobenzene (Surr)	*95*		*56 - 136*		*04/11/24 21:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*124*		*62 - 137*		*04/11/24 21:05*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202563-1

Client Sample ID: W-87-92
Date Collected: 04/05/24 14:05
Date Received: 04/10/24 08:00

Lab Sample ID: 240-202563-3
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 21:29	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/11/24 21:29	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 21:29	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/11/24 21:29	1
1,1-Dichloroethane	ND		1.0		ug/L			04/11/24 21:29	1
1,1-Dichloroethene	ND		1.0		ug/L			04/11/24 21:29	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/11/24 21:29	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/11/24 21:29	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/11/24 21:29	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/11/24 21:29	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/11/24 21:29	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/11/24 21:29	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/11/24 21:29	1
1,2-Dichloroethane	ND		1.0		ug/L			04/11/24 21:29	1
1,2-Dichloropropane	ND		1.0		ug/L			04/11/24 21:29	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/11/24 21:29	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/11/24 21:29	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/11/24 21:29	1
2-Butanone (MEK)	ND		10		ug/L			04/11/24 21:29	1
2-Hexanone	ND		10		ug/L			04/11/24 21:29	1
2-Methylnaphthalene	ND	*-	5.0		ug/L			04/11/24 21:29	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/11/24 21:29	1
Acetone	ND		10		ug/L			04/11/24 21:29	1
Acrylonitrile	ND		20		ug/L			04/11/24 21:29	1
Benzene	ND		1.0		ug/L			04/11/24 21:29	1
Bromoform	ND		1.0		ug/L			04/11/24 21:29	1
Bromomethane	ND		1.0		ug/L			04/11/24 21:29	1
Carbon disulfide	ND		5.0		ug/L			04/11/24 21:29	1
Carbon tetrachloride	ND		1.0		ug/L			04/11/24 21:29	1
Chlorobenzene	ND		1.0		ug/L			04/11/24 21:29	1
Chlorodibromomethane	ND		1.0		ug/L			04/11/24 21:29	1
Chloroethane	ND		1.0		ug/L			04/11/24 21:29	1
Chloroform	ND		1.0		ug/L			04/11/24 21:29	1
Chloromethane	ND		1.0		ug/L			04/11/24 21:29	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/11/24 21:29	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 21:29	1
Dibromomethane	ND		1.0		ug/L			04/11/24 21:29	1
Chlorobromomethane	ND		1.0		ug/L			04/11/24 21:29	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/11/24 21:29	1
Dichlorobromomethane	ND		1.0		ug/L			04/11/24 21:29	1
Ethyl ether	**2.4**		1.0		ug/L			04/11/24 21:29	1
Ethylbenzene	ND		1.0		ug/L			04/11/24 21:29	1
Iodomethane	ND		1.0		ug/L			04/11/24 21:29	1
Isopropylbenzene	ND		1.0		ug/L			04/11/24 21:29	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/11/24 21:29	1
Methylene Chloride	ND		5.0		ug/L			04/11/24 21:29	1
Naphthalene	ND		1.0		ug/L			04/11/24 21:29	1
n-Butylbenzene	ND		1.0		ug/L			04/11/24 21:29	1
N-Propylbenzene	ND		1.0		ug/L			04/11/24 21:29	1

Client Sample ID: W-87-92
Lab Sample ID: 240-202563-3
Date Collected: 04/05/24 14:05
Matrix: Water
Date Received: 04/10/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/11/24 21:29	1
Tetrachloroethene	ND		1.0		ug/L			04/11/24 21:29	1
Toluene	ND		1.0		ug/L			04/11/24 21:29	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/11/24 21:29	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 21:29	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/11/24 21:29	1
Trichloroethene	ND		1.0		ug/L			04/11/24 21:29	1
Trichlorofluoromethane	ND		1.0		ug/L			04/11/24 21:29	1
Vinyl chloride	**14**		1.0		ug/L			04/11/24 21:29	1
Xylenes, Total	ND		2.0		ug/L			04/11/24 21:29	1
1,2-Dibromoethane	ND		1.0		ug/L			04/11/24 21:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/11/24 21:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*78 - 122*		*04/11/24 21:29*	*1*
Dibromofluoromethane (Surr)	*110*		*73 - 120*		*04/11/24 21:29*	*1*
4-Bromofluorobenzene (Surr)	*96*		*56 - 136*		*04/11/24 21:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*123*		*62 - 137*		*04/11/24 21:29*	*1*

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**30**		0.80		ug/L		04/23/24 10:15	04/24/24 13:48	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*104*		*46 - 130*	*04/23/24 10:15*	*04/24/24 13:48*	*4*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202563-1

Client Sample ID: W-84-92
Date Collected: 04/05/24 15:15
Date Received: 04/10/24 08:00

Lab Sample ID: 240-202563-4
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 21:53	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/11/24 21:53	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 21:53	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/11/24 21:53	1
1,1-Dichloroethane	ND		1.0		ug/L			04/11/24 21:53	1
1,1-Dichloroethene	ND		1.0		ug/L			04/11/24 21:53	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/11/24 21:53	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/11/24 21:53	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/11/24 21:53	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/11/24 21:53	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/11/24 21:53	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/11/24 21:53	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/11/24 21:53	1
1,2-Dichloroethane	ND		1.0		ug/L			04/11/24 21:53	1
1,2-Dichloropropane	ND		1.0		ug/L			04/11/24 21:53	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/11/24 21:53	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/11/24 21:53	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/11/24 21:53	1
2-Butanone (MEK)	ND		10		ug/L			04/11/24 21:53	1
2-Hexanone	ND		10		ug/L			04/11/24 21:53	1
2-Methylnaphthalene	ND	*-	5.0		ug/L			04/11/24 21:53	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/11/24 21:53	1
Acetone	ND		10		ug/L			04/11/24 21:53	1
Acrylonitrile	ND		20		ug/L			04/11/24 21:53	1
Benzene	ND		1.0		ug/L			04/11/24 21:53	1
Bromoform	ND		1.0		ug/L			04/11/24 21:53	1
Bromomethane	ND		1.0		ug/L			04/11/24 21:53	1
Carbon disulfide	ND		5.0		ug/L			04/11/24 21:53	1
Carbon tetrachloride	ND		1.0		ug/L			04/11/24 21:53	1
Chlorobenzene	ND		1.0		ug/L			04/11/24 21:53	1
Chlorodibromomethane	ND		1.0		ug/L			04/11/24 21:53	1
Chloroethane	ND		1.0		ug/L			04/11/24 21:53	1
Chloroform	ND		1.0		ug/L			04/11/24 21:53	1
Chloromethane	ND		1.0		ug/L			04/11/24 21:53	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/11/24 21:53	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 21:53	1
Dibromomethane	ND		1.0		ug/L			04/11/24 21:53	1
Chlorobromomethane	ND		1.0		ug/L			04/11/24 21:53	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/11/24 21:53	1
Dichlorobromomethane	ND		1.0		ug/L			04/11/24 21:53	1
Ethyl ether	**1.7**		1.0		ug/L			04/11/24 21:53	1
Ethylbenzene	ND		1.0		ug/L			04/11/24 21:53	1
Iodomethane	ND		1.0		ug/L			04/11/24 21:53	1
Isopropylbenzene	ND		1.0		ug/L			04/11/24 21:53	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/11/24 21:53	1
Methylene Chloride	ND		5.0		ug/L			04/11/24 21:53	1
Naphthalene	ND		1.0		ug/L			04/11/24 21:53	1
n-Butylbenzene	ND		1.0		ug/L			04/11/24 21:53	1
N-Propylbenzene	ND		1.0		ug/L			04/11/24 21:53	1

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202563-1

Client Sample ID: W-84-92
Date Collected: 04/05/24 15:15
Date Received: 04/10/24 08:00

Lab Sample ID: 240-202563-4
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/11/24 21:53	1
Tetrachloroethene	ND		1.0		ug/L			04/11/24 21:53	1
Toluene	ND		1.0		ug/L			04/11/24 21:53	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/11/24 21:53	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 21:53	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/11/24 21:53	1
Trichloroethene	ND		1.0		ug/L			04/11/24 21:53	1
Trichlorofluoromethane	ND		1.0		ug/L			04/11/24 21:53	1
Vinyl chloride	ND		1.0		ug/L			04/11/24 21:53	1
Xylenes, Total	ND		2.0		ug/L			04/11/24 21:53	1
1,2-Dibromoethane	ND		1.0		ug/L			04/11/24 21:53	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/11/24 21:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*78 - 122*		*04/11/24 21:53*	*1*
Dibromofluoromethane (Surr)	*110*		*73 - 120*		*04/11/24 21:53*	*1*
4-Bromofluorobenzene (Surr)	*95*		*56 - 136*		*04/11/24 21:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*125*		*62 - 137*		*04/11/24 21:53*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202563-1

Client Sample ID: TRIP BLANK

Date Collected: 04/05/24 00:00
Date Received: 04/10/24 08:00

Lab Sample ID: 240-202563-5

Matrix: Water

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		2.0		ug/L			04/16/24 11:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*68 - 127*		*04/16/24 11:58*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 17:05	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/11/24 17:05	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 17:05	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/11/24 17:05	1
1,1-Dichloroethane	ND		1.0		ug/L			04/11/24 17:05	1
1,1-Dichloroethene	ND		1.0		ug/L			04/11/24 17:05	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/11/24 17:05	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/11/24 17:05	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/11/24 17:05	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/11/24 17:05	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/11/24 17:05	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/11/24 17:05	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/11/24 17:05	1
1,2-Dichloroethane	ND		1.0		ug/L			04/11/24 17:05	1
1,2-Dichloropropane	ND		1.0		ug/L			04/11/24 17:05	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/11/24 17:05	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/11/24 17:05	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/11/24 17:05	1
2-Butanone (MEK)	ND		10		ug/L			04/11/24 17:05	1
2-Hexanone	ND		10		ug/L			04/11/24 17:05	1
2-Methylnaphthalene	ND	*-	5.0		ug/L			04/11/24 17:05	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/11/24 17:05	1
Acetone	ND		10		ug/L			04/11/24 17:05	1
Acrylonitrile	ND		20		ug/L			04/11/24 17:05	1
Benzene	ND		1.0		ug/L			04/11/24 17:05	1
Bromoform	ND		1.0		ug/L			04/11/24 17:05	1
Bromomethane	ND		1.0		ug/L			04/11/24 17:05	1
Carbon disulfide	ND		5.0		ug/L			04/11/24 17:05	1
Carbon tetrachloride	ND		1.0		ug/L			04/11/24 17:05	1
Chlorobenzene	ND		1.0		ug/L			04/11/24 17:05	1
Chlorodibromomethane	ND		1.0		ug/L			04/11/24 17:05	1
Chloroethane	ND		1.0		ug/L			04/11/24 17:05	1
Chloroform	ND		1.0		ug/L			04/11/24 17:05	1
Chloromethane	ND		1.0		ug/L			04/11/24 17:05	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/11/24 17:05	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 17:05	1
Dibromomethane	ND		1.0		ug/L			04/11/24 17:05	1
Chlorobromomethane	ND		1.0		ug/L			04/11/24 17:05	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/11/24 17:05	1
Dichlorobromomethane	ND		1.0		ug/L			04/11/24 17:05	1
Ethyl ether	ND		1.0		ug/L			04/11/24 17:05	1
Ethylbenzene	ND		1.0		ug/L			04/11/24 17:05	1
Iodomethane	ND		1.0		ug/L			04/11/24 17:05	1

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202563-1

Client Sample ID: TRIP BLANK
Date Collected: 04/05/24 00:00
Date Received: 04/10/24 08:00

Lab Sample ID: 240-202563-5
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND		1.0		ug/L			04/11/24 17:05	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/11/24 17:05	1
Methylene Chloride	ND		5.0		ug/L			04/11/24 17:05	1
Naphthalene	ND		1.0		ug/L			04/11/24 17:05	1
n-Butylbenzene	ND		1.0		ug/L			04/11/24 17:05	1
N-Propylbenzene	ND		1.0		ug/L			04/11/24 17:05	1
Styrene	ND		1.0		ug/L			04/11/24 17:05	1
Tetrachloroethene	ND		1.0		ug/L			04/11/24 17:05	1
Toluene	ND		1.0		ug/L			04/11/24 17:05	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/11/24 17:05	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 17:05	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/11/24 17:05	1
Trichloroethene	ND		1.0		ug/L			04/11/24 17:05	1
Trichlorofluoromethane	ND		1.0		ug/L			04/11/24 17:05	1
Vinyl chloride	ND		1.0		ug/L			04/11/24 17:05	1
Xylenes, Total	ND		2.0		ug/L			04/11/24 17:05	1
1,2-Dibromoethane	ND		1.0		ug/L			04/11/24 17:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/11/24 17:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*78 - 122*		*04/11/24 17:05*	*1*
Dibromofluoromethane (Surr)	*106*		*73 - 120*		*04/11/24 17:05*	*1*
4-Bromofluorobenzene (Surr)	*96*		*56 - 136*		*04/11/24 17:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*62 - 137*		*04/11/24 17:05*	*1*

Surrogate Summary

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202563-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DBFM	BFB	DCA
Lab Sample ID	Client Sample ID	(78-122)	(73-120)	(56-136)	(62-137)
240-202563-1	W-85-92	105	109	97	123
240-202563-1 - RA	W-85-92	106	109	96	122
240-202563-2	W-89-92	104	109	95	124
240-202563-3	W-87-92	104	110	96	123
240-202563-4	W-84-92	104	110	95	125
240-202563-5	TRIP BLANK	105	106	96	116
LCS 240-609300/5	Lab Control Sample	109	101	104	115
LCS 240-609300/6	Lab Control Sample	103	102	100	116
LCS 240-609472/5	Lab Control Sample	110	101	102	114
LCS 240-609472/6	Lab Control Sample	105	105	102	120
MB 240-609300/8	Method Blank	105	104	97	115
MB 240-609472/8	Method Blank	102	103	94	117

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(68-127)
240-202563-5	TRIP BLANK	96
240-202563-5 MS	TRIP BLANK	92
240-202563-5 MSD	TRIP BLANK	87
LCS 240-609736/4	Lab Control Sample	87
MB 240-609736/6	Method Blank	91

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DXE
Lab Sample ID	Client Sample ID	(46-130)
240-202563-3	W-87-92	104
LCS 200-203346/2-A	Lab Control Sample	99
MB 200-203346/1-A	Method Blank	101

Surrogate Legend

DXE = 1,4-Dioxane-d8 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-609300/8
Matrix: Water
Analysis Batch: 609300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 16:40	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/11/24 16:40	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 16:40	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/11/24 16:40	1
1,1-Dichloroethane	ND		1.0		ug/L			04/11/24 16:40	1
1,1-Dichloroethene	ND		1.0		ug/L			04/11/24 16:40	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/11/24 16:40	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/11/24 16:40	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/11/24 16:40	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/11/24 16:40	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/11/24 16:40	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/11/24 16:40	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/11/24 16:40	1
1,2-Dichloroethane	ND		1.0		ug/L			04/11/24 16:40	1
1,2-Dichloropropane	ND		1.0		ug/L			04/11/24 16:40	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/11/24 16:40	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/11/24 16:40	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/11/24 16:40	1
2-Hexanone	ND		10		ug/L			04/11/24 16:40	1
2-Methylnaphthalene	ND		5.0		ug/L			04/11/24 16:40	1
Acetone	ND		10		ug/L			04/11/24 16:40	1
Acrylonitrile	ND		20		ug/L			04/11/24 16:40	1
Benzene	ND		1.0		ug/L			04/11/24 16:40	1
Bromoform	ND		1.0		ug/L			04/11/24 16:40	1
Bromomethane	ND		1.0		ug/L			04/11/24 16:40	1
Carbon disulfide	ND		5.0		ug/L			04/11/24 16:40	1
Carbon tetrachloride	ND		1.0		ug/L			04/11/24 16:40	1
Chlorobenzene	ND		1.0		ug/L			04/11/24 16:40	1
Chloroethane	ND		1.0		ug/L			04/11/24 16:40	1
Chloroform	ND		1.0		ug/L			04/11/24 16:40	1
Chloromethane	ND		1.0		ug/L			04/11/24 16:40	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/11/24 16:40	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 16:40	1
Dibromomethane	ND		1.0		ug/L			04/11/24 16:40	1
Chlorobromomethane	ND		1.0		ug/L			04/11/24 16:40	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/11/24 16:40	1
Dichlorobromomethane	ND		1.0		ug/L			04/11/24 16:40	1
Ethyl ether	ND		1.0		ug/L			04/11/24 16:40	1
Ethylbenzene	ND		1.0		ug/L			04/11/24 16:40	1
Iodomethane	ND		1.0		ug/L			04/11/24 16:40	1
Isopropylbenzene	ND		1.0		ug/L			04/11/24 16:40	1
2-Butanone (MEK)	ND		10		ug/L			04/11/24 16:40	1
Naphthalene	ND		1.0		ug/L			04/11/24 16:40	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/11/24 16:40	1
n-Butylbenzene	ND		1.0		ug/L			04/11/24 16:40	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/11/24 16:40	1
N-Propylbenzene	ND		1.0		ug/L			04/11/24 16:40	1
Methylene Chloride	ND		5.0		ug/L			04/11/24 16:40	1

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

Lab Sample ID: MB 240-609300/8
Matrix: Water
Analysis Batch: 609300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/11/24 16:40	1
Tetrachloroethene	ND		1.0		ug/L			04/11/24 16:40	1
Toluene	ND		1.0		ug/L			04/11/24 16:40	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/11/24 16:40	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 16:40	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/11/24 16:40	1
Trichloroethene	ND		1.0		ug/L			04/11/24 16:40	1
Trichlorofluoromethane	ND		1.0		ug/L			04/11/24 16:40	1
1,2-Dibromoethane	ND		1.0		ug/L			04/11/24 16:40	1
Vinyl chloride	ND		1.0		ug/L			04/11/24 16:40	1
Xylenes, Total	ND		2.0		ug/L			04/11/24 16:40	1
Chlorodibromomethane	ND		1.0		ug/L			04/11/24 16:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*78 - 122*		*04/11/24 16:40*	*1*
Dibromofluoromethane (Surr)	*104*		*73 - 120*		*04/11/24 16:40*	*1*
4-Bromofluorobenzene (Surr)	*97*		*56 - 136*		*04/11/24 16:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*62 - 137*		*04/11/24 16:40*	*1*

Lab Sample ID: LCS 240-609300/5
Matrix: Water
Analysis Batch: 609300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane			25.0	26.3		ug/L		105	71 - 124		
1,1,1-Trichloroethane			25.0	25.9		ug/L		104	64 - 131		
1,1,2,2-Tetrachloroethane			25.0	28.4		ug/L		114	58 - 157		
1,1,2-Trichloroethane			25.0	26.6		ug/L		106	70 - 138		
1,1-Dichloroethane			25.0	28.7		ug/L		115	72 - 127		
1,1-Dichloroethene			25.0	25.9		ug/L		104	63 - 134		
1,2,3-Trichlorobenzene			25.0	21.1		ug/L		84	45 - 149		
1,2,3-Trichloropropane			25.0	28.5		ug/L		114	57 - 150		
1,2,4-Trichlorobenzene			25.0	21.4		ug/L		86	44 - 147		
1,2,4-Trimethylbenzene			25.0	26.6		ug/L		107	77 - 129		
1,2-Dibromo-3-Chloropropane			25.0	21.8		ug/L		87	53 - 135		
1,2-Dichlorobenzene			25.0	26.3		ug/L		105	78 - 120		
1,2-Dichloroethane			25.0	28.6		ug/L		115	66 - 128		
1,2-Dichloropropane			25.0	28.4		ug/L		114	75 - 133		
1,3,5-Trimethylbenzene			25.0	27.1		ug/L		108	75 - 129		
1,3-Dichlorobenzene			25.0	27.0		ug/L		108	80 - 120		
1,4-Dichlorobenzene			25.0	27.1		ug/L		109	80 - 120		
2-Hexanone			50.0	59.2		ug/L		118	43 - 167		
Acetone			50.0	55.5		ug/L		111	50 - 149		
Acrylonitrile			250	282		ug/L		113	51 - 161		
Benzene			25.0	27.2		ug/L		109	77 - 123		
Bromoform			25.0	23.0		ug/L		92	57 - 129		
Bromomethane			12.5	10.5		ug/L		84	36 - 142		
Carbon disulfide			25.0	28.6		ug/L		114	43 - 140		

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

Lab Sample ID: LCS 240-609300/5
Matrix: Water
Analysis Batch: 609300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon tetrachloride	25.0	25.5		ug/L		102	55 - 137
Chlorobenzene	25.0	27.3		ug/L		109	80 - 121
Chloroethane	12.5	11.8		ug/L		95	38 - 152
Chloroform	25.0	25.6		ug/L		103	74 - 122
Chloromethane	12.5	10.5		ug/L		84	47 - 143
cis-1,2-Dichloroethene	25.0	25.0		ug/L		100	77 - 123
cis-1,3-Dichloropropene	25.0	24.1		ug/L		96	64 - 130
Dibromomethane	25.0	24.0		ug/L		96	67 - 131
Chlorobromomethane	25.0	28.4		ug/L		114	71 - 121
Dichlorodifluoromethane	12.5	8.02		ug/L		64	34 - 153
Dichlorobromomethane	25.0	24.8		ug/L		99	69 - 126
Ethyl ether	25.0	24.9		ug/L		100	53 - 151
Ethylbenzene	25.0	27.0		ug/L		108	80 - 121
Iodomethane	25.0	21.4		ug/L		86	39 - 136
Isopropylbenzene	25.0	27.0		ug/L		108	74 - 128
2-Butanone (MEK)	50.0	50.0		ug/L		100	54 - 156
Naphthalene	25.0	21.0		ug/L		84	53 - 138
4-Methyl-2-pentanone (MIBK)	50.0	53.1		ug/L		106	46 - 158
n-Butylbenzene	25.0	26.5		ug/L		106	62 - 139
Methyl tert-butyl ether	25.0	25.4		ug/L		102	65 - 126
N-Propylbenzene	25.0	26.7		ug/L		107	76 - 127
Methylene Chloride	25.0	27.1		ug/L		109	71 - 125
Styrene	25.0	26.3		ug/L		105	80 - 135
Tetrachloroethene	25.0	26.5		ug/L		106	76 - 123
Toluene	25.0	27.7		ug/L		111	80 - 123
trans-1,2-Dichloroethene	25.0	25.4		ug/L		101	75 - 124
trans-1,3-Dichloropropene	25.0	27.2		ug/L		109	57 - 129
trans-1,4-Dichloro-2-butene	25.0	28.6		ug/L		114	14 - 173
Trichloroethene	25.0	25.1		ug/L		101	70 - 122
Trichlorofluoromethane	12.5	11.6		ug/L		93	30 - 170
1,2-Dibromoethane	25.0	26.5		ug/L		106	71 - 134
Vinyl chloride	12.5	11.1		ug/L		89	60 - 144
Xylenes, Total	50.0	52.5		ug/L		105	80 - 121
Chlorodibromomethane	25.0	25.9		ug/L		104	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*109*		*78 - 122*
Dibromofluoromethane (Surr)	*101*		*73 - 120*
4-Bromofluorobenzene (Surr)	*104*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*115*		*62 - 137*

Lab Sample ID: LCS 240-609300/6
Matrix: Water
Analysis Batch: 609300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*103*		*78 - 122*
Dibromofluoromethane (Surr)	*102*		*73 - 120*

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

Lab Sample ID: LCS 240-609300/6
Matrix: Water
Analysis Batch: 609300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*100*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*116*		*62 - 137*

Lab Sample ID: MB 240-609472/8
Matrix: Water
Analysis Batch: 609472

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/12/24 18:20	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/12/24 18:20	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/12/24 18:20	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/12/24 18:20	1
1,1-Dichloroethane	ND		1.0		ug/L			04/12/24 18:20	1
1,1-Dichloroethene	ND		1.0		ug/L			04/12/24 18:20	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/12/24 18:20	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/12/24 18:20	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/12/24 18:20	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/12/24 18:20	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/12/24 18:20	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/12/24 18:20	1
1,2-Dichloroethane	ND		1.0		ug/L			04/12/24 18:20	1
1,2-Dichloropropane	ND		1.0		ug/L			04/12/24 18:20	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/12/24 18:20	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/12/24 18:20	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/12/24 18:20	1
2-Hexanone	ND		10		ug/L			04/12/24 18:20	1
Acetone	ND		10		ug/L			04/12/24 18:20	1
Acrylonitrile	ND		20		ug/L			04/12/24 18:20	1
Benzene	ND		1.0		ug/L			04/12/24 18:20	1
Bromoform	ND		1.0		ug/L			04/12/24 18:20	1
Bromomethane	ND		1.0		ug/L			04/12/24 18:20	1
Carbon disulfide	ND		5.0		ug/L			04/12/24 18:20	1
Carbon tetrachloride	ND		1.0		ug/L			04/12/24 18:20	1
Chlorobenzene	ND		1.0		ug/L			04/12/24 18:20	1
Chloroethane	ND		1.0		ug/L			04/12/24 18:20	1
Chloroform	ND		1.0		ug/L			04/12/24 18:20	1
Chloromethane	ND		1.0		ug/L			04/12/24 18:20	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/12/24 18:20	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/12/24 18:20	1
Dibromomethane	ND		1.0		ug/L			04/12/24 18:20	1
Chlorobromomethane	ND		1.0		ug/L			04/12/24 18:20	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/12/24 18:20	1
Dichlorobromomethane	ND		1.0		ug/L			04/12/24 18:20	1
Ethyl ether	ND		1.0		ug/L			04/12/24 18:20	1
Ethylbenzene	ND		1.0		ug/L			04/12/24 18:20	1
Iodomethane	ND		1.0		ug/L			04/12/24 18:20	1
Isopropylbenzene	ND		1.0		ug/L			04/12/24 18:20	1
2-Butanone (MEK)	ND		10		ug/L			04/12/24 18:20	1

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

Lab Sample ID: MB 240-609472/8
Matrix: Water
Analysis Batch: 609472

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0		ug/L			04/12/24 18:20	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/12/24 18:20	1
n-Butylbenzene	ND		1.0		ug/L			04/12/24 18:20	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/12/24 18:20	1
N-Propylbenzene	ND		1.0		ug/L			04/12/24 18:20	1
Methylene Chloride	ND		5.0		ug/L			04/12/24 18:20	1
Styrene	ND		1.0		ug/L			04/12/24 18:20	1
Tetrachloroethene	ND		1.0		ug/L			04/12/24 18:20	1
Toluene	ND		1.0		ug/L			04/12/24 18:20	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/12/24 18:20	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/12/24 18:20	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/12/24 18:20	1
Trichloroethene	ND		1.0		ug/L			04/12/24 18:20	1
Trichlorofluoromethane	ND		1.0		ug/L			04/12/24 18:20	1
1,2-Dibromoethane	ND		1.0		ug/L			04/12/24 18:20	1
Vinyl chloride	ND		1.0		ug/L			04/12/24 18:20	1
Xylenes, Total	ND		2.0		ug/L			04/12/24 18:20	1
Chlorodibromomethane	ND		1.0		ug/L			04/12/24 18:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*78 - 122*		*04/12/24 18:20*	*1*
Dibromofluoromethane (Surr)	*103*		*73 - 120*		*04/12/24 18:20*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*04/12/24 18:20*	*1*
1,2-Dichloroethane-d4 (Surr)	*117*		*62 - 137*		*04/12/24 18:20*	*1*

Lab Sample ID: LCS 240-609472/5
Matrix: Water
Analysis Batch: 609472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane			25.0	26.0		ug/L		104	71 - 124		
1,1,1-Trichloroethane			25.0	26.3		ug/L		105	64 - 131		
1,1,2,2-Tetrachloroethane			25.0	28.3		ug/L		113	58 - 157		
1,1,2-Trichloroethane			25.0	26.3		ug/L		105	70 - 138		
1,1-Dichloroethane			25.0	28.7		ug/L		115	72 - 127		
1,1-Dichloroethene			25.0	25.9		ug/L		104	63 - 134		
1,2,3-Trichlorobenzene			25.0	21.5		ug/L		86	45 - 149		
1,2,3-Trichloropropane			25.0	28.2		ug/L		113	57 - 150		
1,2,4-Trichlorobenzene			25.0	21.7		ug/L		87	44 - 147		
1,2,4-Trimethylbenzene			25.0	26.8		ug/L		107	77 - 129		
1,2-Dibromo-3-Chloropropane			25.0	21.1		ug/L		84	53 - 135		
1,2-Dichlorobenzene			25.0	26.6		ug/L		106	78 - 120		
1,2-Dichloroethane			25.0	28.6		ug/L		114	66 - 128		
1,2-Dichloropropane			25.0	28.3		ug/L		113	75 - 133		
1,3,5-Trimethylbenzene			25.0	26.9		ug/L		107	75 - 129		
1,3-Dichlorobenzene			25.0	27.2		ug/L		109	80 - 120		
1,4-Dichlorobenzene			25.0	27.0		ug/L		108	80 - 120		
2-Hexanone			50.0	60.4		ug/L		121	43 - 167		

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

Lab Sample ID: LCS 240-609472/5
Matrix: Water
Analysis Batch: 609472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	50.0	59.4		ug/L		119	50 - 149
Acrylonitrile	250	284		ug/L		114	51 - 161
Benzene	25.0	27.2		ug/L		109	77 - 123
Bromoform	25.0	22.5		ug/L		90	57 - 129
Bromomethane	12.5	10.6		ug/L		85	36 - 142
Carbon disulfide	25.0	28.7		ug/L		115	43 - 140
Carbon tetrachloride	25.0	25.6		ug/L		103	55 - 137
Chlorobenzene	25.0	27.2		ug/L		109	80 - 121
Chloroethane	12.5	11.8		ug/L		95	38 - 152
Chloroform	25.0	25.7		ug/L		103	74 - 122
Chloromethane	12.5	10.6		ug/L		85	47 - 143
cis-1,2-Dichloroethene	25.0	24.8		ug/L		99	77 - 123
cis-1,3-Dichloropropene	25.0	23.9		ug/L		96	64 - 130
Dibromomethane	25.0	23.4		ug/L		94	67 - 131
Chlorobromomethane	25.0	28.2		ug/L		113	71 - 121
Dichlorodifluoromethane	12.5	7.42		ug/L		59	34 - 153
Dichlorobromomethane	25.0	24.9		ug/L		99	69 - 126
Ethyl ether	25.0	25.0		ug/L		100	53 - 151
Ethylbenzene	25.0	26.8		ug/L		107	80 - 121
Iodomethane	25.0	21.5		ug/L		86	39 - 136
Isopropylbenzene	25.0	26.5		ug/L		106	74 - 128
2-Butanone (MEK)	50.0	49.9		ug/L		100	54 - 156
Naphthalene	25.0	21.2		ug/L		85	53 - 138
4-Methyl-2-pentanone (MIBK)	50.0	53.4		ug/L		107	46 - 158
n-Butylbenzene	25.0	26.8		ug/L		107	62 - 139
Methyl tert-butyl ether	25.0	25.4		ug/L		102	65 - 126
N-Propylbenzene	25.0	26.8		ug/L		107	76 - 127
Methylene Chloride	25.0	26.9		ug/L		108	71 - 125
Styrene	25.0	26.2		ug/L		105	80 - 135
Tetrachloroethene	25.0	26.6		ug/L		106	76 - 123
Toluene	25.0	27.9		ug/L		112	80 - 123
trans-1,2-Dichloroethene	25.0	25.3		ug/L		101	75 - 124
trans-1,3-Dichloropropene	25.0	26.8		ug/L		107	57 - 129
trans-1,4-Dichloro-2-butene	25.0	28.3		ug/L		113	14 - 173
Trichloroethene	25.0	25.6		ug/L		102	70 - 122
Trichlorofluoromethane	12.5	11.0		ug/L		88	30 - 170
1,2-Dibromoethane	25.0	26.4		ug/L		106	71 - 134
Vinyl chloride	12.5	10.9		ug/L		88	60 - 144
Xylenes, Total	50.0	51.8		ug/L		104	80 - 121
Chlorodibromomethane	25.0	25.3		ug/L		101	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*110*		*78 - 122*
Dibromofluoromethane (Surr)	*101*		*73 - 120*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*114*		*62 - 137*

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

Lab Sample ID: LCS 240-609472/6
Matrix: Water
Analysis Batch: 609472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*105*		*78 - 122*
Dibromofluoromethane (Surr)	*105*		*73 - 120*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*120*		*62 - 137*

Method: 8260D SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-609736/6
Matrix: Water
Analysis Batch: 609736

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		2.0		ug/L			04/16/24 11:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*68 - 127*		*04/16/24 11:34*	*1*

Lab Sample ID: LCS 240-609736/4
Matrix: Water
Analysis Batch: 609736

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			10.0	9.90		ug/L		99	75 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*68 - 127*

Lab Sample ID: 240-202563-5 MS
Matrix: Water
Analysis Batch: 609736

Client Sample ID: TRIP BLANK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane	ND		10.0	10.6		ug/L		106	20 - 180		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*68 - 127*

Lab Sample ID: 240-202563-5 MSD
Matrix: Water
Analysis Batch: 609736

Client Sample ID: TRIP BLANK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	ND		10.0	9.91		ug/L		99	20 - 180	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*68 - 127*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Lab Sample ID: MB 200-203346/1-A
Matrix: Water
Analysis Batch: 203368

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 203346

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		04/23/24 10:15	04/23/24 16:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*101*		*46 - 130*	*04/23/24 10:15*	*04/23/24 16:59*	*1*

Lab Sample ID: LCS 200-203346/2-A
Matrix: Water
Analysis Batch: 203368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 203346

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			8.00	8.43		ug/L		105	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dioxane-d8 (Surr)	*99*		*46 - 130*

QC Association Summary

Client: Tetra Tech GEO
Job ID: 240-202563-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

GC/MS VOA

Analysis Batch: 609300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-202563-1	W-85-92	Total/NA	Water	8260D	
240-202563-2	W-89-92	Total/NA	Water	8260D	
240-202563-3	W-87-92	Total/NA	Water	8260D	
240-202563-4	W-84-92	Total/NA	Water	8260D	
240-202563-5	TRIP BLANK	Total/NA	Water	8260D	
MB 240-609300/8	Method Blank	Total/NA	Water	8260D	
LCS 240-609300/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-609300/6	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 609472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-202563-1 - RA	W-85-92	Total/NA	Water	8260D	
MB 240-609472/8	Method Blank	Total/NA	Water	8260D	
LCS 240-609472/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-609472/6	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 609736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-202563-5	TRIP BLANK	Total/NA	Water	8260D SIM	
MB 240-609736/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-609736/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-202563-5 MS	TRIP BLANK	Total/NA	Water	8260D SIM	
240-202563-5 MSD	TRIP BLANK	Total/NA	Water	8260D SIM	

GC/MS Semi VOA

Prep Batch: 203346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-202563-3	W-87-92	Total/NA	Water	522	
MB 200-203346/1-A	Method Blank	Total/NA	Water	522	
LCS 200-203346/2-A	Lab Control Sample	Total/NA	Water	522	

Analysis Batch: 203368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 200-203346/1-A	Method Blank	Total/NA	Water	522	203346
LCS 200-203346/2-A	Lab Control Sample	Total/NA	Water	522	203346

Analysis Batch: 203408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-202563-3	W-87-92	Total/NA	Water	522	203346

Lab Chronicle

Client: Tetra Tech GEO
Job ID: 240-202563-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-85-92
Lab Sample ID: 240-202563-1
Date Collected: 04/05/24 12:15
Matrix: Water
Date Received: 04/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	609300	LEE	EET CLE	04/11/24 20:41
Total/NA	Analysis	8260D	RA	2	609472	CDG	EET CLE	04/12/24 19:33

Client Sample ID: W-89-92
Lab Sample ID: 240-202563-2
Date Collected: 04/05/24 13:00
Matrix: Water
Date Received: 04/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	609300	LEE	EET CLE	04/11/24 21:05

Client Sample ID: W-87-92
Lab Sample ID: 240-202563-3
Date Collected: 04/05/24 14:05
Matrix: Water
Date Received: 04/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	609300	LEE	EET CLE	04/11/24 21:29
Total/NA	Prep	522			203346	DO	EET BUR	04/23/24 10:15
Total/NA	Analysis	522		4	203408	GGG	EET BUR	04/24/24 13:48

Client Sample ID: W-84-92
Lab Sample ID: 240-202563-4
Date Collected: 04/05/24 15:15
Matrix: Water
Date Received: 04/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	609300	LEE	EET CLE	04/11/24 21:53

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-202563-5
Date Collected: 04/05/24 00:00
Matrix: Water
Date Received: 04/10/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	609300	LEE	EET CLE	04/11/24 17:05
Total/NA	Analysis	8260D SIM		1	609736	MDH	EET CLE	04/16/24 11:58

Laboratory References:

EET BUR = Eurofins Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Tetra Tech GEO
Job ID: 240-202563-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	06-30-24
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Laboratory: Eurofins Burlington

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2336	02-25-26
Connecticut	State	PH-0751	09-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	05-18-24
Florida	NELAP	E87467	06-30-24
Minnesota	NELAP	050-999-436	12-31-24
New Hampshire	NELAP	2006	12-18-24
New Jersey	NELAP	VT972	06-30-24
New York	NELAP	10391	03-31-25
Pennsylvania	NELAP	68-00489	04-30-25
Rhode Island	State	LAO00298	05-09-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00272	12-19-26
Vermont	State	VT4000	02-10-25
Virginia	NELAP	460209	12-14-24
Wisconsin	State	399140830	08-31-24

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone (330) 497-9396 Phone (330) 497-0772

MICHIGAN 190

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler: TVM	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-119054-41599.1
Client Contact: Patti McCall	Phone: 734-626-2418	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: Tetra Tech GEO	PWSID:			Job #:
Address: 1136 Oak Valley Dr. Suite 100	Due Date Requested:			
City: Ann Arbor	TAT Requested (days): Standard			
State, Zip: MI, 48108	Compliance Project: Δ Yes Δ No			
Phone: 734-213-2204(Tel)	PO #: Purchase Order not required			
Email: patti.mccall@tetratech.com	WO #: 117-1054033 / 1.3			
Project Name: Ann Arbor Landfill Semi-Annual GW	Project #: 24027566			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D - VOCs (City of AnnArbor GW List)	8260D_SIM_1,4-Dioxane - TVM	522 - 1,4 Dioxane (LC/MS SIM)	8260D SIM - 1,4 Dioxane	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A				
W-85-92	4/5/24	12:15	G	Water	n	n	X				6	
W-89-92	4/5/24	13:00	G	Water	n	n	X				6	
W-87-92	4/5/24	14:05	G	Water	n	n	X		X		7	
W-84-92	4/5/24	15:15	G	Water	n	n	X				6	
Trip Blank	—	—	—	Water			X		~~X~~ TVM	X	6	
				Water								
				Water								
				Water								
				Water								
				Water								
				Water								

240-202563 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	T Mulvey	4/5/24 16:30	TE	TE Cold Storage	4/5/24 16:30	TE
2	TE Cold Storage T Mulvey	4/8/24 14:30	TE		4/5/24 1430	EETNC
3		4/9/24 1500			4-10-24 800	EETNC

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Eurofins - Cleveland Sample Receipt Form/Narrative — Login # : 240563
Barberton Facility

Client Tetra Tech GEO Site Name _____ Cooler unpacked by: Nancy Ryf

Cooler Received on 4-10-24 Opened on 4-10 24

FedEx 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

Receipt After-hours Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # 2 Foam Box Client Cooler Box Other _____

Packing material used Bubble Wrap Foam Plastic Bag None Other _____

COOLANT Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☒ See Multiple Cooler Form

IR GUN # 18 (CF 0.0 °C) Observed Cooler Temp ____ °C Corrected Cooler Temp ____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 each	Yes	No
Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3 Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5 Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6 Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7 Did all bottles arrive in good condition (Unbroken)?	Yes	No
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	Yes	No
11 Sufficient quantity received to perform indicated analyses?	Yes	No
12 Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC329089
14. Were VOAs on the COC?	Yes	No
15 Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	No NA
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 62225	Yes	No
17 Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page Samples processed by:

19 SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container
Sample(s) _____ were received with bubble >6 mm in diameter (Notify PM)

20 SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory
Time preserved _____ Preservative(s) added/Lot number(s) _____

VOA Sample Preservation - Date/Time VOAs Frozen _____

Login # _____

Eurofins - Cleveland Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
(EC) Client Box Other	IR GUN #: 18	1.6	1.6	(Wet Ice) Blue Ice Dry Ice Water None
(EC) Client Box Other	IR GUN #: 18	1.6	1.6	(Wet Ice) Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

4/10/2024

Login Container Summary Report

240-202563

5/17/2024 (Rev. 1)

Temperature readings _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
W-85-92	240-202563 A 1	Voa Vial 40ml - Hydrochloric Acid				
W-85-92	240 202563-B-1	Voa Vial 40ml - Hydrochloric Acid				
W-85-92	240-202563-C-1	Voa Vial 40ml - Hydrochloric Acid				
W-85-92	240-202563-D-1	Voa Vial 40ml - unpreserved				
W 85-92	240-202563-E-1	Voa Vial 40ml unpreserved				
W-85-92	240 202563-F-1	Voa Vial 40ml - unpreserved				
W-89-92	240-202563-A-2	Voa Vial 40ml - Hydrochloric Acid				
W-89-92	240-202563 B-2	Voa Vial 40ml - Hydrochloric Acid				
W 89-92	240-202563-C-2	Voa Vial 40ml Hydrochloric Acid				
W-89-92	240-202563 D-2	Voa Vial 40ml - unpreserved				
W-89-92	240 202563-E-2	Voa Vial 40ml unpreserved				
W-89-92	240-202563 F 2	Voa Vial 40ml - unpreserved				
W-87-92	240-202563-A-3	Voa Vial 40ml Hydrochloric Acid				
W-87-92	240-202563 B 3	Voa Vial 40ml - Hydrochloric Acid				
W-87-92	240-202563-C-3	Voa Vial 40ml - Hydrochloric Acid				
W-87-92	240-202563 D-3	Voa Vial 40ml - unpreserved				
W-87-92	240-202563-E-3	Voa Vial 40ml - unpreserved				
W-87-92	240-202563 F 3	Voa Vial 40ml - unpreserved				
W-87-92	240-202563-G-3	Amber Glass 250mL - hydrochloric acid				
W-84-92	240-202563 A-4	Voa Vial 40ml Hydrochloric Acid				
W-84-92	240-202563-B-4	Voa Vial 40ml - Hydrochloric Acid				
W-84-92	240-202563-C-4	Voa Vial 40ml Hydrochloric Acid				
W-84-92	240-202563-D-4	Voa Vial 40ml - unpreserved				
W-84-92	240 202563 E-4	Voa Vial 40ml - unpreserved				
W-84-92	240 202563-F-4	Voa Vial 40ml - unpreserved				
TRIP BLANK	240-202563 A 5	Voa Vial 40ml - Hydrochloric Acid				
TRIP BLANK	240-202563-B-5	Voa Vial 40ml - Hydrochloric Acid				
TRIP BLANK	240-202563-C-5	Voa Vial 40ml - Hydrochloric Acid				
TRIP BLANK	240-202563-D-5	Voa Vial 40ml - unpreserved				
TRIP BLANK	240-202563-E-5	Voa Vial 40ml - unpreserved				
TRIP BLANK	240-202563-F 5	Voa Vial 40ml - unpreserved				

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

240-202563 Chain of Custody

Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM. Brooks, Kris M		
Client Contact: Shipping/Receiving	Phone.	E-Mail Kris.Brooks@et.eurofinsus.com	Michigan	Page 1 of 1
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note).		Job #: 240-202563-1
Address: 530 Community Drive, Suite 11,	Due Date Requested: 4/23/2024			
City: South Burlington	TAT Requested (days):			
State, Zip: VT, 05403	PO #:			
Phone: 802-660-1990(Tel) 802-660-1919(Fax)	WO #:			
Email				
Project Name: Ann Arbor Landfill 2 Year GW & WW Prog	Project #: 24027566			
Site.	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	522/522_CWA_Prep 1,4 Dioxane (GC/MS SIM)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
W-87-92 (240-202563-3)	4/5/24	14:05 Eastern		Water			X	1	

Note Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC

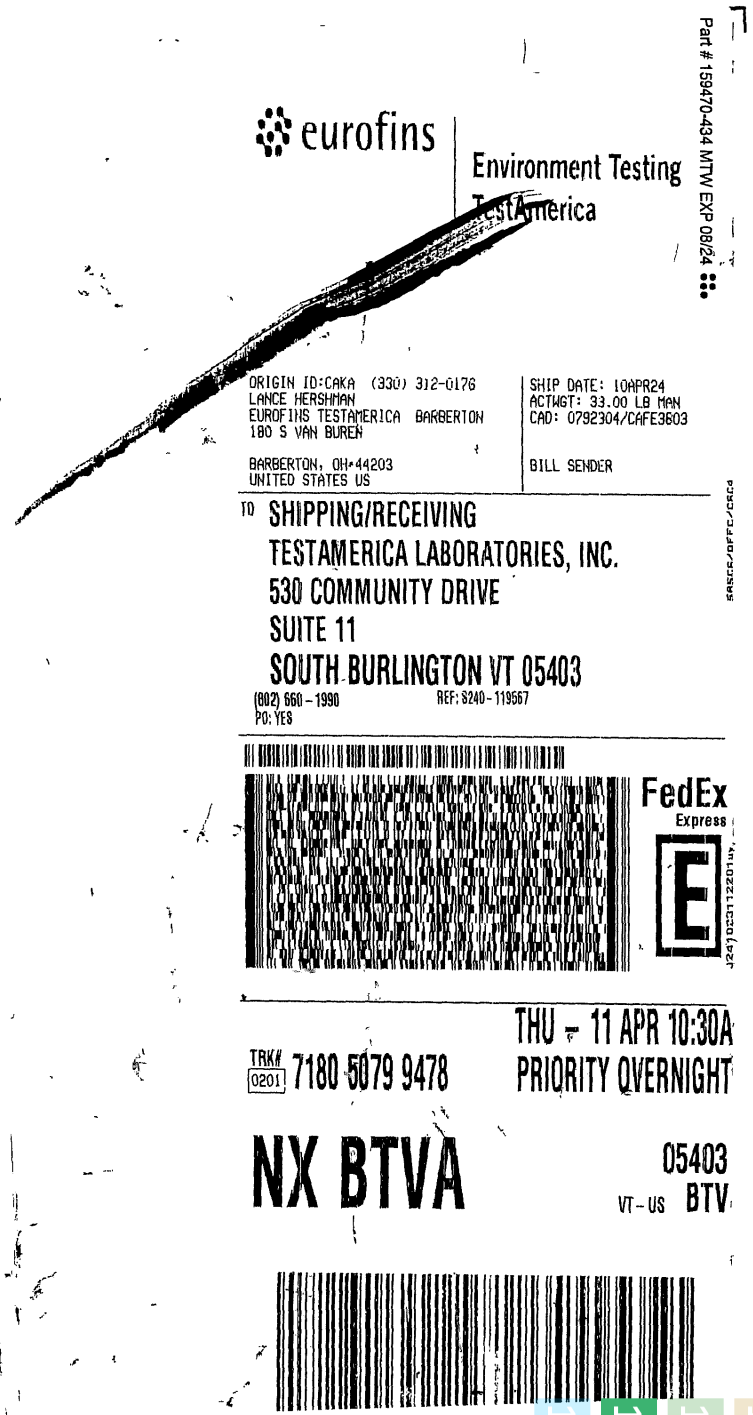
Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by: Rachael Marcello	Date/Time: 4-10-24 1340	Company EETNC	Received by:	Date/Time: 4/11/24 1035	Company ETATBUR
Relinquished by:	Date/Time.	Company	Received by:	Date/Time.	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time.	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 06/08/2021

Do not lift using this tag.



Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 240-202563-1

Login Number: 202563
List Number: 2
Creator: Muniz, Luca

List Source: Eurofins Burlington
List Creation: 04/11/24 04:00 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.1ºC
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Alison Rauss
Tetra Tech GEO
1136 Oak Valley Dr.
Suite 100
Ann Arbor, Michigan 48108

Generated 4/17/2024 3:58:45 AM

JOB DESCRIPTION

Ann Arbor Landfill Semi-Annual GW

JOB NUMBER

240-202182-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
4/17/2024 3:58:45 AM

Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Method Summary 6
Sample Summary 7
Detection Summary 8
Client Sample Results 9
Surrogate Summary 11
QC Sample Results 12
QC Association Summary 16
Lab Chronicle 17
Certification Summary 18
Chain of Custody 19

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 240-202182-1 — Eurofins Cleveland

Job Narrative
240-202182-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 4/4/2024 8:00 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.5°C, 2.5°C and 3.4°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-609132 was outside the method criteria for the following analyte(s): 1,1,2,2-Tetrachloroethane, 1,1-Dichloroethene, Bromomethane, Carbon disulfide, Chloroethane, Dichlorodifluoromethane, Trichlorofluoromethane and Vinyl chloride. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Tetra Tech GEO
Job ID: 240-202182-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CLE
5030C	Purge and Trap	SW846	EET CLE

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Tetra Tech GEO
Job ID: 240-202182-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-202182-1	FIELD BLANK	Water	04/03/24 10:30	04/04/24 08:00

Detection Summary

Client: Tetra Tech GEO
Job ID: 240-202182-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: FIELD BLANK
Lab Sample ID: 240-202182-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	10		10		ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-202182-1

Client Sample ID: FIELD BLANK
Date Collected: 04/03/24 10:30
Date Received: 04/04/24 08:00

Lab Sample ID: 240-202182-1
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 01:51	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/11/24 01:51	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/11/24 01:51	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/11/24 01:51	1
1,1-Dichloroethane	ND		1.0		ug/L			04/11/24 01:51	1
1,1-Dichloroethene	ND		1.0		ug/L			04/11/24 01:51	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/11/24 01:51	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/11/24 01:51	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/11/24 01:51	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/11/24 01:51	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/11/24 01:51	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/11/24 01:51	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/11/24 01:51	1
1,2-Dichloroethane	ND		1.0		ug/L			04/11/24 01:51	1
1,2-Dichloropropane	ND		1.0		ug/L			04/11/24 01:51	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/11/24 01:51	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/11/24 01:51	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/11/24 01:51	1
2-Hexanone	ND		10		ug/L			04/11/24 01:51	1
2-Methylnaphthalene	ND		5.0		ug/L			04/11/24 01:51	1
Chlorobromomethane	ND		1.0		ug/L			04/11/24 01:51	1
Acetone	**10**		10		ug/L			04/11/24 01:51	1
Acrylonitrile	ND		20		ug/L			04/11/24 01:51	1
Benzene	ND		1.0		ug/L			04/11/24 01:51	1
Bromoform	ND		1.0		ug/L			04/11/24 01:51	1
Bromomethane	ND		1.0		ug/L			04/11/24 01:51	1
Carbon disulfide	ND		5.0		ug/L			04/11/24 01:51	1
Carbon tetrachloride	ND		1.0		ug/L			04/11/24 01:51	1
Chlorobenzene	ND		1.0		ug/L			04/11/24 01:51	1
Chloroethane	ND		1.0		ug/L			04/11/24 01:51	1
Chloroform	ND		1.0		ug/L			04/11/24 01:51	1
Chloromethane	ND		1.0		ug/L			04/11/24 01:51	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/11/24 01:51	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 01:51	1
Dibromomethane	ND		1.0		ug/L			04/11/24 01:51	1
Dichlorobromomethane	ND		1.0		ug/L			04/11/24 01:51	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/11/24 01:51	1
Ethyl ether	ND		1.0		ug/L			04/11/24 01:51	1
Ethylbenzene	ND		1.0		ug/L			04/11/24 01:51	1
1,2-Dibromoethane	ND		1.0		ug/L			04/11/24 01:51	1
Iodomethane	ND		1.0		ug/L			04/11/24 01:51	1
Naphthalene	ND		1.0		ug/L			04/11/24 01:51	1
n-Butylbenzene	ND		1.0		ug/L			04/11/24 01:51	1
Isopropylbenzene	ND		1.0		ug/L			04/11/24 01:51	1
N-Propylbenzene	ND		1.0		ug/L			04/11/24 01:51	1
2-Butanone (MEK)	ND		10		ug/L			04/11/24 01:51	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/11/24 01:51	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/11/24 01:51	1
Methylene Chloride	ND		5.0		ug/L			04/11/24 01:51	1

Client: Tetra Tech GEO
Job ID: 240-202182-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: FIELD BLANK
Lab Sample ID: 240-202182-1
Date Collected: 04/03/24 10:30
Matrix: Water
Date Received: 04/04/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			04/11/24 01:51	1
Tetrachloroethene	ND		1.0		ug/L			04/11/24 01:51	1
Toluene	ND		1.0		ug/L			04/11/24 01:51	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/11/24 01:51	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/11/24 01:51	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/11/24 01:51	1
Trichloroethene	ND		1.0		ug/L			04/11/24 01:51	1
Trichlorofluoromethane	ND		1.0		ug/L			04/11/24 01:51	1
Vinyl chloride	ND		1.0		ug/L			04/11/24 01:51	1
Xylenes, Total	ND		2.0		ug/L			04/11/24 01:51	1
Chlorodibromomethane	ND		1.0		ug/L			04/11/24 01:51	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*04/11/24 01:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*62 - 137*		*04/11/24 01:51*	*1*
4-Bromofluorobenzene (Surr)	*86*		*56 - 136*		*04/11/24 01:51*	*1*
Toluene-d8 (Surr)	*96*		*78 - 122*		*04/11/24 01:51*	*1*
Dibromofluoromethane (Surr)	*101*		*73 - 120*		*04/11/24 01:51*	*1*

Surrogate Summary

Client: Tetra Tech GEO
Job ID: 240-202182-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-202182-1	FIELD BLANK	98	86	96	101
LCS 240-609132/4	Lab Control Sample	86	95	100	90
LCS 240-609132/5	Lab Control Sample	90	92	93	91
MB 240-609132/7	Method Blank	94	85	95	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-609132/7
Matrix: Water
Analysis Batch: 609132

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			04/10/24 23:47	1
1,1,1-Trichloroethane	ND		1.0		ug/L			04/10/24 23:47	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			04/10/24 23:47	1
1,1,2-Trichloroethane	ND		1.0		ug/L			04/10/24 23:47	1
1,1-Dichloroethane	ND		1.0		ug/L			04/10/24 23:47	1
1,1-Dichloroethene	ND		1.0		ug/L			04/10/24 23:47	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			04/10/24 23:47	1
1,2,3-Trichloropropane	ND		1.0		ug/L			04/10/24 23:47	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			04/10/24 23:47	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/10/24 23:47	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			04/10/24 23:47	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			04/10/24 23:47	1
1,2-Dichlorobenzene	ND		1.0		ug/L			04/10/24 23:47	1
1,2-Dichloroethane	ND		1.0		ug/L			04/10/24 23:47	1
1,2-Dichloropropane	ND		1.0		ug/L			04/10/24 23:47	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			04/10/24 23:47	1
1,3-Dichlorobenzene	ND		1.0		ug/L			04/10/24 23:47	1
1,4-Dichlorobenzene	ND		1.0		ug/L			04/10/24 23:47	1
2-Hexanone	ND		10		ug/L			04/10/24 23:47	1
2-Methylnaphthalene	ND		5.0		ug/L			04/10/24 23:47	1
Chlorobromomethane	ND		1.0		ug/L			04/10/24 23:47	1
Acetone	ND		10		ug/L			04/10/24 23:47	1
Acrylonitrile	ND		20		ug/L			04/10/24 23:47	1
Benzene	ND		1.0		ug/L			04/10/24 23:47	1
Bromoform	ND		1.0		ug/L			04/10/24 23:47	1
Bromomethane	ND		1.0		ug/L			04/10/24 23:47	1
Carbon disulfide	ND		5.0		ug/L			04/10/24 23:47	1
Carbon tetrachloride	ND		1.0		ug/L			04/10/24 23:47	1
Chlorobenzene	ND		1.0		ug/L			04/10/24 23:47	1
Chloroethane	ND		1.0		ug/L			04/10/24 23:47	1
Chloroform	ND		1.0		ug/L			04/10/24 23:47	1
Chloromethane	ND		1.0		ug/L			04/10/24 23:47	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			04/10/24 23:47	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			04/10/24 23:47	1
Dibromomethane	ND		1.0		ug/L			04/10/24 23:47	1
Dichlorobromomethane	ND		1.0		ug/L			04/10/24 23:47	1
Dichlorodifluoromethane	ND		1.0		ug/L			04/10/24 23:47	1
Ethyl ether	ND		1.0		ug/L			04/10/24 23:47	1
Ethylbenzene	ND		1.0		ug/L			04/10/24 23:47	1
1,2-Dibromoethane	ND		1.0		ug/L			04/10/24 23:47	1
Iodomethane	ND		1.0		ug/L			04/10/24 23:47	1
Naphthalene	ND		1.0		ug/L			04/10/24 23:47	1
n-Butylbenzene	ND		1.0		ug/L			04/10/24 23:47	1
Isopropylbenzene	ND		1.0		ug/L			04/10/24 23:47	1
N-Propylbenzene	ND		1.0		ug/L			04/10/24 23:47	1
2-Butanone (MEK)	ND		10		ug/L			04/10/24 23:47	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			04/10/24 23:47	1
Methyl tert-butyl ether	ND		1.0		ug/L			04/10/24 23:47	1

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

Lab Sample ID: MB 240-609132/7
Matrix: Water
Analysis Batch: 609132

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		5.0		ug/L			04/10/24 23:47	1
Styrene	ND		1.0		ug/L			04/10/24 23:47	1
Tetrachloroethene	ND		1.0		ug/L			04/10/24 23:47	1
Toluene	ND		1.0		ug/L			04/10/24 23:47	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			04/10/24 23:47	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			04/10/24 23:47	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			04/10/24 23:47	1
Trichloroethene	ND		1.0		ug/L			04/10/24 23:47	1
Trichlorofluoromethane	ND		1.0		ug/L			04/10/24 23:47	1
Vinyl chloride	ND		1.0		ug/L			04/10/24 23:47	1
Xylenes, Total	ND		2.0		ug/L			04/10/24 23:47	1
Chlorodibromomethane	ND		1.0		ug/L			04/10/24 23:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*		*04/10/24 23:47*	*1*
4-Bromofluorobenzene (Surr)	*85*		*56 - 136*		*04/10/24 23:47*	*1*
Toluene-d8 (Surr)	*95*		*78 - 122*		*04/10/24 23:47*	*1*
Dibromofluoromethane (Surr)	*95*		*73 - 120*		*04/10/24 23:47*	*1*

Lab Sample ID: LCS 240-609132/4
Matrix: Water
Analysis Batch: 609132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	25.0	27.1		ug/L		109	71 - 124
1,1,1-Trichloroethane	25.0	23.2		ug/L		93	64 - 131
1,1,2,2-Tetrachloroethane	25.0	19.1		ug/L		77	58 - 157
1,1,2-Trichloroethane	25.0	25.6		ug/L		102	70 - 138
1,1-Dichloroethane	25.0	24.3		ug/L		97	72 - 127
1,1-Dichloroethene	25.0	19.4		ug/L		78	63 - 134
1,2,3-Trichlorobenzene	25.0	28.0		ug/L		112	45 - 149
1,2,3-Trichloropropane	25.0	23.9		ug/L		95	57 - 150
1,2,4-Trichlorobenzene	25.0	27.3		ug/L		109	44 - 147
1,2,4-Trimethylbenzene	25.0	22.8		ug/L		91	77 - 129
1,2-Dibromo-3-Chloropropane	25.0	23.2		ug/L		93	53 - 135
1,2-Dichlorobenzene	25.0	25.2		ug/L		101	78 - 120
1,2-Dichloroethane	25.0	23.1		ug/L		92	66 - 128
1,2-Dichloropropane	25.0	26.1		ug/L		104	75 - 133
1,3,5-Trimethylbenzene	25.0	23.0		ug/L		92	75 - 129
1,3-Dichlorobenzene	25.0	24.9		ug/L		100	80 - 120
1,4-Dichlorobenzene	25.0	24.8		ug/L		99	80 - 120
2-Hexanone	50.0	52.6		ug/L		105	43 - 167
Chlorobromomethane	25.0	23.1		ug/L		92	71 - 121
Acetone	50.0	44.4		ug/L		89	50 - 149
Acrylonitrile	250	261		ug/L		104	51 - 161
Benzene	25.0	22.5		ug/L		90	77 - 123
Bromoform	25.0	27.5		ug/L		110	57 - 129
Bromomethane	12.5	8.81		ug/L		71	36 - 142

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

Lab Sample ID: LCS 240-609132/4
Matrix: Water
Analysis Batch: 609132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon disulfide	25.0	20.3		ug/L		81	43 - 140
Carbon tetrachloride	25.0	22.9		ug/L		91	55 - 137
Chlorobenzene	25.0	25.9		ug/L		104	80 - 121
Chloroethane	12.5	9.09		ug/L		73	38 - 152
Chloroform	25.0	21.8		ug/L		87	74 - 122
Chloromethane	12.5	10.6		ug/L		85	47 - 143
cis-1,2-Dichloroethene	25.0	21.7		ug/L		87	77 - 123
cis-1,3-Dichloropropene	25.0	20.6		ug/L		82	64 - 130
Dibromomethane	25.0	22.5		ug/L		90	67 - 131
Dichlorobromomethane	25.0	22.1		ug/L		88	69 - 126
Dichlorodifluoromethane	12.5	6.49		ug/L		52	34 - 153
Ethyl ether	25.0	23.5		ug/L		94	53 - 151
Ethylbenzene	25.0	25.2		ug/L		101	80 - 121
1,2-Dibromoethane	25.0	24.5		ug/L		98	71 - 134
Iodomethane	25.0	23.1		ug/L		93	39 - 136
Naphthalene	25.0	24.2		ug/L		97	53 - 138
n-Butylbenzene	25.0	20.4		ug/L		81	62 - 139
Isopropylbenzene	25.0	24.5		ug/L		98	74 - 128
N-Propylbenzene	25.0	23.3		ug/L		93	76 - 127
2-Butanone (MEK)	50.0	48.9		ug/L		98	54 - 156
4-Methyl-2-pentanone (MIBK)	50.0	49.6		ug/L		99	46 - 158
Methyl tert-butyl ether	25.0	20.7		ug/L		83	65 - 126
Methylene Chloride	25.0	19.8		ug/L		79	71 - 125
Styrene	25.0	25.7		ug/L		103	80 - 135
Tetrachloroethene	25.0	26.2		ug/L		105	76 - 123
Toluene	25.0	24.4		ug/L		98	80 - 123
trans-1,2-Dichloroethene	25.0	21.6		ug/L		86	75 - 124
trans-1,3-Dichloropropene	25.0	24.0		ug/L		96	57 - 129
trans-1,4-Dichloro-2-butene	25.0	22.8		ug/L		91	14 - 173
Trichloroethene	25.0	24.9		ug/L		100	70 - 122
Trichlorofluoromethane	12.5	8.74		ug/L		70	30 - 170
Vinyl chloride	12.5	9.73		ug/L		78	60 - 144
Xylenes, Total	50.0	50.4		ug/L		101	80 - 121
Chlorodibromomethane	25.0	25.9		ug/L		104	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*62 - 137*
4-Bromofluorobenzene (Surr)	*95*		*56 - 136*
Toluene-d8 (Surr)	*100*		*78 - 122*
Dibromofluoromethane (Surr)	*90*		*73 - 120*

Lab Sample ID: LCS 240-609132/5
Matrix: Water
Analysis Batch: 609132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*62 - 137*
4-Bromofluorobenzene (Surr)	*92*		*56 - 136*

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

Lab Sample ID: LCS 240-609132/5
Matrix: Water
Analysis Batch: 609132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	93		78 - 122
Dibromofluoromethane (Surr)	91		73 - 120

QC Association Summary

Client: Tetra Tech GEO
Job ID: 240-202182-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

GC/MS VOA

Analysis Batch: 609132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-202182-1	FIELD BLANK	Total/NA	Water	8260D	
MB 240-609132/7	Method Blank	Total/NA	Water	8260D	
LCS 240-609132/4	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-609132/5	Lab Control Sample	Total/NA	Water	8260D	

Lab Chronicle

Client: Tetra Tech GEO
Job ID: 240-202182-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: FIELD BLANK
Lab Sample ID: 240-202182-1
Date Collected: 04/03/24 10:30
Matrix: Water
Date Received: 04/04/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	609132	LEE	EET CLE	04/11/24 01:51

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Tetra Tech GEO
Job ID: 240-202182-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	06-30-24
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone (330) 497-9396 Phone (330) 497-0772

MICHIGAN 190

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler: TVM	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-119054-41599.1
Client Contact: Patti McCall	Phone: 734-626-2418	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: Tetra Tech GEO	PWSID:			Job #:
Address: 1136 Oak Valley Dr. Suite 100	Due Date Requested:			
City: Ann Arbor	TAT Requested (days): Standard			
State, Zip: MI, 48108	Compliance Project: Δ Yes Δ No			
Phone: 734-213-2204(Tel)	PO #: Purchase Order not required			
Email: patti.mccall@tetratech.com	WO #: 117-1054033 / 3.3			
Project Name: Ann Arbor Landfill Semi-Annual GW	Project #: 24027566			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D - VOCs (City of AnnArbor GW List)	8260D_SIM - 1,4-Dioxane	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A		
Field Blank	4-3-24	10:30	—	Water			X		3	
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						

240-202182 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	T Marlowe	4-3-24 13:00	Tt	Tt Cold Storage	4-3-24 13:00	Tt
2	C. Cork	4-3-24 14:30	Tt	[signature]	4/3/24 1830	EENA
3	[signature]	4/3/24 1430	EENA	J. Marcisko	04/04/24 0500	SGS

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client Tetra Tech GEO Site Name _____ Cooler unpacked by: J MOROSKO

Cooler Received on 04/04/24 Opened on 04/04/24

FedEx 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

Receipt After-hours Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC *Foam Box Client Cooler Box Other* _____

Packing material used Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☒ See Multiple Cooler Form

IR GUN # 18 (CF +/-0.0 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2	Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes No
	-Were the seals on the outside of the cooler(s) signed & dated?	Yes No NA
	-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes No
	-Were tamper/custody seals intact and uncompromised?	Yes No NA
3	Shippers' packing slip attached to the cooler(s)?	Yes No
4	Did custody papers accompany the sample(s)?	Yes No
5	Were the custody papers relinquished & signed in the appropriate place?	Yes No
6	Was/were the person(s) who collected the samples clearly identified on the COC?	Yes No
7	Did all bottles arrive in good condition (Unbroken)?	Yes No
8	Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes No
9	For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?	
10	Were correct bottle(s) used for the test(s) indicated?	Yes No
11	Sufficient quantity received to perform indicated analyses?	Yes No
12.	Are these work share samples and all listed on the COC?	Yes No
	If yes, Questions 13-17 have been checked at the originating laboratory	
13	Were all preserved sample(s) at the correct pH upon receipt?	Yes No NA pH Strip Lot# HC329089
14	Were VOAs on the COC?	Yes No
15	Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes No NA
16	Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes No
17	Was a LL Hg or Me Hg trip blank present? _____	Yes No

JM 4/4

Tests that are not checked for pH by Receiving

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

_____

_____

_____

_____

19 SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container

Sample(s) _____ were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory

Time preserved _____ Preservative(s) added/Lot number(s). _____

VOA Sample Preservation Date/Time VOAs Frozen _____

4/4/2024

Login Container Summary Report

240-202182

4/17/2024

Temperature readings _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
FIELD BLANK	240-202182-A-1	Voa Vial 40ml - Hydrochloric Acid				
FIELD BLANK	240-202182-B-1	Voa Vial 40ml - Hydrochloric Acid				
FIELD BLANK	240-202182-C-1	Voa Vial 40ml - Hydrochloric Acid				

Login # . ____________

Eurofins - Cleveland Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
EC Client Box Other	IR GUN #: 18	2.5	2.5	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #: 18	3.4	3.4	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #: 18	1.5	1.5	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #.			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #·			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #·			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #·			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #·			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #·			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

APPENDIX C

Groundwater Database

Monitoring Well W-47-89
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 9 2020	April 9 2021	October 8 2021	April 8 2022	October 7 2022	April 6 2023	October 6 2023	April 4 2024
Specific Conductance	uS/cm	0.001	984	925	1,099	1,081	1,030	1,075	1,025	889
pH	s.u.	1-14	6.89	6.89	7.02	6.97	6.76	6.89	6.95	7.02
Temperature	degree C	0.1	14.62	13.77	15.4	11.3	14.3	13.1	14.6	13.1
Oxidation Reduction Potential	mV	1	19	40	-5.6	-67.2	70.7	-21.1	194.1	43.7
Dissolved Oxygen	mg/L	0.01	0.83	1.45	0.46	3.97	6.39	0.29	2.70	0.00
1,4-Dioxane	ug/L	0.2**	**0.40**	**0.30**	**0.23**	0.13 I	<0.20	0.16 I	<0.20	<0.20
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<5 *_	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (Total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, ug/L = micrograms per liter, mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts,

< = less than current reporting limit, NA = not applicable

Data collected from the most current eight sampling events is represented on this table.

I = Analyte is present at an estimated concentration between the method detection limit and the quantitation limit (Pace).

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

* Reporting limit changed with a change in laboratory completing analysis.

**Reporting limit may vary with dilution, see analytical report for reporting limit.

*_ LCS an/or LCSD is outside acceptance limits, low biased

Monitoring Well W-48-89
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 9 2020	April 9 2021	October 8 2021	April 8 2022	October 6 2022	April 6 2023	October 6 2023	April 4 2024
Specific Conductance	uS/cm	0.001	1,193	1,177	1,279	1,266	1,269	1,392	1,270	1,077
pH	s.u.	1	6.79	6.80	7.03	6.90	6.78	6.85	6.90	7.01
Temperature	degree C	0.1	14.04	13.33	14.9	12.8	14.3	12.9	14.6	13.3
Oxidation Reduction Potential	mV	1	-13	-17	-54.7	-116.9	-48.0	-95.5	123.5	-5.3
Dissolved Oxygen	mg/L	0.01	2.21	1.90	1.82	3.71	1.86	0.29	3.72	0.20
1,4-Dioxane	ug/L	1/0.2* **	**31.1**	**34.2**	**48.8**	**62.1**	**23.6**	**88.7**	**80.0**	**120**

Notes:

uS/cm = microsiemens per centimeter, ug/L = micrograms per liter, mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts

Data collected from the most current eight quarters is represented on this table.

*Reporting limit changed with a change in laboratory completing analysis.

**Reporting limit may vary with dilution, see analytical report for reporting limit.

Monitoring Well W-68-90
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 9 2020	April 8 2021	October 7 2021	April 7 2022	October 6 2022	April 7 2023	October 6 2023	April 4 2024
Specific Conductance	uS/cm	0.001	1,490	1,433	1,598	1,596	1,624	1,438	1,667	1,402
pH	s.u.	1	6.76	6.90	6.95	6.87	6.76	6.54	6.78	6.92
Temperature	degree C	0.1	10.62	10.44	11.4	9.9	11.2	9.5	11.0	10.3
Oxidation Reduction Potential	mV	1	-18	-25	-66.5	-132.4	-65.4	-119.2	105.6	-23.6
Dissolved Oxygen	mg/L	0.01	0.24	0.22	0.00	0.11	0.62	1.31	2.23	0.00
1,4-Dioxane	ug/L	1/0.2* **	**11.8**	**12.4**	**11.4**	**14.4**	**13.0**	**12.3**	**13**	**13**

Notes:
uS/cm = microsiemens per centimeter, ug/L = micrograms per liter, mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts
Data collected from the most current eight quarters is represented on this table.
*Reporting limit changed with a change in laboratory completing analysis.
**Reporting limit may vary with dilution, see analytical report for reporting limit.

Monitoring Well W-84-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 7 2020	April 7 2021	October 6 2021	June 3 2022	October 6 2022	April 6 2023	October 4 2023	April 5 2024
Specific Conductance	uS/cm	1	1,550	1,447	1,630	1,561	1,476	683	582	501
pH	s.u.	1-14	6.54	6.83	6.90	6.69	6.74	7.13	6.82	7.14
Temperature	degree C	0.1	14.31	13.82	14.5	12.6	21.9	11.6	16.3	10.8
Oxidation-Reduction Potential	mV	1	12	0	-41.2	-33.9	-19.3	-12.1	52.5	114.6
Dissolved Oxygen	mg/L	0.01	0.22	0.18	0.00	0.09	NR	0.18	2.48	1.90
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	**4.6**	**3.0**	**4.4**	**3.0**	**1.0**	<1	**3.5**	**1.7**
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5 *_	<5	<5 *_
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**2.9**	**1.2**	**1.9**	**1.5**	<1	<1	<1	<1
Xylenes (Total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3- Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm=microsiemens per centimeter; s.u.=standard units, C = Celsius, < = less than current reporting limit, NA = not applicable

NR = measurement not reliable

ug/L=micrograms per liter, mg/L = milligrams per liter, mV=millivolts

Data collected from the most current eight sampling events is represented on this table.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*Reporting limit changed with a change in laboratory completing analysis.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

Monitoring Well W-85-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 7 2020	April 9 2021	October 7 2021	April 6 2022	October 5 2022	April 6 2023	October 6 2023	April 5 2024
Specific Conductance	uS/cm	1	2,120	1,860	1,531	1,767	1,739	2,074	1,947	1,743
pH	s.u.	1-14	6.48	6.63	6.74	6.61	6.47	6.34	6.49	6.58
Temperature	degree C	0.1	16.34	15.25	18.6	11.4	17.1	9.9	15.4	11.0
Oxidation-Reduction Potential	mV	1	33	22	-27.7	-71.5	-39.2	-59.2	168.6	47.7
Dissolved Oxygen	mg/L	0.01	0.26	0.43	0.05	0.12	0.54	0.22	1.86	0.0
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	**72**	**70**	**72**	**67**	**73**	**79**	**72**	**80**
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	0.40 J	0.48 J	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	**1.2**	**1.2**	<1	**1.0**	<1	**1.3**	**1.5**	**1.5**
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5 *_	<5	<5 *_
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	**7.9**	**8.1**	**6.5**	**7.4**	**6.8**	**7.7**	**6.8**	**7.6**
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	0.92 J	**1.3**	<1	<1	<1	**4.1**	**3.4**	**1.7**
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**2.3**	**2.2**	<1	**1.4**	**1.6**	**1.4**	<1	**1.5**
Xylenes (Total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,3,5-Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm=microsiemens per centimeter; s.u.=standard units, C = Celsius, < = less than current reporting limit, NA = not applicable

ug/L=micrograms per liter, mg/L = milligrams per liter, mV=millivolts

Data collected from the most current eight quarters is represented on this table.

W-85-92 has elevated reporting limits. Consult laboratory report for these values.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*Reporting limit changed with a change in laboratory completing analysis

*_ LCS and/or LCSD is outside acceptance limits, low biased.

Monitoring Well W-87-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 9 2020	April 9 2021	October 6 2021	April 7 2022	October 6 2022	April 10 2023	October 5 2023	April 5 2024
Specific Conductance	uS/cm	1	1,355	1,375	1,561	1,460	1,518	1,313	1,526	1,299
pH	s.u.	1-14	6.86	6.95	6.98	7.00	6.80	6.58	6.69	6.97
Temperature	degree C	0.1	12.88	12.13	13.3	11.7	14.1	12.2	13.7	12.1
Oxidation-Reduction Potential	mV	0.1	-46	-35	-85.9	-135.8	-70.9	-120	68.4	-2.9
Dissolved Oxygen	mg/L	0.01	0.23	0.29	0.00	1.38	0.59	0.96	1.90	0.37
1,4-Dioxane	ug/L	0.2**	**7.9**	**13.7**	**17.3**	**14.5**	**28.0**	**22.2*** **	**30**	**30**
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ugL	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-Chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	1	**1.9**	**2.2**	**2.7**	**1.4**	**1.7**	**2.2**	**2.5**	**2.4**
Ethyl benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5 *_	<5	<5 *_
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**19**	**17**	**21**	**15**	**19**	**19**	**12**	**14**
Xylenes(total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, ug/L = micrograms per liter, mg/L = milligrams per liter, C = Celsius, mV = millivolts, s.u. = standard units

< = less than current reporting limit, ND = non-detect, NA = not applicable, NT = not tested

Data collected from the most current eight sampling events is represented on this table.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

* Reporting limit changed with a change in laboratory completing analysis.

** Reporting limit may vary with dilution, see analytical report for reporting limit.

*** 1,4-dioxane sample was collected on April 19, 2023.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

Monitoring Well W-88-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 7 2020	April 7 2021	October 6 2021	April 5 2022	October 5 2022	April 7 2023	October 6 2023	April 2 2024
Specific Conductance	uS/cm	1	2,630	1,500	1,093	1,127	1,165	1,430	1,383	1,573
pH	s.u.	1-14	6.57	6.75	7.04	6.84	6.81	6.54	6.41	7.05
Temperature	degree C	0.1	16.2	15.16	14.7	12.4	14.6	11.5	13.1	10.0
Oxidation-Reduction Potential	mV	1	8	-9	-51.7	-114.3	-72.8	-95	108.7	2.4
Dissolved Oxygen	mg/L	0.01	0.25	0.45	0.00	0.09	0.53	1.10	2.14	-0.74
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	**29**	**33**	**23**	**26**	**32**	**36**	**35**	**27**
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	0.54 J	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5 *_	<5	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	**9.0**	**9.6**	**7.3**	**7.4**	**7.4**	**9.0**	**9.9**	**7.8**
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**110**	**85**	**100** F1	**68**	**53**	**69**	**65**	**53**
Xylenes (Total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm=microsiemens per centimeter; s.u.=standard units, C = Celsius, < = less than current reporting limit, ug/L=micrograms per liter, mg/L = milligrams per liter, mV=millivolts, NA = not applicable

Data collected from the most current eight quarters is represented on this table.

J = Analyte is present at an estimated concentration between the method detection limit and the reporting limit.

F1 = MS and/or MSD recovery exceeds control limits.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

W-88-92 has elevated reporting limits. Consult laboratory report for these values.

*Reporting limit changed with a change in laboratory completing analysis.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

Monitoring Well W-89-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 9 2020	April 9 2021	October 6 2021	April 8 2022	October 6 2022	April 6 2023	October 5 2023	April 5 2024
Specific Conductance	uS/cm	1	1,337	1,063	1,023	1,025	1,201	1,252	1,427	1,037
pH	s.u.	1.00	6.81	6.91	7.13	7.04	6.87	6.67	6.62	6.97
Temperature	degree C	0.1	12.38	12.14	13.7	11.3	14.4	10.7	13.9	10.8
Oxidation-Reduction Potential	mV	0.1	-51	-58	-133.9	-173.8	-94.4	-134.7	55.3	-42.0
Dissolved Oxygen	mg/L	0.01	0.23	0.18	0.00	0.11	0.58	0.20	1.88	-0.89
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-Chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane (Chlorodibromomethane)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane(Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone(Methyl Butyl Ketone)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide (Iodomethane)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-Pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5 *_	<5	<5 *_
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter. mg/L = milligrams per liter. ug/L = micorgrams per liter. s.u. standard units, mV=millivolts, NA = not applicable

C = Celsius, < = less than current reporting limit

Data collected from the most current eight sampling events is represented on this table.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*Reporting limit changed with a change in laboratory completing analysis

*_ LCS and/or LCSD is outside acceptance limits, low biased

Monitoring Well W-90-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 8 2020	April 9 2021	October 8 2021	April 8 2022	October 6 2022	April 10 2023	October 4 2023	April 3 2024
Specific Conductance	uS/cm	1	902	1,164	866	1,228	1,021	959	971	843
pH	s.u.	1-14	6.89	6.91	7.16	6.99	6.82	6.68	6.86	7.17
Temperature	degree C	0.1	14.9	14.33	15.9	7.1	13.8	12.2	17.6	9.3
Oxidation-Reduction Potential	mV	0.1	81	81	61.3	-83.4	88.6	80.8	126.9	125.5
Dissolved Oxygen	mg/L	0.01	0.28	0.46	0.00	0.12	0.73	1.85	2.48	-0.72
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-Chloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane (Chlorodibromomethane)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide (Iodomethane)	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5 *_	<5	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**3.7**	**3.1**	**3.8**	**6.9**	<1	<1	<1	**1.3**
Xylenes (total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, mg/L = milligrams per liter, ug/L = micrograms per liter, s.u. = standard units, C = Celsius, < = less than current reporting limit,

NA = not applicable

Data collected from the most current eight sampling events is represented on this table.

*Reporting limit changed with a change in laboratory completing analysis

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*_ LCS and/or LCSD is outside acceptance limits, low biased

Monitoring Well W-92-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 8 2020	April 8 2021	October 7 2021	April 7 2022	October 7 2022	April 7 2023	October 9 2023	April 4 2024
Specific Conductance	uS/cm	1	1,207	1,180	1,183	1,629	1,809	1,549	1,556	1,850
pH	s.u.	1-14	7.02	7.25	7.29	7.12	6.75	6.68	6.61	7.06
Temperature	degree C	0.1	18.05	15.37	18.6	10.7	14.8	14.1	13.2	11.3
Oxidation-Reduction Potential	mV	1	22	45	-0.7	-85.1	-2.5	-13.3	168.9	137.1
Dissolved Oxygen	mg/L	0.01	0.27	0.49	0.00	0.12	0.62	1.05	1.98	NR
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5 *_	<5	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (Total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm=microsiemens per centimeter, s.u.=standard units, C = Celsius, < = less than current reporting limit, ug/L=micrograms per liter, mg/L = milligrams per liter, mV=millivolts

NA = not applicable, NR = measurement not reliable

Data collected from the most current eight quarters is represented on this table.

*Reporting limit changed with a change in laboratory completing analysis.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*_ LCS and/or LCSD is outside acceptance limits, low biased

Monitoring Well W-94-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 9 2020	April 9 2021	October 8 2021	April 7 2022	October 6 2022	April 6 2023	October 5 2023	April 5 2024
Specific Conductance	uS/cm	0.001	1,740	1,580	1,725	1,637	1,493	1,752	1,537	1,357
pH	s.u.	1.00	6.93	7.46	7.65	7.01	7.18	7.38	7.00	7.08
Temperature	degree C	0.1	11.42	10.81	11.2	10.3	11.7	10.3	11.2	10.3
Oxidation-Reduction Potential	mV	1	-87	62	-120.1	-173	-98.3	-152.5	42.1	-25.8
Dissolved Oxygen	mg/L	0.01	0.20	0.29	0.00	0.07	0.63	0.25	2.02	0.00
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5 *_	<5	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (Total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, mg/L = milligrams per liter, ug/L = micrograms per liters, s.u. = standard units, mV=millivolts, C = Celsius, NA = not applicable

Data collected from the most current eight sampling events is represented on this table.

*Reporting limit changed with a change in laboratory completing analysis

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*_ LCS and/or LCSD is outside acceptance limits, low biased

Monitoring Well W-96-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 8 2020	April 8 2021	October 7 2021	April 7 2022	October 7 2022	April 7 2023	October 9 2023	April 4 2024
Specific Conductance	uS/cm	1	1,367	1,404	1,458	2,735	1,527	1,860	1,598	7,608
pH	s.u.	1-14	7.92	8.30	8.83	7.40	7.55	7.13	6.97	7.13
Temperature	degree C	0.1	14.40	14.88	20.71	9.90	13.40	12.1	13.6	11.7
Oxidation-Reduction Potential	mV	0.1	-38	114	28.7	-48.0	-121.2	-40.5	45.5	-3.1
Dissolved Oxygen	mg/L	0.01	0.52	0.70	0.00	0.23	1.03	1.05	2.78	NR
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-Chloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane (Chlorodibromomethane)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide (Iodomethane)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5 *_	<5	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1	<1	<1	<1	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter. mg/L = milligrams per liter. ug/L = micrograms per liter. s.u. = standard units, mV=millivolts.

C = Celsius, < = less than current reporting limit, NA = not applicable, NR = measurement not reliable

Data collected from the most current eight sampling events is represented on this table.

*Reporting limit changed with a change in laboratory completing anlysis

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*_ LCS and/or LCSD is outside acceptance limits, low biased

Monitoring Well W-99-93
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 7 2020	April 7 2021	October 6 2021	April 8 2022	October 6 2022	April 6 2023	October 4 2023	April 2 2024
Specific Conductance	uS/cm	1	462	504	679	614	557	507	558	520
pH	s.u.	1-14	7.38	7.41	7.43	7.37	7.16	7.47	7.28	7.83
Temperature	degree C	0.1	16.69	13.60	17.5	9.7	15.7	9.2	19.2	8.7
Oxidation-Reduction Potential	mV	1	99	98	49.1	3.6	79.4	27.5	99.2	217.7
Dissolved Oxygen	mg/L	0.01	5.97	2.14	2.96	5.37	2.47	0.87	3.88	2.25
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<1	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<1	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5 *_	<5	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (Total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:
uS/cm=microsiemens per centimeter; s.u.=standard units, C = Celsius, ug/L=micrograms per liter, mg/L = milligrams per liter, mV=millivolts, NA = not applicable, NT = not tested
< = less than current reporting limit

Data collected from the most current eight quarters is represented on this table.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.
*Reporting limit changed with a change in laboratory completing analysis

*_ LCS and/or LCSD is outside acceptance limits, low biased

Monitoring Well W-100-93
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 9 2020	April 9 2021	October 8 2021	April 7 2022	October 6 2022	April 6 2023	October 5 2023	April 5 2024
Specific Conductance	uS/cm	1	1,290	1,080	1,264	1,467	1,505	1,541	1,059	1,255
pH	s.u.	1-14	7.18	8.12	7.28	7.00	7.54	7.61	7.96	7.21
Temperature	degree C	0.1	12.27	11.51	11.8	10.8	13.2	9.9	15.8	7.5
Oxidation-Reduction Potential	mV	0.1	-30	149	-114.6	-171.1	-90.9	-132.8	136.0	-49.3
Dissolved Oxygen	mg/L	0.0	NR	NR	0.00	0.10	11.28	1.11	9.30	NR
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane(Methyl Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-Chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane (Chlorodibromomethan	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone (methyl Butyl Ketone)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide (Iodomethane)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5 *_	<5	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**1.6**	**4.0**	**6.0**	**4.6**	**2.0**	**1.4**	<1	**3.4**
Xylenes (total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, mg/L = milligrams per liter, ug/L = micrograms per liter, s.u. = standard units, mV=millivolts, C = Celsius, < = less than current reporting limit

NA = not applicable, NR = not reported

Data collected from the most current eight sampling events is represented on this table.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*Reporting limit changed with a change in laboratory completing analysis.

*_ LCS and/or LCSD is outside acceptance limits, low biased

Monitoring Well W-105-20
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 8 2020	April 8 2021	October 7 2021	April 7 2022	October 7 2022	April 7 2023	October 6 2023	April 4 2024
Specific Conductance	uS/cm	0.001	818	814	935	905	882	853	977	811
pH	s.u.	1-14	7.10	7.09	7.25	7.13	6.87	6.79	6.86	7.06
Temperature	degree C	0.1	13.90	12.98	14.6	9.9	11.3	9.5	14.3	9.2
Oxidation Reduction Potential	mV	1	-22	97	29.9	-40.0	60.4	-24.0	313.6	158.1
Dissolved Oxygen	mg/L	0.01	0.33	1.34	0.00	0.45	1.22	1.74	2.21	0.00
1,4-Dioxane	ug/L	0.2*	<0.20	<0.20	<0.20	<0.20	<0.12	<0.12	<0.20	<0.20

Notes:
uS/cm = microsiemens per centimeter, ug/L = micrograms per liter,
mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts
< = less than current reporting limit
Well installed July 23, 2020 and first sampled October 8, 2020.
*Reporting limit may vary with dilution, see analytical report for reporting limit.

Monitoring Well W-106-20
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	November	April	October	April	October	April	October	April
			2*	8	7	7	7	7	6	4
			2020	2021	2021	2022	2022	2023	2023	2024
Specific Conductance	uS/cm	0.001	1,408	1,404	1,533	1,472	1,403	1,238	1,369	1,171
pH	s.u.	1-14	6.34	6.89	7.00	6.86	6.68	6.54	6.82	6.92
Temperature	degree C	0.1	12.24	12.21	15.4	8.1	12.6	9.8	14.5	11.0
Oxidation Reduction Potential	mV	1	-45	-19	-67.9	-84.7	-46.9	-98.4	105.4	26.5
Dissolved Oxygen	mg/L	0.01	0.23	0.29	0.00	0.04	0.58	1.03	1.89	NR
1,4-Dioxane	ug/L	0.2**	**1.8**	**1.8**	**2.2**	**1.9**	**1.9**	**2.1**	**3.9**	**2.3**

Notes:
uS/cm = microsiemens per centimeter, ug/L = micrograms per liter, NR=measurement not reliable
mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts
Well installed July 23, 2020 and first sampled October 8, 2020.
*Well re-sampled for 1,4-dioxane on November 2, 2020.
**Reporting limit may vary with dilution, see analytical report for reporting limit.

Monitoring Well W-107-20
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 8 2020	April 8 2021	October 7 2021	April 7 2022	October 7 2022	April 19 2023	October 6 2023	April 4 2024
Specific Conductance	uS/cm	0.001	1,187	1,153	1,294	1,249	1,225	1,105	1,275	1,081
pH	s.u.	1-14	6.83	6.98	7.08	6.95	6.74	6.50	6.85	6.94
Temperature	degree C	0.1	11.61	11.73	15.7	10.3	13.0	10.6	13.1	11.1
Oxidation Reduction Potential	mV	1	19	45	-53.0	-80.2	-18.5	-62.1	286.5	40.4
Dissolved Oxygen	mg/L	0.01	0.40	1.50	0.20	1.09	0.79	1.00	2.53	0.00
1,4-Dioxane	ug/L	0.2**	<0.20	<0.20	<0.20	<0.20	<0.12	<0.12	<0.20	<0.20

Notes:
uS/cm = microsiemens per centimeter, ug/L = micrograms per liter,
mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts
< = less than current reporting limit
Well installed July 24, 2020 and first sampled October 8, 2020.
**Reporting limit may vary with dilution, see analytical report for reporting limit.

Monitoring Well W-108-20
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 8 2020	April 8 2021	October 7 2021	April 8 2022	October 6 2022	April 10 2023	October 5 2023	April 4 2024
Specific Conductance	uS/cm	0.001	835	791	903	890	883	803	935	788
pH	s.u.	1-14	6.93	7.06	7.17	7.07	6.95	6.71	6.84	7.21
Temperature	degree C	0.1	14.53	16.90	17.1	11.0	15.8	15.0	15.6	10.8
Oxidation Reduction Potential	mV	1	-34	97	-103.7	-151.3	-75.2	-126	60.1	-38.7
Dissolved Oxygen	mg/L	0.01	0.23	4.35	0.00	0.11	0.59	0.84	1.79	NR
1,4-Dioxane	ug/L	0.2*	<0.20	<0.20	<0.20	<0.20	<0.12	<0.12	<0.20	**0.22**

Notes:
uS/cm = microsiemens per centimeter, ug/L = micrograms per liter,
mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts
< = less than current reporting limit
Well installed August 17, 2020 and first sampled October 8, 2020.
*Reporting limit may vary with dilution, see analytical report for reporting limit.

Purge Well PW-1R-12
Groundwater Database
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 7 2020	April 7 2021	October 6 2021	April 6 2022	October 5 2022	April 4 2023	October 4 2023	April 3 2024
Specific Conductance	uS/cm	0.001	1,660	1,550	1,691	1,668	1,602	NR	1,862	1,511
pH	s.u.	1-14	6.31	6.50	6.60	6.61	6.48	6.97	6.64	6.76
Temperature	degree C	0.1	12.67	12.98	12.4	12.2	12.8	13.5	12.9	12.5
Oxidation Reduction Potential	mV	0.1	14	-3	-46	-133.9	-86.7	-99.4	-25.2	-6.7
Dissolved Oxygen	mg/L	0.01	0.21	0.18	0.00	0.22	0.51	NR	6.59	5.94
1,4-Dioxane	ug/L	0.2**	**182**	**185**	**170**	**140**	**202**	**151**	**170**	**240**
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane (Methyl Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane (Chlorodibromomethane)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
Dichlorodifluormethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	5/1*	**3.0**	**3.2**	**4.7**	**3.4**	**3.0**	**4.7**	**6.3**	**5.4**
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5 *_	<5	<5
Naphthalene	ug/L	1/5*	<5	1.2 J	<1	<5	<5	<5	<1	<1
n-Butylbenzene	ug/L	1	<1	0.34 J	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (Total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:
uS/cm = microsiemens per centimeter, mg/L = milligrams per liter, ug/L = micrograms per liter, s.u. = standard units, mV=millivolts, C = Celsius
NA = not applicable, < = less than reporting limit; NR = Measurement Not Reliable
Data collected from the most current eight sampling events is represented on this table.
J = Analyte is present at an estimated concentration between the method detection limit and the reporting limit.
♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.
PW-1R-12 has elevated reporting limits. Consult laboratory report for these values.
*Reporting limit changed with a change in laboratory completing analysis
**Reporting limit may vary with dilution, see analytical report for reporting limit.
*_ LCS and/or LCSD is outside acceptance limits, low biased.

Purge Well PW-2R-01/PW-2R-22
Groundwater Database
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 7 2020	October 7 2020	June 11 2021***	October 6 2021	April 7 2022	June 5 2023*^	October 4 2023	April 3 2024
Specific Conductance	uS/cm	1	1,318	1,285	1,270	1,389	1,415	1,289	1,369	1,145
pH	s.u.	1-14	7.69	6.68	6.82	6.92	6.80	6.91	7.00	7.05
Temperature	degree C	0.1	11.44	13.83	10.72	13.9	11.0	15.0	14.4	11.6
Oxidation Reduction Potential	mV	0.1	-99	-8	NR	-53.2	-124.2	-130.5	-6.5	-16.0
Dissolved Oxygen	mg/L	0.01	0.80	0.19	0	0.00	0.23	0.00	9.79	6.18
1,4-Dioxane	ug/L	0.2**	**21.7**	**23.4**	**17.9**	**21.2**	**19.6**	**5.3**	**22.0**	**22.0**
Acetone	ug/L	10/5*	<10	<10	<10	<10	<5	<5	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<1	<20	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone	ug/L	10/5*	<5	<5	<5	<10	<5	<5	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<1	<1	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane(Chlorodibromomethane)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2	<2.5	<1	<1	<2.5	<2.5
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	5/1*	**1.3**	**1.0**	**1.3**	**1.7**	**1.2**	**4.6**	**2.5**	**1.7**
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<2	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	<1	ND	ND	ND	ND	ND
2-Hexanone	ug/L	10/5**	<5	<5	<5	<10	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<1	<10	<5	<5	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<5	<5	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5	<5	<5
Naphthalene	ug/L	1/5*	<5	<5	<5	<1	<5	<5	<1	<1
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**1.0**	**1.1**	**1.2**	**1.7**	<1	**5.2**	**1.7**	**1.4**
Xylenes (Total)	ug/L	3/2*	<3	<3	<3	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<1	<1	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, mg/L = milligrams per liter, ug/L = micrograms per liter, s.u. = standard units, mV=millivolts, C = Celsius

NA = not applicable, < = less than current reporting limit, NR = Measurement not reliable

Data collected from the most current eight sampling events is represented on this table.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*Reporting limit changed with a change in laboratory completing analysis.

**Reporting limit may vary with dilution, see analytical report for reporting limit.

***PW-2R-01 was not operational during the semi-annual event but was sampled within the same quarter.

PW-2R-01 was inoperable and was not sampled during the 2022 second semi-annual event.

PW-2R-01 was replaced by PW-2R-22 in December 2022.

*^PW-2R-22 was not operational during the semi-annual event but was sampled using a peristaltic pump during the same quarter.

Purge Well PW-3R-12
Groundwater Database
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 7 2020	April 7 2021	October 6 2021	April 6 2022	October 5 2022	June 5 2023*^	October 4 2023	April 3 2024
Specific Conductance	uS/cm	1	2,720	2,130	1,680	1,609	1,892	1,929	2,271	1,804
pH	s.u.	1-14	6.44	6.68	6.80	6.70	6.52	6.69	6.70	6.89
Temperature	degree C	0.1	14.55	13.47	14.0	12.5	14.1	16.3	14.1	12.5
Oxidation Reduction Potential	mV	0.1	32	-6	-29.9	-106.7	-75.7	-169	2.1	2.2
Dissolved Oxygen	mg/L	0.01	0.66	0.39	0.00	0.33	0.48	0.02	8.43	6.46
1,4-Dioxane		0.2**	**23.1**	**183**	**84.0**	**71.1**	**179**	**19.9**	**180**	**220**
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	6.1 *+	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<4	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane(Chlorodibromomethane)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<1	<2.5	<2.5
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	0.44 J	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	**9.3**	**9.0**	**12**	**8.5**	**8.2**	**9.2**	**9.1**	**6.9**
trans-1,2-Dichloroethene	ug/L	1	**2.1**	**2.5**	**2.5**	**2.3**	**2.1**	**2.0**	**2.2**	**2.0**
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	1	**5.5**	**6.7**	**4.9**	**3.0**	**4.9**	**1.0**	**9.6**	**7.0**
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	<1	<1
2-Hexanone	ug/L	10/5*	<5	<5	<10	<5	<5	<5	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<5	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5	<5	<5
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<5	<1	<1
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	5.5	<1	<1
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**62**	**51**	**46**	**41**	**42**	**12**	**49**	**39**
Xylenes (Total)	ug/L	3/2*	<3	<3	<2	<2	<2	<1	<2	<2
1,2,3-Trimethylbenzene		1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, mg/L = milligrams per liter, ug/L = micrograms per liter, s.u. = standard units, mV=millivolts, C = Celsius

NA = not applicable, < = less than current reporting limit

Data collected from the most current eight sampling events is represented on this table.

J = Analyte is present at an estimated concentration between the method detection limit and the reporting limit.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*Reporting limit changed with a change in laboratory completing analysis.

**Reporting limit may vary with dilution, see analytical report for reporting limit.

*+The laboratory control sample (LCS) and LCS duplicate (LCSD) are outside acceptance limits, high biased.

*^PW-3R-12 was not operational during the semi-annual event but was sampled using a peristaltic pump within the same quarter.

Groundwater Monitoring Report
Second Semi-Annual Event 2024

City of Ann Arbor Landfill
Ann Arbor, Michigan

January 27, 2025

TETRA TECH

Groundwater Monitoring Report
Second Semi-Annual Event 2024

City of Ann Arbor Landfill
Ann Arbor, Michigan

Prepared for:

Erin Donnelly
Environmental Services Manager
City of Ann Arbor
301 E. Huron Street
Ann Arbor, Michigan 48104

Prepared by:

Tetra Tech
1136 Oak Valley Drive, Suite 100
Ann Arbor, Michigan 48108

January 27, 2025

Alison Rauss
Senior Scientist

Patti J. McCall
Principal Hydrogeologist

TABLE OF CONTENTS

1. INTRODUCTION 3
2. STATIC GROUNDWATER LEVEL ELEVATIONS 3
3. GROUNDWATER MONITORING WELL SAMPLE COLLECTION 4
4. PURGE WELL SAMPLE COLLECTION 5
5. GROUNDWATER ANALYTICAL RESULTS 5
5.1 Analytical Results – Volatile Organic Compounds 6
5.2 Analytical Results – 1,4-Dioxane 7
6. MAINTENANCE 9
7. SUMMARY 9

TABLES

Table 1 Groundwater Monitoring Program
Table 2 Groundwater Elevations October 7, 2024
Table 3 Historical Groundwater Elevation Summary

FIGURES

Figure 1 Well Location Map
Figure 2 Upper Aquifer Groundwater Elevation Contour Map October 7, 2024
Figure 3 Total VOCs Isoconcentration Map October 2024
Figure 4 1,4-Dioxane Concentration Map October 2024

APPENDICES

Appendix A Groundwater Sampling Record
Appendix B Laboratory Analytical Report – Eurofins
Appendix C Groundwater Database

1. INTRODUCTION

Tetra Tech completed the first semi-annual groundwater sampling event at Ann Arbor Landfill (AALF) located in Ann Arbor, Michigan in October 2024. All groundwater samples were collected and analyzed in accordance with the *Ann Arbor Landfill Revised Hydrogeologic Monitoring Plan* (2015 HMP) dated December 18, 2015, and HMP Amendment letter request to Michigan Department of Environment, Great Lakes & Energy (EGLE) dated June 1, 2018 (2018 HMP Revision Request). Sampling is in accordance with this HMP Revision Request and the addition of four monitoring wells installed in 2020 for 1,4-dioxane monitoring. A summary of the sample locations and analytical parameters analyzed for AALF is provided as **Table 1**.

2. STATIC GROUNDWATER LEVEL ELEVATIONS

Static water levels for the second semi-annual event were measured on October 7, 2024. All groundwater monitoring wells are depicted on **Figure 1**. Static water levels were obtained from 53 locations: 25 groundwater monitoring wells, 22 piezometers, three observation wells and three purge wells. Monitoring well W-84-92 was not located due to vegetation and could not be located on the day of the static water levels but was located for sampling later in the week. A static water level measurement was obtained from each location with an electronic water level meter accurate to 0.01-foot. The water level meter was thoroughly rinsed with alconox and distilled water following each use to minimize the potential for cross contamination between wells.

The groundwater elevations measured on October 7, 2024 are presented on **Table 2**. A summary of groundwater elevations collected from April 2021 through October 2024 is presented on **Table 3**. Recent groundwater elevations are on average 0.16 feet lower when compared to October 2023, and 0.49 feet lower when compared to October 2022.

Potentiometric contours and apparent horizontal groundwater flow direction for the upper aquifer are presented on **Figure 2**. Review of **Figure 2** indicates that the direction of groundwater flow in the upper aquifer around Phase I and Phase II is influenced by

the slurry wall. The influence of the slurry wall is evident by evaluating the pressure head difference between the piezometer wells located on the upgradient and downgradient sides of the slurry wall. The purpose of the slurry wall is to prevent unimpacted upgradient groundwater from mixing with the landfill groundwater. Groundwater flow around the perimeter of the landfill is inward toward the slurry wall at each upgradient piezometer (with the exception of P-1U/P-1D and P-5U/P-5D which have a difference of 0.02 and 0.01 feet respectively). The locations will be monitored to determine if these values are valid.

Groundwater flow north of Phase II flows immediately to the east and then to the north and northwest. Groundwater north of Phase I flows to the north/northwest. Although groundwater elevations are lower than October 2023, groundwater flow direction is consistent with historical data.

Static water level measurements of the observation and monitoring wells located within the landfill demonstrate a generally flat gradient. Two extraction wells, PW-1R-12 and PW-3R-12, are located within the opening of the slurry wall along the north side of Phase I. These two extraction wells capture the landfill groundwater and groundwater from the impacted area north of Ellsworth Road. The water is discharged to the sanitary sewer at a target combined rate of up to 70 gallons per minute (gpm) per the Industrial User Permit.

3. GROUNDWATER MONITORING WELL SAMPLE COLLECTION

Seven of the AALF monitoring wells have dedicated well wizard micropurge pumps for low-flow sampling. Eleven of the monitoring wells do not have well wizard pumps and were purged with a peristaltic pump using low flow sampling techniques. The well wizard equipment control box was inoperable in October 2024, and all monitoring wells were sampled with a peristaltic pump using low flow sampling techniques during this event. At all monitoring wells, water was purged until a stabilized water level and stabilized field parameters were achieved. Field parameters, including pH, specific conductance, temperature, oxidation-reduction potential and dissolved oxygen

measurements were recorded until the readings stabilized. When stabilized field parameters were achieved, groundwater samples were collected. Field measurements obtained from each monitoring well were recorded on groundwater sampling records, provided as **Appendix A**.

The groundwater samples were placed directly into clean laboratory provided containers. All samples were placed into ice-packed coolers. Upon completion of all sampling activities, a courier from Eurofins delivered the groundwater samples to their laboratory in Ohio. All samples were handled under the proper chain-of-custody procedures.

4. PURGE WELL SAMPLE COLLECTION

The three purge wells contain ball valves that are connected to the effluent groundwater discharge. These valves allow for diversion of a portion of the effluent groundwater from the sanitary discharge pipe to a port for sample collection. PW-2R-22 was not operational during the October 2024 sampling event. Power was restored to PW-2R-22 in November 2024 and was sampled on December 19, 2024 for the second semi-annual event parameters.

All purge well samples were placed directly into clean laboratory provided containers. After sampling, the purge well valves were turned off, returning all effluent discharge to the sanitary sewer. All samples were placed into ice-packed coolers. A courier from Eurofins delivered the samples to their laboratory in Ohio. All samples were handled under the proper chain-of-custody procedures.

5. GROUNDWATER ANALYTICAL RESULTS

Laboratory analytical reports and chain-of-custody documentation for groundwater sampling is provided by Eurofins in **Appendix B**. Analytical results have been summarized for each sampling location and are presented in the groundwater database summary in **Appendix C**. Groundwater sampling was completed at eighteen groundwater monitoring wells and three purge wells for this event. Analysis included

sampling for volatile organic compounds (VOCs) and 1,4-dioxane in accordance with the 2015 HMP and 2018 HMP Revision Request.

5.1 Analytical Results – Volatile Organic Compounds

Tetra Tech personnel collected groundwater samples from twelve groundwater monitoring wells and three purge wells for VOCs during this event. Groundwater sample analyses were completed using the U.S. Environmental Protection Agency's (USEPA) Method SW846 8260.

Analytical results indicate that VOCs were detected in monitoring wells W-84-92, W-85-92, W-87-92, W-88-92, W-96-92 and W-100-93 and purge wells PW-1R-12, PW-2R-22 and PW-3R-12 (**Figure 3**). The parameters detected at each well location are generally consistent with historical data with a notable change in W-85-92. The majority of the contaminant mass is located along the southern boundary of Southeast Area Park (**Figure 3**).

Trichloroethene (TCE) was detected at 6.4 micrograms per liter (ug/L) in monitoring well W-85-92, for the fourth consecutive event after remaining below the detection limit since October 2021. TCE in W-85-92 has remained at a lower concentration than the highest TCE concentration detected at this well of 11 ug/L in April 2020 (**Appendix C**).

Concentrations of diethyl ether (W-84-92, W-87-92, PW-1R-12, PW-2R-22 and PW-3R-12), and cis-1,2-DCE and trans-1,2-DCE (W-85-92, W-88-92 and PW-3R-12), were detected at concentrations above reporting limits during this event and are generally consistent with historical detections. Monitoring well W-85-92 was diluted by the laboratory and has an elevated reporting limit. Diethyl ether likely would have a detectable concentration if the reporting limit was not elevated.

The following observations are noted for concentrations of vinyl chloride:

- PW-3R-12 had a decrease from 39 ug/L in April 2024 to 34 ug/L in October 2024. This concentration is consistent with historical detections. The low concentration

of vinyl chloride in June 2023 was the lowest detected at this location and was likely attributable to the non-pumping state of the purge well during that sampling event.

- After four consecutive sampling events that were below detection, a low concentration of vinyl chloride was detected in W-84-92.
- Monitoring wells W-90-92 and W-100-93 did not have detections of vinyl chloride this sampling event. Low detections are typical in these monitoring wells.
- Monitoring well W-85-92 was diluted by the laboratory and has an elevated reporting limit. Vinyl chloride likely might have had a detectable concentration if the reporting limit was not elevated.
- The concentrations detected in W-87-92, W-88-92 and PW-2R-22 are generally consistent with historical detections.

Toluene and acetone, detected in June 2023 at PW-3R-12 and reported in the First Semi-Annual Event 2023 Report, were not detected for the third consecutive sampling event. The acetone is likely a laboratory contaminant. Toluene has never been detected in PW-3R-12 previously and is assumed to have not been a valid detection, however it will continue to be analyzed in the event this is a new contaminant.

Acetone was detected in W-96-92 at a concentration of 12 ug/L, W-100-93 at a concentration of 28 ug/L and the field blank at a concentration of 14 ug/L this event. This parameter is not typically detected in the monitoring wells. It is believed the acetone detections are a laboratory contaminant, but this will continue to be monitored in future events to determine if acetone is an issue.

5.2 Analytical Results – 1,4-Dioxane

Eight monitoring wells and three purge wells were sampled for 1,4-dioxane during this event. The analyses were completed using USEPA Method 522. The 1,4-dioxane concentrations for the monitoring wells sampled during the last four events are illustrated on **Figure 4**. The analytical results indicate that 1,4-dioxane was detected at

the same locations detected historically and at concentrations consistent with historical data, with the exception of W-87-92.

The concentration of 1,4-dioxane in W-48-89 decreased from a concentration of 120 ug/L in April 2024 to a concentration of 67 ug/L in October. The April 2024 concentration was the highest concentration to date for this location. The October concentration is within its typical range of detections.

Monitoring well W-108-20 had a detection of 0.22 ug/L in April 2024; the first detection of 1,4-dioxane at this location. 1,4-dioxane was not detected at W-108-20 in October.

The concentration of 1,4-dioxane detected at W-87-92 increased from a concentration of 30 ug/L in April 2024 to a concentration of 38 ug/L in October. The October concentration is the highest concentration to date for this location since 1,4-dioxane monitoring began for the well in October 2015.

The concentration of 1,4-dioxane detected at PW-1R-12 decreased from 240 ug/L in April 2024 to 230 ug/L in October. This is within its typical range, although elevated compared to recent concentrations and may be a result of continued reduced pumping rates at PW-3R-12 this quarter; allowing PW-1R-12 to cover a larger area.

The concentration of 1,4-dioxane detected at PW-2R-22 remained consistent with the concentration detected in April 2024 and October 2023 at 22 ug/L. The concentration of 1,4-dioxane detected at PW-3R-12 remained consistent with the concentration detected in April 2024 at 220 ug/L. Purge well PW-2R-22 and PW-3R-12 were both inoperable during the first semi-annual event in 2023 and were sampled during a non-pumping state. In both purge wells, the June 2023 concentration is lower than the respective typical concentration range recently and is likely attributable to the non-pumping state of the purge well.

Three monitoring wells (W-48-89, W-68-90 and W-87-92) had detections of 1,4-dioxane above the drinking water criteria of 7.2 ug/L during this event.

6. MAINTENANCE

In May 2024, Tetra Tech personnel observed that The City of Ann Arbor's AquaHawk AMR readings for PW-1R-12 stopped advancing after May 7, 2024. On May 17, 2024, Tetra Tech personnel observed that groundwater could be heard discharging from PW-1R-12, indicating that the pump was operating but the meter was not. The meter requires replacement and options are being evaluated.

On September 10, 2024, Tetra Tech personnel were decreasing the flow for PW-2R-22 and the flow valve bent. Since the flow could no longer be adjusted with the valve, the power to the well was turned off. Stearns Drilling (Stearns) was contacted to assess repairs to the flow valve. On November 11, Stearns evaluated options and used a tool to adjust the flow, and the power was restored to PW-2R-22.

April 3, 2024, Tetra Tech personnel observed that the PW-3R-12 meter was not advancing. The pump could be heard, indicating that the well was recovering groundwater, however the meter was inoperable. The City of Ann Arbor's AquaHawk AMR readings indicate that the meter stopped advancing after March 25, 2024. The PW-3R-12 meter was replaced with a MAG meter by Stearns on November 12, 2024 and it has been operational since.

7. SUMMARY

The upper aquifer groundwater flow around Phase I and Phase II continues to be influenced by the slurry wall. Groundwater flow around the perimeter of the landfill is inward toward the slurry wall at each upgradient piezometer (with the exception of P-1U/P-1D and P-5U/P-5D which have a difference of 0.02 and 0.01 feet respectively), as indicated by the difference in groundwater elevations measured on each side of the slurry wall. North of the landfill, groundwater in the upper aquifer generally flows north to

northwest. Groundwater elevations are generally lower when compared to October 2023 likely reflecting a decrease in precipitation amounts.

Concentrations of VOCs and 1,4-dioxane at the sampling locations are generally consistent when compared to recent historical data and recent trends, with minor changes as noted in Section 5.1 and 5.2 respectively. The monitoring and purge wells are scheduled for sampling in April 2024 and data trends will continue to be evaluated.

TABLES

TABLE 1
Groundwater Monitoring Program
Ann Arbor Landfill
Ann Arbor, Michigan

Monitoring Wells	SWL	Field Parameters	VOCs	1,4-Dioxane
W-14-84	SA			
W-46-89	SA			
W-47-89	SA	SA	SA	SA
W-48-89	SA	SA		SA
W-50-89	SA			
W-51-89	SA			
W-64-90	SA			
W-68-90	SA	SA		SA
W-70-92R	SA			
W-72-90	SA			
W-84-92	SA	SA	SA	
W-85-92	SA	SA	SA	
W-87-92	SA	SA	SA	SA
W-88-92	SA	SA	SA	
W-89-92	SA	SA	SA	
W-90-92	SA	SA	SA	
W-92-92	SA	SA	SA	
W-94-92	SA	SA	SA	
W-96-92	SA	SA	SA	
W-99-93	SA	SA	SA	
W-100-93	SA	SA	SA	
W-101-93	SA			
W-102-93	A[1]	A[1]	A[1]	
W-105-20	SA	SA		SA
W-106-20	SA	SA		SA
W-107-20	SA	SA		SA
W-108-20	SA	SA		SA
PW-1R-12	SA	SA	SA	SA
PW-2R-22	SA	SA	SA	SA
PW-3R-12	SA	SA	SA	SA
OW-31-08	SA			
OW-32-08	SA			
OW-33-08	SA			
P-0U	SA			
P-0D	SA			
P-1U	SA			
P-1D	SA			
P-2U	SA			
P-2D	SA			
P-3U	SA			
P-3D	SA			
P-4U	SA			
P-4DR	SA			
P-5U	SA			
P-5D	SA			
P-6U	SA			
P-6D	SA			
P-7UR-05	SA			
P-7D	SA			
P-8U	SA			
P-8D	SA			
P-9U	SA			
P-9D	SA			
P-10U	SA			
P-10D	SA			
Totals :	**SWL**	**Field Parameters**	**VOCs**	**1,4-Dioxane**
Semi Annually	**54**	**21**	**15**	**11**
Every 5 Years	**55**	**22**	**16**	**11**

SA = Semi-annual event: April and October

A[1] = Monitoring well W-102-93 will be sampled annually in April every five years for VOCs. The next samling event is April 2025.

Monitoring wells W-105-20, W-106-20, W-107-20 and W-108-20 were installed and surveyed in 2020.

PW-2R-01 was replaced by PW-2R-22 in December 2022.

TABLE 2
Groundwater Elevations
October 7, 2024
Ann Arbor Landfill
Ann Arbor, Michigan

Monitoring Well ID	Top of Casing Elevation (ft amsl) 2018	Static Water Level (ft) 10/7/2024	Groundwater Elevation (ft amsl)
W-14-84	831.93	12.31	819.62
W-46-89	858.52	42.79	815.73
W-47-89	828.29	14.16	814.13
W-48-89	829.91	15.78	814.13
W-50-89	830.85	16.21	814.64
W-51-89	831.37	17.15	814.22
W-64-90	825.98	11.65	814.33
W-68-90	823.79	18.85	804.94
W-70-92R	836.50	21.34	815.16
W-72-90	836.51	20.47	816.04
W-84-92	826.32	NM	NM
W-85-92	838.39	23.26	815.13
W-87-92	832.79	17.73	815.06
W-88-92	835.47	20.42	815.05
W-89-92	837.77	22.13	815.64
W-90-92	833.05	17.92	815.13
W-92-92	827.80	12.75	815.05
W-94-92	822.92	8.74	814.18
W-96-92	834.35	18.44	815.91
W-99-93	828.62	13.51	815.11
W-100-93	822.42	7.37	815.05
W-101-93	825.71	12.66	813.05
W-105-20	823.54	18.74	804.80
W-106-20	820.24	7.23	813.01
W-107-20	828.02	20.46	807.56
W-108-20	823.73	9.95	813.78
OW-31-08	831.26	17.08	814.18
OW-32-08	826.48	12.24	814.24
OW-33-08	834.51	20.05	814.46
PW-1R-12	838.16	28.38	809.78
PW-2R-22	825.33	11.15	814.18
PW-3R-12	841.48	28.42	813.06
P-0U	841.43	26.10	815.33
P-0D	845.14	30.02	815.12
P-1U	854.32	38.54	815.78
P-1D	857.85	42.05	815.80
P-2U	854.47	38.60	815.87
P-2D	851.34	36.00	815.34
P-3U	848.32	32.17	816.15
P-3DR	849.13	33.69	815.44
P-4U	837.44	22.09	815.35
P-4DR	839.08	24.00	815.08
P-5U	832.73	17.41	815.32
P-5D	832.75	17.42	815.33
P-6U	832.21	14.53	817.68
P-6D	828.96	13.70	815.26
P-7UR-05	833.02	14.91	818.11
P-7D	837.53	23.24	814.29
P-8U	842.42	23.31	819.11
P-8D	841.77	27.57	814.20
P-9U	854.59	31.12	823.47
P-9D	844.06	28.50	815.56
P-10U	843.04	28.75	814.29
P-10D	839.45	25.26	814.19

Notes:

Top of casing elevation surveyed by City of Ann Arbor Surveyors between 2016 and 2018.

ft. amsl: feet above mean sea level

NA : Not applicable; well was not accessible or the reading was not reliable.

NM: not measured

Monitoring wells W-105-20, W-106-20, W-107-20 and W-108-20 were installed and surveyed in 2020.

PW-2R-01 was replaced with PW-2R-22 in December 2022.

Monitoring wells W-88-92, PW-1R-12, PW-2R-22, P-1U, P-2U and P-2D were surveyed in March 2024.

W-84-92 could not be located during October 2024 static water level gauging.

TABLE 3
Historical Groundwater Elevation Summary
Ann Arbor Landfill
Ann Arbor, Michigan

Monitoring Well ID	Top of Casing Elevation (ft amsl) 2018	April 2021 Groundwater Elevation	October 2021 Groundwater Elevation	April 2022 Groundwater Elevation	October 2022 Groundwater Elevation	April 2023 Groundwater Elevation	October 2023 Groundwater Elevation	April 2024 Groundwater Elevation	October 2024 Groundwater Elevation
W-14-84	831.93	820.32	820.52	821.46	820.40	820.09	819.78	819.83	819.62
W-46-89	858.52	817.24	817.48	818.06	817.76	816.72	816.12	815.70	815.73
W-47-89	828.29	814.60	814.83	815.44	812.77	815.23	814.37	814.48	814.13
W-48-89	829.91	814.48	814.68	815.31	816.40	815.05	814.27	814.30	814.13
W-50-89	830.85	814.76	814.76	815.39	814.68	815.16	814.32	813.39	814.64
W-51-89	831.37	814.59	814.78	815.41	814.74	815.19	814.33	814.39	814.22
W-64-90	825.98	814.85	814.96	815.59	814.80	815.27	814.44	814.52	814.33
W-68-90	823.79	804.47	804.76	805.44	804.70	805.09	804.86	805.28	804.94
W-70-92R	836.50	816.83	816.95	817.70	817.33	816.19	815.46	815.01	815.16
W-72-90	836.51	816.19	816.74	817.85	816.45	816.70	816.27	816.64	816.04
W-84-92	826.32	814.94	815.25	816.22	815.38	815.56	814.89	814.99	NM
W-85-92	838.39	815.46	815.95	816.63	815.61	815.93	815.32	815.41	815.13
W-87-92	832.79	815.46	815.90	816.55	815.83	815.98	815.26	815.42	815.06
W-88-92	835.47	815.31	815.76	816.42	815.67	815.76	815.19	815.33	815.05
W-89-92	837.77	815.60	816.06	816.79	815.87	816.04	815.34	815.49	815.64
W-90-92	833.05	815.53	816.06	816.75	815.82	816.02	815.33	815.42	815.13
W-92-92	827.80	815.46	815.99	816.69	815.70	815.96	815.26	815.33	815.05
W-94-92	822.92	814.84	814.93	815.59	814.74	815.22	814.43	814.43	814.18
W-96-92	834.35	816.16	816.11	817.55	816.75	NA	821.94	829.24	815.91
W-99-93	828.62	815.50	816.05	816.70	815.82	815.99	815.32	815.42	815.11
W-100-93	822.42	816.11	815.97	816.67	815.77	815.94	815.23	815.34	815.05
W-101-93	825.71	812.69	808.63	809.04	810.37	811.79	812.38	812.90	813.05
W-105-20	823.54	804.35	804.58	805.39	804.56	808.12	804.77	805.17	804.80
W-106-20	820.24	813.23	813.36	814.33	812.52	812.84	812.88	813.53	813.01
W-107-20	828.02	806.86	806.71	806.57	807.58	806.80	807.27	805.74	807.56
W-108-20	823.73	814.10	814.35	814.99	814.29	814.74	813.93	814.05	813.78
OW-31-08	831.26	814.54	814.85	815.36	814.67	815.25	814.35	814.46	814.18
OW-32-08	826.48	814.56	814.75	815.33	814.74	815.21	814.26	814.33	814.24
OW-33-08	834.51	814.70	815.26	815.83	815.09	815.34	814.64	814.75	814.46
PW-1R-12	838.16	805.98	804.57	813.63	808.63	807.74	808.57	802.73	809.78
PW-2R-01	825.96	814.72	810.45	809.53	--	--	--	NM	NM
PW-2R-22	825.33	--	--	--	--	NM	NM	808.27	814.18
PW-3R-12	841.48	807.38	812.41	812.69	810.53	809.27	811.63	813.12	813.06
P-0U	841.43	815.78	816.28	816.98	816.15	812.25	NM	815.71	815.33
P-0D	845.14	815.42	815.90	816.55	815.80	815.90	814.57	815.41	815.12
P-1U	854.32	816.79	817.24	817.82	817.26	816.80	816.21	816.00	815.78
P-1D	857.85	815.51	815.86	816.51	816.03	815.79	815.45	816.01	815.80
P-2U	854.47	817.20	817.54	818.10	817.72	817.27	816.29	815.93	815.87
P-2D	851.34	815.46	815.74	816.36	816.08	815.59	815.47	815.49	815.34
P-3U	848.32	817.51	817.85	818.45	818.13	817.13	816.51	816.16	816.15
P-3DR	849.13	815.57	815.75	816.42	816.11	815.71	815.54	815.55	815.44
P-4U	837.44	816.02	817.15	817.87	817.49	816.47	815.72	815.27	815.35
P-4DR	839.08	815.32	815.44	816.11	815.80	815.78	815.23	815.19	815.08
P-5U	832.73	816.95	817.07	821.19	817.41	816.36	815.64	815.20	815.32
P-5D	832.75	815.52	815.70	816.39	816.05	815.61	815.44	815.41	815.33
P-6U	832.21	818.27	819.05	819.73	815.76	818.55	817.93	817.95	817.68
P-6D	828.96	815.51	815.69	816.37	816.00	815.64	815.40	815.36	815.26
P-7UR-05	833.02	819.07	819.38	820.08	818.79	819.19	818.31	818.52	818.11
P-7D	837.53	815.13	815.22	815.55	814.80	815.30	814.44	814.53	814.29
P-8U	842.42	819.69	820.56	821.28	819.86	820.43	819.25	819.73	819.11
P-8D	841.77	814.61	814.90	815.45	814.79	815.27	814.41	814.48	814.20
P-9U	854.59	823.42	823.77	824.77	823.70	823.82	823.28	823.87	823.47
P-9D	844.06	815.75	816.28	817.04	815.98	816.23	815.79	815.91	815.56
P-10U	843.04	814.66	814.93	815.49	814.84	815.33	814.44	814.52	814.29
P-10D	839.45	814.57	814.84	815.42	814.75	815.27	814.40	814.44	814.19

Notes:
1. Data from the most current eight quarters is represented on this table.

2. All wells were surveyed by City of Ann Arbor Surveyors between 2016 and 2018, except wells W-105-20, W-106-20, W-107-20 and W-108-20, which were installed and surveyed in 2020. Beginning with the October 2018 event these surveyed elevations were used to calculate groundwater elevations. Monitoring wells W-88-92, PW-1R-12, PW-2R-22, P-1U, P-2U and P-2D were surveyed in March 2024 and these surveyed elevations were used to calculate groundwater elevations beginning in April 2024.
3. NM = not measured
4. "-" = Monitoring well did not exist or was not accessible.
5. PW-2R-01 was replaced with PW-2R-22 in December 2022.
6. P-0U was covered by a soil pile from recent paving in October 2023.
7. W-84-92 could not be located during October 2024 static water level gauging.

FIGURES



P:\Projects\Ann Arbor\Landfill\GIS\Figures\GroundWater\4th Qtr 2024\Well Location Map_REV1.mxd

Source: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Upper Aquifer Monitoring Well

Slurry Wall*

PW-1R-12 Purge Well Location

W-84-92 Monitoring Well Location

OW-31-08 Observation Well Location

P-1D Piezometer Well Location

0 500 1,000 Feet

N

*Slurry wall location is approximate

TETRA TECH

CHECKED: PJM

DATE: 9/10/2024

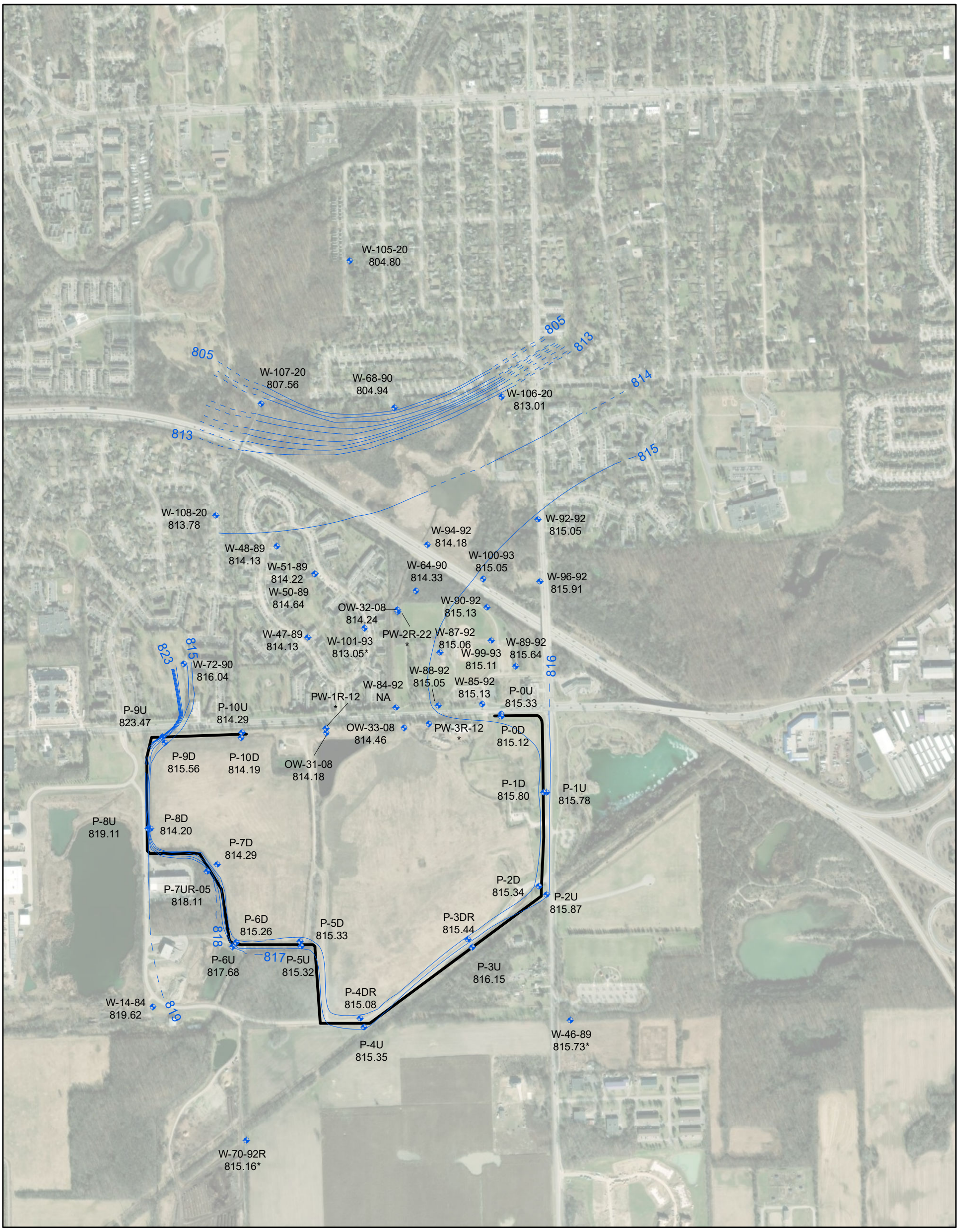
ANN ARBOR LANDFILL
ANN ARBOR, MICHIGAN

WELL LOCATION MAP

FIGURE

1

\\tt.local\gfs\USVolume5\Legacy\tts008fs1\ECA\Projects-ECA\Projects\Ann Arbor\Landfill\GIS\Figures\GroundWater\4th Qtr 2024\UpperAquiferElevation_Oct2024.mxd



Base Map Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Upper Aquifer Well	PW-1R-01	Purge Well Location
813 Groundwater Elevation Contour	W-84-92	Monitoring Well Location
813 Groundwater Elevation	OW-31-08	Observation Well Location
Slurry Wall[2]	P-1D	Piezometer Well Location

N

0 500 1,000 Feet

Notes:
1. Contour Interval = 1.0 feet
2. Slurry Wall Location is Approximate.
3. Groundwater elevations for PW-1R-12, PW-2R-22 and PW-3R-12 were not used in the construction of this map as they are pumping wells.
4. * Water level not used in the construction of contours.
5. NA = not applicable, well not measured.
6. Datum is NAVD 1988.

TETRA TECH

CHECKED: PJM

DATE: 1/13/2025

ANN ARBOR LANDFILL
ANN ARBOR, MICHIGAN

UPPER AQUIFER GROUNDWATER ELEVATION CONTOUR MAP OCTOBER 7, 2024

FIGURE

2

W-87-92				
Analyte	Apr. 2023	Oct. 2023	Apr. 2024	Oct. 2024
Diethyl ether	2.2	2.5	2.4	2.2
Vinyl chloride	19	12	14	20
Total VOCs	21.2	14.5	16.4	22.2

W-100-93				
Analyte	Apr. 2023	Oct. 2023	Apr. 2024	Oct. 2024
Acetone	ND	ND	ND	28
Vinyl chloride	1.4	ND	3.4	ND
Total VOCs	1.4	ND	3.4	28

PW-2R-01/PW-2R-22				
Analyte	Apr. 2023	Oct. 2023	Apr. 2024	Oct. 2024
Diethyl ether	4.6	2.5	1.7	1.6
Vinyl chloride	5.2	1.7	1.4	1.4
Total VOCs	9.8	4.2	3.1	3.0

W-96-92				
Analyte	Apr. 2023	Oct. 2023	Apr. 2024	Oct. 2024
Acetone	ND	ND	ND	12
Total VOCs	ND	ND	ND	12

W-90-92				
Analyte	Apr. 2023	Oct. 2023	Apr. 2024	Oct. 2024
Vinyl chloride	ND	ND	1.3	ND
Total VOCs	ND	ND	1.3	ND

PW-1R-12				
Analyte	Apr. 2023	Oct. 2023	Apr. 2024	Oct. 2024
Diethyl ether	4.7	6.3	5.4	6.5
Total VOCs	4.7	6.3	5.4	6.5

W-85-92				
Analyte	Apr. 2023	Oct. 2023	Apr. 2024	Oct. 2024
cis-1,2-Dichloroethene	79	72	80	65
trans-1,2-Dichloroethene	7.7	6.8	7.6	6.3
Diethyl ether	1.3	1.5	1.5	<4.0
Trichloroethene	4.1	3.4	1.7	6.4
Vinyl chloride	1.4	ND	1.5	<4.0
Total VOCs	93.5	83.7	92.3	77.7

W-84-92				
Analyte	Apr. 2023	Oct. 2023	Apr. 2024	Oct. 2024
Diethyl ether	ND	3.5	1.7	3.1
Vinyl chloride	ND	ND	ND	1.4
Total VOCs	ND	3.5	1.7	4.5

W-88-92				
Analyte	Apr. 2023	Oct. 2023	Apr. 2024	Oct. 2024
cis-1,2-Dichloroethene	36	35	27	38
trans-1,2-Dichloroethene	9.0	9.9	7.8	8.2
Vinyl chloride	69	65	53	60
Total VOCs	114.0	109.9	87.8	106.2

PW-3R-12				
Analyte	Jun. 2023	Oct. 2023	Apr. 2024	Oct. 2024
Acetone	6.1*+	ND	ND	ND
cis-1,2-Dichloroethene	9.2	9.1	6.9	7.9
trans-1,2-Dichloroethene	2.0	2.2	2.0	2.1
Diethyl ether	1.0	9.6	7.0	8.2
Toluene	5.5	ND	ND	ND
Vinyl chloride	12	49	39	34
Total VOCs	35.8	69.9	54.9	52.2

W-94-92
W-92-92
W-47-89
W-99-93
W-89-92
100
75
50
25

P:\Projects\Ann Arbor\Landfill\GIS\Figures\GroundWater\4th Qtr 2024\October 2024_VOCs_Isoconcentration Map.mxd

Base Map Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Monitoring well with detectable VOC concentrations
Monitoring well with no detectable VOC concentrations
Slurry Wall[3]
October 2024 Isoconcentration Contour Line (Contour interval = 25 feet)

N
0 500 1,000 Feet

Notes:
1. All units expressed in micrograms per liter.
2. ND = below current reporting limits.
3. Slurry wall location is approximate.
4. Total Volatile Organic Compounds (VOCs) do not include 1,4-Dioxane concentrations.
5. PW-1R-12, PW-2R-22 and PW-3R-12 are not used for contouring.
6. Total detectable VOC concentrations are depicted in red.
7. PW-2R-01 was replaced in December 2022. The new well was shut off due to mechanical issues in April 2023.
8. PW-2R-22 and PW-3R-12 were not operational during the April 2023 semi-annual event but were sampled in June 2023.
9. PW-2R-22 was not operational during the October 2024 semi-annual event but was sampled in December 2024.
10. *+ = LCS and/or LCSD is outside acceptance limits, high biased.
11. Locations with no data presented have been ND for all parameters for at least the last four quarters.
12. The W-85-92 October 2024 sample was diluted and reporting limits are elevated.
13. The October 2024 acetone detections are likley a result of laboratory glassware or field blank contamination.

TETRA TECH

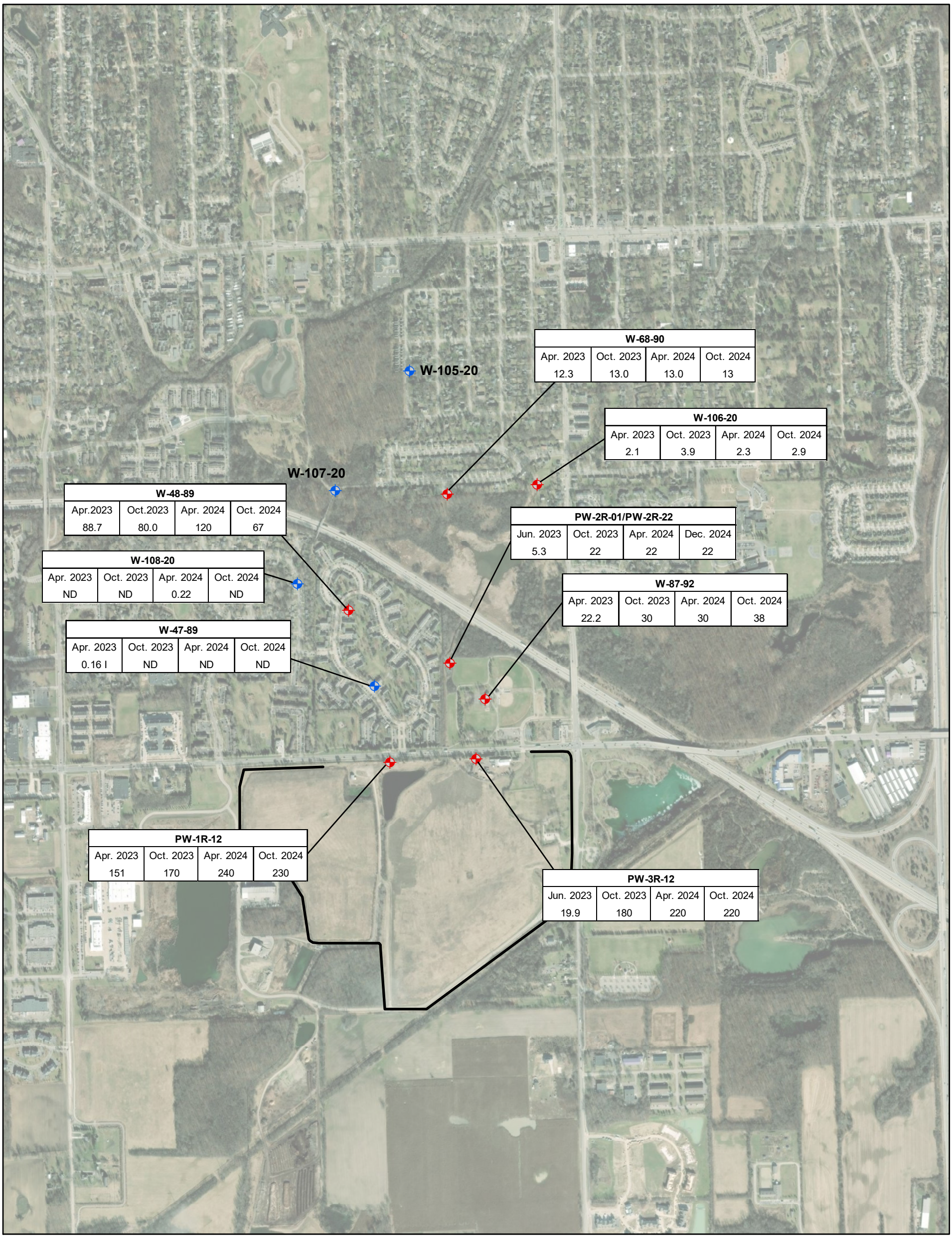
CHECKED: PJM

DATE: 1/27/2025

ANN ARBOR LANDFILL
ANN ARBOR, MICHIGAN

TOTAL VOCs ISOCONCENTRATION MAP OCTOBER 2024

FIGURE
3



P:\Projects\Ann Arbor\Landfill\GIS\Figures\GroundWater\4th Qtr 2024\October 2024_dioxane_Concentration Map.mxd

Base Map Source: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

- Monitoring well with detectable concentrations of 1,4-Dioxane
- Monitoring well with no detectable concentrations of 1,4-Dioxane
- Slurry Wall[2]

0 500 1,000 2,000 Feet

N

Notes:
1. All units expressed in micrograms per liter.
2. Slurry Wall Location is Approximate.
3. I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
4. PW-2R-01 was replaced in December 2022. The new well was shut off due to mechanical issues in April 2023.
5. PW-2R-22 and PW-3R-12 were not operational during the April 2023 semi-annual event but were sampled in June 2023.
6. PW-2R-22 was not operational during the October 2024 semi-annual event but was sampled in December 2024.
7. Locations with no data presented have been ND for all parameters for at least the last four quarters.

TETRA TECH

CHECKED: PJM | DATE: 1/13/2025

ANN ARBOR LANDFILL
ANN ARBOR, MICHIGAN

1,4-DIOXANE CONCENTRATION MAP OCTOBER 2024

FIGURE 4

APPENDICES

APPENDIX A

Groundwater Sampling Record

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Co-op, near # 2650, within fenced in area, thru gate(stick up) **SAMPLE: W-47-89**

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: **Weather:** Sunny 70°F **Date:** 10/11/24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 13.76 **Initial Depth to Water (ft.):** 14.04

Total Depth of Well (ft.): 31.00 **Time Sampled:**

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):**

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - 1,4 dioxane and VOCs (April & Oct)

Comments: Throttle @ 25 PSI, water clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/4/24										
18:08	13.76	13.10	7.02	0.889	mS/cm	43.7	0	9.65	1.0	
13:40	14.04	17.4	6.91	0.766	mS/cm	193.7	4.55	64.92		
13:43	14.04	17.4	6.87	0.754	mS/cm	165.5	3.20	29.39		
13:46	14.04	17.3	6.89	0.748	mS/cm	125.3	2.44	22.39		
13:49	"	17.3	6.92	0.747	mS/cm	53.4	1.50	14.87		
13:52	"	17.2	6.95	0.750	mS/cm	16.6	1.00	15.31		
13:55	"	17.2	6.97	0.752	mS/cm	3.8	0.87	18.87		
13:58	"	17.1	6.99	0.753	mS/cm	-8.0	0.68	24.98		
14:01		17.2	6.98	0.755	mS/cm	-8.5	0.71	27.29		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Vol=pi(r)2*h 1 liter = .264 gallons 1 gallon = 231 inches³
1 liter = 61.02 inches³ 1 inch = 2.54 cm

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: 2908 between large bush and fence **SAMPLE:** W-48-89

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF | JMH **Weather:** sunny, 70°F **Date:** 10/10/24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 15.25 **Initial Depth to Water (ft.):** 16.40

Total Depth of Well (ft.): 36.90 **Time Sampled:** 15:10

Water Volume in Well (gal.): **Actual Volume Removed (gal.):** 0.5

Disposal Method for Purged Water: Sanitary sewer

Parameters: 1,4 dioxane

Comments: Throttle @ 35 PSI, water clear.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/4/24										
17:25	15.50	13.3	7.01	1.077	mS/cm	-5.3	0.20	32.89	2.5	
14:49	16.60	17.2	7.25	0.777	ms/cm	138.6	1.34	5.49		
14:52	16.60	18.1	7.23	0.790	ms/cm	113.8	0.93	3.72		
14:55	16.60	18.4	7.23	0.796	ms/cm	99.3	0.80	4.19		
14:58	16.60	18.4	7.23	0.799	ms/cm	86.2	0.69	3.96		
15:01	16.60	18.6	7.21	0.800	ms/cm	81.5	0.64	3.04		
15:04	16.60	18.6	7.21	0.803	ms/cm	79.2	0.62	2.83		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Vol=pi(r)2*h 1 liter = .264 gallons 1 gallon = 231 inches³

1 liter = 61.02 inches³ 1 inch = 2.54 cm

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: East side of dead-end @ Eddy, off of verle (stick up) **SAMPLE: W-68-90**

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF, JMH **Weather:** sunny, 45°F **Date:** 10/10/24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 18.45 **Initial Depth to Water (ft.):** 18.86

Total Depth of Well (ft.): 24.50 **Time Sampled:** 10:45

Water Volume in Well (gal.): **Actual Volume Removed (gal.):** 0.5

Disposal Method for Purged Water: Sanitary sewer

Parameters: 1,4 dioxane

Comments: Throttle @ 25 psi, water clear.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/4/24										
12:02	18.57	10.3	6.92	1.402	mS/cm	-23.6	0.00	3.1	1.1	
10:23	18.86	12.3	9.78	0.718	ms/cm	199.4	8.47	3.43		
10:26	18.86	12.2	9.78	0.718	ms/cm	196.5	8.15	2.95		
10:29		12.2	9.77	0.721	ms/cm	194.0	7.22	3.37		
10:32		12.2	9.85	0.961	ms/cm	-98.2	4.48	6.72		
10:35		12.1	7.12	1.116	ms/cm	-88.8	2.14	4.43		
10:38		12.0	7.03	1.148	ms/cm	-78.5	0.87	3.63		
10:41	18.86	12.0	7.01	1.153	ms/cm	-76.5	0.57	2.89		
10:44	18.86	12.0	7.01	1.153	ms/cm	-77.1	0.51	2.65		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=p(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Park, near the meter pit **SAMPLE:** W-84-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF, JMH **Weather:** Sunny, 75°F **Date:** 10/11/24

Sampling Equipment: Peristaltic Pump

Previous Water Level (ft.): 11.32 **Initial Depth to Water (ft.):** 10.85

Total Depth of Well (ft.): 21.02 **Time Sampled:** 16:35

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** 0.5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA: VOCs (April and Oct)

Comments: Water initially black, then mostly clear. Pump set @ 18.5', flow rate = 100 mL/min.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Parameter Stabilization Ranges		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/5/24										
15:12	11.78	10.80	7.14	0.501	mS/cm	114.6	1.9	28.47	1	black particles in water
16:11	11.6	16.7	7.02	0.779	mS/cm	-116.8	1.27	71.69		
16:14	11.6	16.9	6.95	0.777	ms/cm	-122.9	0.53	52.04		
16:17	11.8	17.2	6.93	0.791	ms/cm	-124.7	0.37	38.58		
16:20	11.8	17.5	6.91	0.809	ms/cm	-122.4	0.32	35.29		
16:23	11.8	17.2	6.90	0.825	ms/cm	-118.5	0.27	30.84		
16:26	11.8	17.2	6.89	0.842	ms/cm	-115.0	0.24	29.56		
16:29	11.8	17.0	6.88	0.845	ms/cm	-111.8	0.22	24.20		
16:32	11.8	17.0	6.87	0.862	ms/cm	-109.6	0.21	26.50		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech-GEO
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Park, near driveway/entrance

SAMPLE: W-85-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: **Weather:** Sunny 50°F **Date:** 10/11/24

Sampling Equipment: Peristaltic Pump

Previous Water Level (ft.): 22.95 **Initial Depth to Water (ft.):** 23.30

Total Depth of Well (ft.): 32.38 **Time Sampled:** 10:10

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):**

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April, & Oct)

Comments: Water cloudy, then clear. Pump set at 29', flow rate = 100 mL/min.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/5/24										
12:14	22.95	11.00	6.58	1.743	mS/cm	47.7	0.00	6.3	0.5	
9:35	23.30	14.6	6.89	1.103	ms/cm	224.3	1.38	25.10		
9:38	23.30	14.7	6.84	1.147	ms/cm	122.1	0.74	23.14		
9:41	23.30	14.7	6.80	1.216	ms/cm	-18.8	0.49	17.51		
9:44	"	14.6	6.76	1.299	ms/cm	-38.0	0.37	12.03		
9:47	—	—	—	—	—	—	—	—	—	had to fix tubing
9:53	23.30	15.1	6.75	1.387	ms/cm	-19.6	1.52	14.97		
9:56	"	14.8	6.72	1.383	"	-21.4	0.95	15.22		
9:59	"	14.8	6.71	1.391	"	-22.1	0.38	10.18		
10:02	"	14.7	6.70	1.396	"	-23.1	0.28	7.98		

All measurements to Nearest Hundredth of a Foot (0.01 feet). Vol=pi(r)2*h 1 liter = .264 gallons 1 gallon = 231 inches³

Well diameter gallon per ft: 1 liter = 61.02 inches³ 1 inch = 2.54 cm

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Park, near bathroom and red playground area, next to bench **SAMPLE:** W-87-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF, JMH **Weather:** Sunny 78°F **Date:** 10/11/24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 17.37 **Initial Depth to Water (ft.):** 17.70

Total Depth of Well (ft.): 26.72 **Time Sampled:** 15:35

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):**

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - 1,4 dioxane and VOCs (April & Oct)

Comments: Throttle @ 45 PSI. Water clear.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Parameter Stabilization Ranges		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/5/24										
14:02	17.37	12.10	6.97	1.299	mS/cm	-2.9	0.37	11.95	2.0	
15:18	17.70	15.9	6.98	1.154	mS/cm	-21.5	1.42	87.21		
15:21	17.70	16.3	6.96	1.157	mS/cm	-56.2	0.57	57.06		
15:24	17.70	16.3	6.97	1.154		-65.6	0.40	45.86		
15:27	"	16.1	6.97	1.147		-68.7	0.31	41.60		
15:30	"	16.0	6.98	1.140		-71.5	0.24	33.41		
15:33	"	16.0	6.98	1.139		-73.1	0.22	34.60		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: SE Area Park, grass area south of sidewalk **SAMPLE:** W-88-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF, JMH **Weather:** Sunny 78°F **Date:** 10/11/24

Sampling Equipment: Peristaltic Pump

Previous Water Level (ft.): 20.07 **Initial Depth to Water (ft.):** 20.41

Total Depth of Well (ft.): 29.21 **Time Sampled:** 14:55

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** 0.5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA: VOCs (April and Oct)

Comments: Water clear, pump set @ 27', flow rate = 100 mL/min.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/2/24										
15:46	20.08	10.00	7.05	1.573	mS/cm	2.4	-0.75	1.12	0.5	
14:30	20.41	16.0	6.81	1.220	ms/cm	59.3	1.18	84.22		
14:33	20.41	16.8	6.79	1.244	ms/cm	-4.7	0.64	23.81		
14:36	20.41	17.0	6.79	1.254	ms/cm	-14.0	0.45	23.12		
14:39	20.41	17.2	6.79	1.255	ms/cm	-20.6	0.35	21.44		
14:42	20.41	17.3	6.79	1.257	ms/cm	-24.1	0.28	15.85		
14:45	20.41	17.3	6.79	1.254	ms/cm	-26.2	0.24	16.71		
14:48	20.41	17.4	6.79	1.261	ms/cm	-27.4	0.23	15.38		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Park, east of gravel lot, near light post in grass **SAMPLE:** W-89-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF / JMH **Weather:** Sunny, 60°F **Date:** 10/10/24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 22.25 **Initial Depth to Water (ft.):** 22.68

Total Depth of Well (ft.): 32.41 **Time Sampled:** 17:35

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** 0.5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April & Oct)

Comments: Throttle @ 50 PSI, water clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/5/24										
12:58	22.27	10.80	6.97	1.037	mS/cm	-42	-0.89	3.44	1.50	
17:20	22.68	13.9	7.16	0.777	ms/cm	256.2	3.48	62.79		
17:23	22.68	14.1	7.13	0.783	ms/cm	253.3	2.70	23.35		
17:26	22.68	14.2	7.13	0.787		251.4	2.59	19.24		
17:29	22.68	14.2	7.13	0.789		250.8	2.52	19.76		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=p(r)2*h

1 liter = 264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Park, N of baseball field, enter trees at end of pines before curve in sidewalk

SAMPLE: W-90-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF / JMH **Weather:** Sunny, 60°F **Date:** 10/10/24

Sampling Equipment: Peristaltic Pump

Previous Water Level (ft.): 17.51 **Initial Depth to Water (ft.):** 17.94

Total Depth of Well (ft.): 24.05 **Time Sampled:** 16:15

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):**

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April & Oct)

Comments: Water clear. Pump set @ 21.5' Flow rate = 100 mL/min

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/3/24										
15:57	17.51	9.30	7.17	0.843	mS/cm	125.5	-0.72	2.70	0.6	
15:55	17.98	14.3	7.15	0.685	mS/cm	239.6	1.85	4.59		
15:58	17.97	14.2	7.11	0.683	mS/cm	237.0	1.00	3.58		
16:01	17.97	14.3	7.10	0.683	mS/cm	233.9	0.65	3.44		
16:04	17.97	14.3	7.09	0.683		232.1	0.54	3.27		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Vol=pi(r)2*h | 1 liter = .264 gallons | 1 liter = 61.02 inches | 1 gallon = 231 inches | 1 inch = 2.54 cm

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: On sidewalk along Platt Road **SAMPLE:** W-92-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF, JMH **Weather:** sunny, 55°F **Date:** 10/10/24

Sampling Equipment: Peristaltic pump

Previous Water Level (ft.): 12.29 **Initial Depth to Water (ft.):** 12.78

Total Depth of Well (ft.): 18.24 **Time Sampled:** 11:55

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** 0.5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April, & Oct)

Comments: Pump set at 15', Pumping rate = 100 ml/min, Water clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Parameter Stabilization Ranges		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/4/24										
13:46	12.31	11.30	7.06	1.850	mS/cm	137.1	-0.60	5.9	0.70	parameters did not stabilize, purged dry
11:18	12.78	14.8	7.03	1.265	ms/cm	157.3	1.20	7.69		
11:21	12.78	15.7	7.01	1.285	ms/cm	137.7	0.72	8.59		
11:24	12.78	16.1	7.00	1.297	ms/cm	118.0	0.56	4.48		
11:27	"	16.1	6.99	1.299	ms/cm	101.4	0.47	5.03		
11:30	"	16.4	~~6.98~~ 6.98	1.302	ms/cm	86.2	0.44	3.97		
11:33	"	16.3	6.98	1.310	ms/cm	74.7	0.40	5.07		
11:36		16.3	6.97	1.311	ms/cm	63.9	0.37	3.82		
11:39		16.4	6.97	1.309	ms/cm	52.1	0.35	3.55		
11:42		16.4	6.97	1.307	ms/cm	45.0	0.31	3.81		
11:45		16.5	6.97	1.307	ms/cm	40.1	0.31	3.51		
11:48		16.4	6.97	1.302	ms/cm	37.0	0.30	3.15		

All measurements to Nearest Hundredth of a Foot (0.01 feet).
Well diameter gallon per ft:
1/8 inch 3/16 inch 1/4 inch 3/8 inch 1/2 inch 5/8 inch 3/4 inch 1 inch 2 inch 4 inch

Vol=pi(r)2*h
1 liter = .264 gallons
1 liter = 61.02 inches³
1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: I-94, near wetland past W-100-93, near orange warning sign, past red brick bldg in distance (stick up)

SAMPLE: W-94-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF, JMH **Weather:** SUNNY, 68°F **Date:** 10/11/24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 8.47 **Initial Depth to Water (ft.):** 8.79

Total Depth of Well (ft.): 34.96 **Time Sampled:** 12:15

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** 0.5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April & Oct)

Comments: Throttle @ 35 PSI, water clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
Parameter Stabilization Ranges		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/5/24										
11:00	8.50	10.30	7.08	1.357	mS/cm	-25.8	0.00	7.50	2.0	
11:49	8.79	13.9	7.64	1.075	mS/cm	37.6	1.19	568.72		
11:52	"	14.2	7.63	1.083	"	-50.2	0.74	350.49		
11:55	"	14.3	7.65	1.087	"	-79.6	0.50	285.18		
11:58	"	14.3	7.68	1.087	"	-92.0	0.38	163.47		
12:01	"	14.2	7.70	1.087	"	-96.8	0.31	113.72		
12:04	"	14.1	7.70	1.087	"	-99.4	0.28	94.78		
12:07	8.79	14.2	7.70	1.088	mS/cm	-99.3	0.24	104.61		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter gallon per ft

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches

1 gallon = 231 inches
1 inch = 2.54 cm

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Platt Rd., in front of 3802 **SAMPLE:** W-96-92

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF, JMH **Weather:** SUNNY, 65°F **Date:** 10/10/24

Sampling Equipment: Peristaltic Pump

Previous Water Level (ft.): 5.28 **Initial Depth to Water (ft.):** 18.48

Total Depth of Well (ft.): 25.64 **Time Sampled:** * 10/11/24 @ 17:00

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):**

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April & Oct)

Comments: Water clear. Excessive drawdown.

Pump set at 23'. Pump rate = 100 mL/min.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/4/24										
14:37	10.21	11.70	7.13	7.608	mS/cm	-3.1	-0.77	11.19	4.0	parameters did not stabilize, purged dry
13:01	19.62	15.3	7.32	1.977	ms/cm	-121.1	0.79	25.43		
13:04	19.68	15.5	7.32	1.941	ms/cm	-126.3	0.51	28.79		
13:07	20.52	15.9	7.31	1.899	ms/cm	-126.0	0.33	25.86		
13:10	20.82	16.0	7.31	1.862	ms/cm	-125.3	~~0.8~~ 0.28	30.79		
13:13	21.03	16.1	7.29	1.791		-121.8	0.24	29.73		
13:16	21.42	16.0	7.28	1.690		-166.0	0.24	42.49		
13:19	21.68	16.2	7.28	1.682		-107.1	0.33	38.99		
13:22	21.78	16.4	7.27	1.685		-105.2	0.36	39.26		
~~13:25~~ 13:25	21.91	16.8	7.27	1.697		-101.8	0.40	40.34		
13:28	—								1	well purged dry

All measurements to Nearest Hundredth of a Foot (0.01 feet). Vol=pi(r)2*h 1 liter = .264 gallons 1 gallon = 231 inches³

Well diameter gallon per ft: 1 liter = 61.02 inches³ 1 inch = 2.54 cm

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: SE Area Park, grass between baseball fields **SAMPLE:** W-99-93

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF/JMH **Weather:** SUNNY, 60°F **Date:** 10/10/24

Sampling Equipment: Peristaltic Pump

Previous Water Level (ft.): 13.14 **Initial Depth to Water (ft.):** 13.52

Total Depth of Well (ft.): 16.58 **Time Sampled:** 17:00

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** 0.5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April & Oct)

Comments: Water clear, flow rate = 100 mL/min, pump set at 14'

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/2/24										
14:48	13.16	8.70	7.83	0.526	ms/cm	217.7	2.25	11.15	0.50	
16:40	13.52	15.7	7.77	0.375	ms/cm	230.3	3.80	9.75		
16:43	13.52	15.7	7.62	0.378	"	229.8	4.42	5.69		
16:46	13.52	15.7	7.54	0.377	"	228.7	4.76	4.92		
16:49	13.52	15.7	7.51	0.377	"	228.0	4.91	4.63		
16:52	13.52	15.6	7.50	0.376	"	228.0	4.99	4.23		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: I-94, past 23 and 2 overpasseses, eastern well under willow tree **SAMPLE: W-100-93**

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF, JMH **Weather:** sunny, 60°F **Date:** 10/11/24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 6.97 **Initial Depth to Water (ft.):** 7.45

Total Depth of Well (ft.): 29.51 **Time Sampled:** 11:25

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):**

Disposal Method for Purged Water: Sanitary Sewer

Parameters: SA - VOCs (April & Oct)

Comments: Throttle @ 30 PSI, water clear. Well wizard causing air in flow cell.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/5/24										
9:51	7.00	7.50	7.21	1.255	mS/cm	-49.3	-0.68	0.57	1.00	
11:08	7.45	12.9	8.28	0.695	mS/cm	170.2	1.36	4.69		
11:11		13.0	8.27	0.694	ms/cm	170.4	0.58	4.54		
11:14		13.0	8.28	0.694	ms/cm	169.1	0.43	6.74		
11:17		13.0	8.28	0.694	ms/cm	167.4	0.33	4.98		
11:20		12.9	8.27	0.694	ms/cm	165.5	0.27	4.99		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Vol=pi(r)2*h 1 liter = .264 gallons 1 liter = 61.02 inches³ 1 gallon = 231 inches³ 1 inch = 2.54 cm

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: 3255 Cardinal Ave. ROW **SAMPLE:** W-105-20

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: JMH / RMF **Weather:** Sunny 65°F **Date:** 10/8/24

Sampling Equipment: peristaltic pump

Previous Water Level (ft.): 18.29 **Initial Depth to Water (ft.):** 18.65

Total Depth of Well (ft.): 27.85 **Time Sampled:** 15:55

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):** 0.25

Disposal Method for Purged Water: Sanitary Sewer

Parameters: 1,4-dioxane

Comments: Pumping rate @ 150 mL/min

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/4/24										
10:03	18.30	9.20	7.06	0.811	mS/cm	158.0	0.00	9.87	0.75	
15:39	18.68	16.9	7.01	0.804	mS/cm	180.0	2.00	14.35		
15:42	18.68	16.9	7.01	0.801	mS/cm	164.6	1.40	11.51		
15:45	18.68	17.3	7.02	0.804	mS/cm	154.3	1.24	11.27		
15:48	18.68	17.7	7.02	0.812	mS/cm	144.6	1.22	10.92		
15:51	18.68	17.9	7.02	0.816	mS/cm	139.5	1.21	10.70		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches

1 gallon = 231 inches
1 inch = 2.54 cm

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Pilgrim Park **SAMPLE:** W-106-20

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF / JMH **Weather:** sunny, low 70's **Date:** 10/9/24

Sampling Equipment: peristaltic pump

Previous Water Level (ft.): 6.43 **Initial Depth to Water (ft.):** 7.64

Total Depth of Well (ft.): 17.86 **Time Sampled:** 16:15

Water Volume in Well (gal.): NM **Purge Volume Prior to Sampling (gal.):** 0.6

Disposal Method for Purged Water: Sanitary Sewer

Parameters: 1,4-dioxane

Comments: Pump rate 100 mL/min. Water clear.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/4/24										
12:53	6.54	11.00	6.92	1.171	ms/cm	26.5	-0.69	35.16	0.50	
15:53	7.89	14.4	7.08	0.974	ms/cm	-65.2	1.17	1432	0.1	
15:56	7.87	14.8	7.03	0.973	ms/cm	-61.3	0.76	131.24	0.2	
15:59	7.86	14.9	7.00	0.976	ms/cm	-58.3	0.62	87.67	0.3	
16:02	7.86	14.8	7.00	0.974	ms/cm	-58.1	0.54	72.47	0.4	
16:05	7.86	14.9	6.99	0.973	ms/cm	-58.2	0.47	70.62	0.5	
16:08	7.86	14.8	6.99	0.971	ms/cm	-58.1	0.45	70.69	0.6	

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter gallon per ft.

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=p(r)2*h

1 liter = 264 gallons
1 liter = 61.02 inches³

1 gallon = 231 inches³
1 inch = 2.54 cm

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: Mary Beth Doyle Park (between pathways) **SAMPLE:** W-107-20

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF | JMH **Weather:** sunny, low 70's **Date:** 10/9/24

Sampling Equipment: peristaltic pump

Previous Water Level (ft.): 19.86 **Initial Depth to Water (ft.):** 14.52

Total Depth of Well (ft.): 31.55 **Time Sampled:** 17:15

Water Volume in Well (gal.): NM **Purge Volume Prior to Sampling (gal.):** 0.5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: 1,4-dioxane

Comments: 100mL/min, water clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/4/24										
11:18	22.80	11.10	6.94	1.081	mS/cm	40.4	0.00	12.10	0.80	
16:41	14.54	13.2	7.05	0.874	ms/cm	134.1	1.63	71.18		
16:44	14.7	13.4	7.02	0.871	ms/cm	116.2	0.80	56.95		
16:47	14.7	13.5	7.02	0.874	ms/cm	99.2	0.61	57.79		
16:50	14.7	13.5	7.02	0.873	ms/cm	85.7	0.52	53.70		
16:53	14.7	13.5	7.01	0.873	ms/cm	75.0	0.47	50.20		
16:56	14.7	13.5	7.01	0.872	ms/cm	66.0	0.44	43.86		
16:59	14.7	13.5	7.01	0.872	ms/cm	54.5	0.39	39.90		
17:02	14.7	13.5	7.01	0.871	ms/cm	46.1	0.36	38.70		
17:05	14.7	13.5	7.00	0.872	ms/cm	40.0	0.37	34.55		
17:08	14.7	13.5	7.00	0.874	ms/cm	36.6	0.39	32.62		
17:11	14.7	13.5	7.00	0.875	ms/cm	35.0	0.43	31.72		

All measurements to Nearest Hundredth of a Foot (0.01 feet).
Vol=pi(r)2*h
1 liter = .264 gallons
1 liter = 61.02 inches
1 gallon = 231 inches
1 inch = 2.54 cm

Well diameter gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: 2170 Hemlock Dr. ROW **SAMPLE:** W-108-20

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF/JMH **Weather:** Sunny 60°F **Date:** 10/10/24

Sampling Equipment: peristaltic pump

Previous Water Level (ft.): 9.48 **Initial Depth to Water (ft.):** 10.01

Total Depth of Well (ft.): 41.42 **Time Sampled:** 14:15

Water Volume in Well (gal.): **Purge Volume Prior to Sampling (gal.):**

Disposal Method for Purged Water: Sanitary Sewer

Parameters: 1,4-dioxane

Comments: Pumping rate @ 100 mL/min. Water clear.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/4/24										
16:22	9.58	10.80	7.21	0.788	mS/cm	-38.7	-0.80	33.6	0.5	
14:00	10.01	15.1	7.23	0.656	ms/cm	-74.7	1.22	10.56		
14:03	10.01	15.1	7.19	0.658	ms/cm	-85.5	0.54	12.06		
14:06	10.01	15.1	7.17	0.660	ms/cm	-85.8	0.41	13.74		
14:09	10.01	15.1	7.16	0.664	ms/cm	-85.7	0.33	17.04		
14:12	10.01	15.1	7.15	0.663	ms/cm	-86.2	0.29	18.92		

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Vol=pi(r)2*h 1 liter = .264 gallons 1 gallon = 231 inches³
1 liter = 61.02 inches³ 1 inch = 2.54 cm

Well diameter gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: large box, north of retention pond **SAMPLE:** PW-1R-12

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/3.2

Personnel: RMF | JMH **Weather:** sunny, 55°F **Date:** 10/9/24

Sampling Equipment: Dedicated pump system

Previous Water Level (ft.): 35.49 **Initial Depth to Water (ft.):** 23.75

Total Depth of Well (ft.): 38.00 **Time Sampled:** 10:15

Water Volume in Well (gal.): nm **Purge Volume Prior to Sampling (gal.):** 5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: WW: Q - 1,4 dioxane, Ammonia, VC (Jan, July & Oct), A - annual list (April)

GW: SA - VOCs & 1,4 dioxane (April & Oct)

Comments: Water was clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/3/24										
NA	35.49	12.50	6.76	1.511	ms/cm	-6.7	5.94	2.21	5.0	
9:49	23.75	13.5	6.76	1.190		-38	3.91	3.12	2.5	
9:53	24.76	13.2	6.85	1.200		-38.5	6.26	9.46	2.75	
9:56	25.50	13.2	6.78	1.192		-39.5	4.69	2.93	3.5	
9:59	25.55	13.1	6.88	1.204		-43.5	6.52	5.30	3.75	
10:02	25.55	13.2	6.86	1.199		-43.3	5.55	5.41	4.00	
10:05	25.55	13.2	6.85	1.191		-45.1	5.91	2.11	4.25	

1,4-dioxane sample bottle (Eurofins)

pH paper reading:	Did you add aditional preservative to 1,4-dioxane bottle? (circle one) Y / N	If Y (yes), approximate quantity added:

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h 1 liter = .264 gallons 1 liter = 61.02 inches 1 gallon = 231 inches 1 inch = 2.54 cm

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: large box, north of retention pond

SAMPLE: PW-2R-22

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/1.2

Personnel: RMF / JMH **Weather:** 30°F, overcast **Date:** 12/19/24

Sampling Equipment: Dedicated Pump System

Previous Water Level (ft.): 16.90 **Initial Depth to Water (ft.):** 19.56

Total Depth of Well (ft.): 22.00 **Time Sampled:** 11:23

Water Volume in Well (gal.): nm **Purge Volume Prior to Sampling (gal.):** 8.0 gallons

Disposal Method for Purged Water: Sanitary Sewer

Parameters: GW: SA - VOCs & 1,4 dioxane (April & Oct)

Comments: Water clear.

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/3/24										
11:42	16.90	11.60	7.05	1.145	mS/cm	-16	6.18	1.67	5.0	
11:01	19.56	56.5	8.12	2,105	mS/cm	202.1	81.1	78.51	0	water started brown but cleared up quickly
11:04	19.32	55.6	7.44	2052	mS/cm	185.7	86.6	110.12	2.0	
11:07	19.32	55.4	7.07	2050		184.2	81.15	134.4	3.0	
11:10	19.30	56.0	6.87	2060		183.6	79.4	133.4	4.0	
11:13	19.32	55.8	6.77	2082		180.1	79.3	5.75	5.0	
11:16	19.32	56.3	6.76	2086		178.1	80.5	6.01	6.5	
11:19	19.32	56.1	6.76	2083	↓	176.2	81.3	6.78	8.0	

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter/gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h

1 liter = .264 gallons
1 liter = 61.02 inches

1 gallon = 231 inches
1 inch = 2.54 cm

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: large box, north of retention pond **SAMPLE:** PW-3R-12

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/3.2

Personnel: RMF / JMH **Weather:** sunny, 40°F **Date:** 10/9/24

Sampling Equipment: Dedicated pump system

Previous Water Level (ft.): 28.32 **Initial Depth to Water (ft.):** 28.43

Total Depth of Well (ft.): 36.00 **Time Sampled:** 12:45

Water Volume in Well (gal.): nm **Purge Volume Prior to Sampling (gal.):** 5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: WW: Q - 1,4-dioxane, Ammonia, VC (Jan, July & Oct), A - annual list (Apr)

GW: SA - VOCs & 1,4 dioxane (April & Oct)

Comments: Water clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/3/24										
9:50	28.32	12.50	6.89	1.804	mS/cm	7.2	6.46	1.21	5.0	
11:35	28.43	16.1	6.80	1.817		-61.0	4.32	2.72	0.25	
11:38	28.43	15.3	6.79	1.747		-49.5	3.71	1.30	0.5	
11:41	28.43	15.5	6.76	1.764		-39.2	3.10	1.48	0.75	
11:44		16.3	6.78	1.799		-36.4	3.36	1.40	1	
11:47		16.0	6.78	1.759	mS/cm	-35.9	3.33	1.26	1.25	

1,4-dioxane sample bottle (Eurofins)

pH paper reading:	Did you add aditional preservative to 1,4-dioxane bottle? (circle one) Y / N	If Y (yes), approximate quantity added:

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Vol=pi(r)2*h 1 liter = .264 gallons 1 gallon = 231 inches³
1 liter = 61.02 inches³ 1 inch = 2.54 cm

Well diameter gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

APPENDIX B

Laboratory Analytical Report – Eurofins

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Alison Rauss
Tetra Tech GEO
1136 Oak Valley Dr.
Suite 100
Ann Arbor, Michigan 48108

Generated 10/25/2024 2:48:57 AM

JOB DESCRIPTION

Ann Arbor Landfill Semi-Annual GW

JOB NUMBER

240-212956-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
10/25/2024 2:48:57 AM

Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Method Summary 7
Sample Summary 8
Detection Summary 9
Client Sample Results 11
Surrogate Summary 33
QC Sample Results 34
QC Association Summary 50
Lab Chronicle 52
Certification Summary 55
Chain of Custody 56
Receipt Checklists 65

Definitions/Glossary

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job Narrative
240-212956-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/12/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C.

Receipt Exceptions
The following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): W-108-20 (240-212956-15)

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-631582 was outside the method criteria for the following analyte(s): 1,2,3-Trichlorobenzene, 2-Methylnaphthalene and Chlorobromomethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The following sample(s) was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The samples were analyzed outside the 7-day holding time specified for unpreserved samples but within the 14-day holding time specified for preserved samples: W-89-92 (240-212956-12) and FIELD BLANK (240-212956-13).

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-631732 was outside the method criteria for the following analyte(s): 1,2,3-Trichlorobenzene, 2-Methylnaphthalene, Acrylonitrile and trans-1,4-Dichloro-2-butene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The following sample(s) was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed outside the 7-day holding time specified for unpreserved samples but within the 14-day holding time specified for preserved samples: W-92-92 (240-212959-7).

Method 8260D: The laboratory control sample (LCS) analyzed in batch 240-631732 was below the recovery control criteria for the following analyte(s): 2-Methylnaphthalene . This variance only affects results measured above the reporting limit. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. This demonstrates the analyte reporting limit is valid, and it is acceptable to report ND results (non-detects). The samples associated with the LCS were non-detects for the affected analytes; therefore, the results were reported. The following samples are impacted: W-92-92 (240-212959-7), W-90-92 (240-212959-10) and W-99-93 (240-212959-11).
W-92-92 (240-212959-7), W-90-92 (240-212959-10) and W-99-93 (240-212959-11)

Method 8260D: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for analytical batch 240-631714 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-631714 was outside the method criteria for the following analyte(s): 2-Methylnaphthalene, Bromomethane, Iodomethane and trans-1,4-Dichloro-2-butene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Job ID: 240-212956-1 (Continued) Eurofins Cleveland

Method 8260D: The following sample(s) was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed outside the 7-day holding time specified for unpreserved samples but within the 14-day holding time specified for preserved samples: PW-3R-12 (240-212959-3).

Method 8260D: The following sample(s) was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed outside the 7-day holding time specified for unpreserved samples but within the 14-day holding time specified for preserved samples: PW-1R-12 (240-212959-2).

Method 8260D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 240-632088 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. MS/MSD not reported due to matrix interference.

Method 8260D: The batch will not be reported with MS/MSD due to parent sample needing re analyzed due to internal standard and surrogate recovery exceeded control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 522: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 200-209802.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CLE
522	1,4 Dioxane (GC/MS SIM)	EPA	EET BUR
5030C	Purge and Trap	SW846	EET CLE
522	Solid-Phase Extraction (SPE)	EPA	EET BUR

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET BUR = Eurofins Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-212956-12	W-89-92	Water	10/10/24 17:35	10/12/24 08:00
240-212956-13	FIELD BLANK	Water	10/10/24 00:00	10/12/24 08:00
240-212956-14	W-85-92	Water	10/11/24 10:10	10/12/24 08:00
240-212959-1	W-105-20	Water	10/08/24 15:55	10/12/24 08:00
240-212959-2	PW-1R-12	Water	10/09/24 10:15	10/12/24 08:00
240-212959-3	PW-3R-12	Water	10/09/24 12:45	10/12/24 08:00
240-212959-4	W-106-20	Water	10/09/24 16:15	10/12/24 08:00
240-212959-5	W-107-20	Water	10/09/24 17:15	10/12/24 08:00
240-212959-6	W-68-90	Water	10/10/24 10:45	10/12/24 08:00
240-212959-7	W-92-92	Water	10/10/24 11:55	10/12/24 08:00
240-212959-8	W-108-20	Water	10/10/24 14:55	10/12/24 08:00
240-212959-9	W-48-89	Water	10/10/24 15:10	10/12/24 08:00
240-212959-10	W-90-92	Water	10/10/24 16:15	10/12/24 08:00
240-212959-11	W-99-93	Water	10/10/24 17:00	10/12/24 08:00

Detection Summary

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-89-92 — Lab Sample ID: 240-212956-12

No Detections.

Client Sample ID: FIELD BLANK — Lab Sample ID: 240-212956-13

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	14		10		ug/L	1		8260D	Total/NA

Client Sample ID: W-85-92 — Lab Sample ID: 240-212956-14

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	65		4.0		ug/L	4		8260D	Total/NA
trans-1,2-Dichloroethene	6.3		4.0		ug/L	4		8260D	Total/NA
Trichloroethene	6.4		4.0		ug/L	4		8260D	Total/NA

Client Sample ID: W-105-20 — Lab Sample ID: 240-212959-1

No Detections.

Client Sample ID: PW-1R-12 — Lab Sample ID: 240-212959-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Ethyl ether	6.5		1.0		ug/L	1		8260D	Total/NA
1,4-Dioxane	230		4.0		ug/L	20		522	Total/NA

Client Sample ID: PW-3R-12 — Lab Sample ID: 240-212959-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	7.9		1.0		ug/L	1		8260D	Total/NA
Ethyl ether	8.2		1.0		ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	2.1		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride	34		1.0		ug/L	1		8260D	Total/NA
1,4-Dioxane	220		4.0		ug/L	20		522	Total/NA

Client Sample ID: W-106-20 — Lab Sample ID: 240-212959-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.9		0.20		ug/L	1		522	Total/NA

Client Sample ID: W-107-20 — Lab Sample ID: 240-212959-5

No Detections.

Client Sample ID: W-68-90 — Lab Sample ID: 240-212959-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	13		0.20		ug/L	1		522	Total/NA

Client Sample ID: W-92-92 — Lab Sample ID: 240-212959-7

No Detections.

Client Sample ID: W-108-20 — Lab Sample ID: 240-212959-8

No Detections.

Client Sample ID: W-48-89 — Lab Sample ID: 240-212959-9

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	67		1.0		ug/L	5		522	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cleveland

Detection Summary

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-90-92 **Lab Sample ID: 240-212959-10**

No Detections.

Client Sample ID: W-99-93 **Lab Sample ID: 240-212959-11**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-212956-1

Client Sample ID: W-89-92
Date Collected: 10/10/24 17:35
Date Received: 10/12/24 08:00

Lab Sample ID: 240-212956-12
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/21/24 17:56	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/21/24 17:56	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/21/24 17:56	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/21/24 17:56	1
1,1-Dichloroethane	ND		1.0		ug/L			10/21/24 17:56	1
1,1-Dichloroethene	ND		1.0		ug/L			10/21/24 17:56	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/21/24 17:56	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/21/24 17:56	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/21/24 17:56	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/21/24 17:56	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/21/24 17:56	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/21/24 17:56	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/21/24 17:56	1
1,2-Dichloroethane	ND		1.0		ug/L			10/21/24 17:56	1
1,2-Dichloropropane	ND		1.0		ug/L			10/21/24 17:56	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/21/24 17:56	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/21/24 17:56	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/21/24 17:56	1
2-Hexanone	ND		10		ug/L			10/21/24 17:56	1
2-Methylnaphthalene	ND		5.0		ug/L			10/21/24 17:56	1
Chlorobromomethane	ND		1.0		ug/L			10/21/24 17:56	1
Acetone	ND		10		ug/L			10/21/24 17:56	1
Acrylonitrile	ND		20		ug/L			10/21/24 17:56	1
Benzene	ND		1.0		ug/L			10/21/24 17:56	1
Bromoform	ND		1.0		ug/L			10/21/24 17:56	1
Bromomethane	ND		1.0		ug/L			10/21/24 17:56	1
Carbon disulfide	ND		5.0		ug/L			10/21/24 17:56	1
Carbon tetrachloride	ND		1.0		ug/L			10/21/24 17:56	1
Chlorobenzene	ND		1.0		ug/L			10/21/24 17:56	1
Chloroethane	ND		1.0		ug/L			10/21/24 17:56	1
Chloroform	ND		1.0		ug/L			10/21/24 17:56	1
Chloromethane	ND		1.0		ug/L			10/21/24 17:56	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/21/24 17:56	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/21/24 17:56	1
Dibromomethane	ND		1.0		ug/L			10/21/24 17:56	1
Dichlorobromomethane	ND		1.0		ug/L			10/21/24 17:56	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/21/24 17:56	1
Ethyl ether	ND		1.0		ug/L			10/21/24 17:56	1
Ethylbenzene	ND		1.0		ug/L			10/21/24 17:56	1
1,2-Dibromoethane	ND		1.0		ug/L			10/21/24 17:56	1
Iodomethane	ND		1.0		ug/L			10/21/24 17:56	1
Naphthalene	ND		1.0		ug/L			10/21/24 17:56	1
n-Butylbenzene	ND		1.0		ug/L			10/21/24 17:56	1
Isopropylbenzene	ND		1.0		ug/L			10/21/24 17:56	1
N-Propylbenzene	ND		1.0		ug/L			10/21/24 17:56	1
2-Butanone (MEK)	ND		10		ug/L			10/21/24 17:56	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/21/24 17:56	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/21/24 17:56	1
Methylene Chloride	ND		5.0		ug/L			10/21/24 17:56	1

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-89-92
Lab Sample ID: 240-212956-12
Date Collected: 10/10/24 17:35
Matrix: Water
Date Received: 10/12/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/21/24 17:56	1
Tetrachloroethene	ND		1.0		ug/L			10/21/24 17:56	1
Toluene	ND		1.0		ug/L			10/21/24 17:56	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/21/24 17:56	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/21/24 17:56	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/21/24 17:56	1
Trichloroethene	ND		1.0		ug/L			10/21/24 17:56	1
Trichlorofluoromethane	ND		1.0		ug/L			10/21/24 17:56	1
Vinyl chloride	ND		1.0		ug/L			10/21/24 17:56	1
Xylenes, Total	ND		2.0		ug/L			10/21/24 17:56	1
Chlorodibromomethane	ND		1.0		ug/L			10/21/24 17:56	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/21/24 17:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*62 - 137*		*10/21/24 17:56*	*1*
4-Bromofluorobenzene (Surr)	*89*		*56 - 136*		*10/21/24 17:56*	*1*
Toluene-d8 (Surr)	*97*		*78 - 122*		*10/21/24 17:56*	*1*
Dibromofluoromethane (Surr)	*99*		*73 - 120*		*10/21/24 17:56*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-212956-1

Client Sample ID: FIELD BLANK
Date Collected: 10/10/24 00:00
Date Received: 10/12/24 08:00

Lab Sample ID: 240-212956-13
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/21/24 14:56	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/21/24 14:56	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/21/24 14:56	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/21/24 14:56	1
1,1-Dichloroethane	ND		1.0		ug/L			10/21/24 14:56	1
1,1-Dichloroethene	ND		1.0		ug/L			10/21/24 14:56	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/21/24 14:56	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/21/24 14:56	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/21/24 14:56	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/21/24 14:56	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/21/24 14:56	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/21/24 14:56	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/21/24 14:56	1
1,2-Dichloroethane	ND		1.0		ug/L			10/21/24 14:56	1
1,2-Dichloropropane	ND		1.0		ug/L			10/21/24 14:56	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/21/24 14:56	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/21/24 14:56	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/21/24 14:56	1
2-Hexanone	ND		10		ug/L			10/21/24 14:56	1
2-Methylnaphthalene	ND		5.0		ug/L			10/21/24 14:56	1
Chlorobromomethane	ND		1.0		ug/L			10/21/24 14:56	1
Acetone	**14**		10		ug/L			10/21/24 14:56	1
Acrylonitrile	ND		20		ug/L			10/21/24 14:56	1
Benzene	ND		1.0		ug/L			10/21/24 14:56	1
Bromoform	ND		1.0		ug/L			10/21/24 14:56	1
Bromomethane	ND		1.0		ug/L			10/21/24 14:56	1
Carbon disulfide	ND		5.0		ug/L			10/21/24 14:56	1
Carbon tetrachloride	ND		1.0		ug/L			10/21/24 14:56	1
Chlorobenzene	ND		1.0		ug/L			10/21/24 14:56	1
Chloroethane	ND		1.0		ug/L			10/21/24 14:56	1
Chloroform	ND		1.0		ug/L			10/21/24 14:56	1
Chloromethane	ND		1.0		ug/L			10/21/24 14:56	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/21/24 14:56	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/21/24 14:56	1
Dibromomethane	ND		1.0		ug/L			10/21/24 14:56	1
Dichlorobromomethane	ND		1.0		ug/L			10/21/24 14:56	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/21/24 14:56	1
Ethyl ether	ND		1.0		ug/L			10/21/24 14:56	1
Ethylbenzene	ND		1.0		ug/L			10/21/24 14:56	1
1,2-Dibromoethane	ND		1.0		ug/L			10/21/24 14:56	1
Iodomethane	ND		1.0		ug/L			10/21/24 14:56	1
Naphthalene	ND		1.0		ug/L			10/21/24 14:56	1
n-Butylbenzene	ND		1.0		ug/L			10/21/24 14:56	1
Isopropylbenzene	ND		1.0		ug/L			10/21/24 14:56	1
N-Propylbenzene	ND		1.0		ug/L			10/21/24 14:56	1
2-Butanone (MEK)	ND		10		ug/L			10/21/24 14:56	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/21/24 14:56	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/21/24 14:56	1
Methylene Chloride	ND		5.0		ug/L			10/21/24 14:56	1

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: FIELD BLANK
Lab Sample ID: 240-212956-13
Date Collected: 10/10/24 00:00
Matrix: Water
Date Received: 10/12/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/21/24 14:56	1
Tetrachloroethene	ND		1.0		ug/L			10/21/24 14:56	1
Toluene	ND		1.0		ug/L			10/21/24 14:56	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/21/24 14:56	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/21/24 14:56	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/21/24 14:56	1
Trichloroethene	ND		1.0		ug/L			10/21/24 14:56	1
Trichlorofluoromethane	ND		1.0		ug/L			10/21/24 14:56	1
Vinyl chloride	ND		1.0		ug/L			10/21/24 14:56	1
Xylenes, Total	ND		2.0		ug/L			10/21/24 14:56	1
Chlorodibromomethane	ND		1.0		ug/L			10/21/24 14:56	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/21/24 14:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*62 - 137*		*10/21/24 14:56*	*1*
4-Bromofluorobenzene (Surr)	*96*		*56 - 136*		*10/21/24 14:56*	*1*
Toluene-d8 (Surr)	*101*		*78 - 122*		*10/21/24 14:56*	*1*
Dibromofluoromethane (Surr)	*96*		*73 - 120*		*10/21/24 14:56*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-212956-1

Client Sample ID: W-85-92
Date Collected: 10/11/24 10:10
Date Received: 10/12/24 08:00

Lab Sample ID: 240-212956-14
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		4.0		ug/L			10/21/24 18:22	4
1,1,1-Trichloroethane	ND		4.0		ug/L			10/21/24 18:22	4
1,1,2,2-Tetrachloroethane	ND		4.0		ug/L			10/21/24 18:22	4
1,1,2-Trichloroethane	ND		4.0		ug/L			10/21/24 18:22	4
1,1-Dichloroethane	ND		4.0		ug/L			10/21/24 18:22	4
1,1-Dichloroethene	ND		4.0		ug/L			10/21/24 18:22	4
1,2,3-Trichlorobenzene	ND		4.0		ug/L			10/21/24 18:22	4
1,2,3-Trichloropropane	ND		4.0		ug/L			10/21/24 18:22	4
1,2,3-Trimethylbenzene	ND		20		ug/L			10/21/24 18:22	4
1,2,4-Trichlorobenzene	ND		4.0		ug/L			10/21/24 18:22	4
1,2,4-Trimethylbenzene	ND		4.0		ug/L			10/21/24 18:22	4
1,2-Dibromo-3-Chloropropane	ND		4.0		ug/L			10/21/24 18:22	4
1,2-Dichlorobenzene	ND		4.0		ug/L			10/21/24 18:22	4
1,2-Dichloroethane	ND		4.0		ug/L			10/21/24 18:22	4
1,2-Dichloropropane	ND		4.0		ug/L			10/21/24 18:22	4
1,3,5-Trimethylbenzene	ND		4.0		ug/L			10/21/24 18:22	4
1,3-Dichlorobenzene	ND		4.0		ug/L			10/21/24 18:22	4
1,4-Dichlorobenzene	ND		4.0		ug/L			10/21/24 18:22	4
2-Hexanone	ND		40		ug/L			10/21/24 18:22	4
2-Methylnaphthalene	ND		20		ug/L			10/21/24 18:22	4
Chlorobromomethane	ND		4.0		ug/L			10/21/24 18:22	4
Acetone	ND		40		ug/L			10/21/24 18:22	4
Acrylonitrile	ND		80		ug/L			10/21/24 18:22	4
Benzene	ND		4.0		ug/L			10/21/24 18:22	4
Bromoform	ND		4.0		ug/L			10/21/24 18:22	4
Bromomethane	ND		4.0		ug/L			10/21/24 18:22	4
Carbon disulfide	ND		20		ug/L			10/21/24 18:22	4
Carbon tetrachloride	ND		4.0		ug/L			10/21/24 18:22	4
Chlorobenzene	ND		4.0		ug/L			10/21/24 18:22	4
Chloroethane	ND		4.0		ug/L			10/21/24 18:22	4
Chloroform	ND		4.0		ug/L			10/21/24 18:22	4
Chloromethane	ND		4.0		ug/L			10/21/24 18:22	4
cis-1,2-Dichloroethene	**65**		4.0		ug/L			10/21/24 18:22	4
cis-1,3-Dichloropropene	ND		4.0		ug/L			10/21/24 18:22	4
Dibromomethane	ND		4.0		ug/L			10/21/24 18:22	4
Dichlorobromomethane	ND		4.0		ug/L			10/21/24 18:22	4
Dichlorodifluoromethane	ND		4.0		ug/L			10/21/24 18:22	4
Ethyl ether	ND		4.0		ug/L			10/21/24 18:22	4
Ethylbenzene	ND		4.0		ug/L			10/21/24 18:22	4
1,2-Dibromoethane	ND		4.0		ug/L			10/21/24 18:22	4
Iodomethane	ND		4.0		ug/L			10/21/24 18:22	4
Naphthalene	ND		4.0		ug/L			10/21/24 18:22	4
n-Butylbenzene	ND		4.0		ug/L			10/21/24 18:22	4
Isopropylbenzene	ND		4.0		ug/L			10/21/24 18:22	4
N-Propylbenzene	ND		4.0		ug/L			10/21/24 18:22	4
2-Butanone (MEK)	ND		40		ug/L			10/21/24 18:22	4
4-Methyl-2-pentanone (MIBK)	ND		40		ug/L			10/21/24 18:22	4
Methyl tert-butyl ether	ND		4.0		ug/L			10/21/24 18:22	4
Methylene Chloride	ND		20		ug/L			10/21/24 18:22	4

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-85-92
Lab Sample ID: 240-212956-14
Date Collected: 10/11/24 10:10
Matrix: Water
Date Received: 10/12/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		4.0		ug/L			10/21/24 18:22	4
Tetrachloroethene	ND		4.0		ug/L			10/21/24 18:22	4
Toluene	ND		4.0		ug/L			10/21/24 18:22	4
trans-1,2-Dichloroethene	**6.3**		4.0		ug/L			10/21/24 18:22	4
trans-1,3-Dichloropropene	ND		4.0		ug/L			10/21/24 18:22	4
trans-1,4-Dichloro-2-butene	ND		10		ug/L			10/21/24 18:22	4
Trichloroethene	**6.4**		4.0		ug/L			10/21/24 18:22	4
Trichlorofluoromethane	ND		4.0		ug/L			10/21/24 18:22	4
Vinyl chloride	ND		4.0		ug/L			10/21/24 18:22	4
Xylenes, Total	ND		8.0		ug/L			10/21/24 18:22	4
Chlorodibromomethane	ND		4.0		ug/L			10/21/24 18:22	4

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/21/24 18:22*	*4*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*62 - 137*		*10/21/24 18:22*	*4*
4-Bromofluorobenzene (Surr)	*96*		*56 - 136*		*10/21/24 18:22*	*4*
Toluene-d8 (Surr)	*102*		*78 - 122*		*10/21/24 18:22*	*4*
Dibromofluoromethane (Surr)	*98*		*73 - 120*		*10/21/24 18:22*	*4*

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-105-20
Lab Sample ID: 240-212959-1
Date Collected: 10/08/24 15:55
Matrix: Water
Date Received: 10/12/24 08:00

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/17/24 11:00	10/18/24 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*96*		*46 - 130*	*10/17/24 11:00*	*10/18/24 15:25*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-212956-1

Client Sample ID: PW-1R-12
Date Collected: 10/09/24 10:15
Date Received: 10/12/24 08:00

Lab Sample ID: 240-212959-2
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 03:35	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/22/24 03:35	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 03:35	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/22/24 03:35	1
1,1-Dichloroethane	ND		1.0		ug/L			10/22/24 03:35	1
1,1-Dichloroethene	ND		1.0		ug/L			10/22/24 03:35	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/22/24 03:35	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/22/24 03:35	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/22/24 03:35	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/22/24 03:35	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/22/24 03:35	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/22/24 03:35	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/22/24 03:35	1
1,2-Dichloroethane	ND		1.0		ug/L			10/22/24 03:35	1
1,2-Dichloropropane	ND		1.0		ug/L			10/22/24 03:35	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/22/24 03:35	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/22/24 03:35	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/22/24 03:35	1
2-Hexanone	ND		10		ug/L			10/22/24 03:35	1
2-Methylnaphthalene	ND		5.0		ug/L			10/22/24 03:35	1
Chlorobromomethane	ND		1.0		ug/L			10/22/24 03:35	1
Acetone	ND		10		ug/L			10/22/24 03:35	1
Acrylonitrile	ND		20		ug/L			10/22/24 03:35	1
Benzene	ND		1.0		ug/L			10/22/24 03:35	1
Bromoform	ND		1.0		ug/L			10/22/24 03:35	1
Bromomethane	ND		1.0		ug/L			10/22/24 03:35	1
Carbon disulfide	ND		5.0		ug/L			10/22/24 03:35	1
Carbon tetrachloride	ND		1.0		ug/L			10/22/24 03:35	1
Chlorobenzene	ND		1.0		ug/L			10/22/24 03:35	1
Chloroethane	ND		1.0		ug/L			10/22/24 03:35	1
Chloroform	ND		1.0		ug/L			10/22/24 03:35	1
Chloromethane	ND		1.0		ug/L			10/22/24 03:35	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 03:35	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 03:35	1
Dibromomethane	ND		1.0		ug/L			10/22/24 03:35	1
Dichlorobromomethane	ND		1.0		ug/L			10/22/24 03:35	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/22/24 03:35	1
Ethyl ether	**6.5**		1.0		ug/L			10/23/24 14:18	1
Ethylbenzene	ND		1.0		ug/L			10/22/24 03:35	1
1,2-Dibromoethane	ND		1.0		ug/L			10/22/24 03:35	1
Iodomethane	ND		1.0		ug/L			10/22/24 03:35	1
Naphthalene	ND		1.0		ug/L			10/22/24 03:35	1
n-Butylbenzene	ND		1.0		ug/L			10/22/24 03:35	1
Isopropylbenzene	ND		1.0		ug/L			10/22/24 03:35	1
N-Propylbenzene	ND		1.0		ug/L			10/22/24 03:35	1
2-Butanone (MEK)	ND		10		ug/L			10/22/24 03:35	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/22/24 03:35	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/22/24 03:35	1
Methylene Chloride	ND		5.0		ug/L			10/22/24 03:35	1

Client Sample ID: PW-1R-12
Lab Sample ID: 240-212959-2
Date Collected: 10/09/24 10:15
Matrix: Water
Date Received: 10/12/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/22/24 03:35	1
Tetrachloroethene	ND		1.0		ug/L			10/22/24 03:35	1
Toluene	ND		1.0		ug/L			10/22/24 03:35	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 03:35	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 03:35	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/22/24 03:35	1
Trichloroethene	ND		1.0		ug/L			10/22/24 03:35	1
Trichlorofluoromethane	ND		1.0		ug/L			10/22/24 03:35	1
Vinyl chloride	ND		1.0		ug/L			10/22/24 03:35	1
Xylenes, Total	ND		2.0		ug/L			10/22/24 03:35	1
Chlorodibromomethane	ND		1.0		ug/L			10/22/24 03:35	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/22/24 03:35*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*62 - 137*		*10/22/24 03:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*62 - 137*		*10/23/24 14:18*	*1*
4-Bromofluorobenzene (Surr)	*85*		*56 - 136*		*10/22/24 03:35*	*1*
4-Bromofluorobenzene (Surr)	*88*		*56 - 136*		*10/23/24 14:18*	*1*
Toluene-d8 (Surr)	*93*		*78 - 122*		*10/22/24 03:35*	*1*
Toluene-d8 (Surr)	*98*		*78 - 122*		*10/23/24 14:18*	*1*
Dibromofluoromethane (Surr)	*115*		*73 - 120*		*10/22/24 03:35*	*1*
Dibromofluoromethane (Surr)	*114*		*73 - 120*		*10/23/24 14:18*	*1*

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**230**		4.0		ug/L		10/17/24 11:00	10/21/24 17:36	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*107*		*46 - 130*	*10/17/24 11:00*	*10/21/24 17:36*	*20*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-212956-1

Client Sample ID: PW-3R-12
Date Collected: 10/09/24 12:45
Date Received: 10/12/24 08:00

Lab Sample ID: 240-212959-3
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 03:55	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/22/24 03:55	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 03:55	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/22/24 03:55	1
1,1-Dichloroethane	ND		1.0		ug/L			10/22/24 03:55	1
1,1-Dichloroethene	ND		1.0		ug/L			10/22/24 03:55	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/22/24 03:55	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/22/24 03:55	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/22/24 03:55	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/22/24 03:55	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/22/24 03:55	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/22/24 03:55	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/22/24 03:55	1
1,2-Dichloroethane	ND		1.0		ug/L			10/22/24 03:55	1
1,2-Dichloropropane	ND		1.0		ug/L			10/22/24 03:55	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/22/24 03:55	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/22/24 03:55	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/22/24 03:55	1
2-Hexanone	ND		10		ug/L			10/22/24 03:55	1
2-Methylnaphthalene	ND		5.0		ug/L			10/22/24 03:55	1
Chlorobromomethane	ND		1.0		ug/L			10/22/24 03:55	1
Acetone	ND		10		ug/L			10/22/24 03:55	1
Acrylonitrile	ND		20		ug/L			10/22/24 03:55	1
Benzene	ND		1.0		ug/L			10/22/24 03:55	1
Bromoform	ND		1.0		ug/L			10/22/24 03:55	1
Bromomethane	ND		1.0		ug/L			10/22/24 03:55	1
Carbon disulfide	ND		5.0		ug/L			10/22/24 03:55	1
Carbon tetrachloride	ND		1.0		ug/L			10/22/24 03:55	1
Chlorobenzene	ND		1.0		ug/L			10/22/24 03:55	1
Chloroethane	ND		1.0		ug/L			10/22/24 03:55	1
Chloroform	ND		1.0		ug/L			10/22/24 03:55	1
Chloromethane	ND		1.0		ug/L			10/22/24 03:55	1
cis-1,2-Dichloroethene	**7.9**		1.0		ug/L			10/22/24 03:55	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 03:55	1
Dibromomethane	ND		1.0		ug/L			10/22/24 03:55	1
Dichlorobromomethane	ND		1.0		ug/L			10/22/24 03:55	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/22/24 03:55	1
Ethyl ether	**8.2**		1.0		ug/L			10/22/24 16:56	1
Ethylbenzene	ND		1.0		ug/L			10/22/24 03:55	1
1,2-Dibromoethane	ND		1.0		ug/L			10/22/24 03:55	1
Iodomethane	ND		1.0		ug/L			10/22/24 03:55	1
Naphthalene	ND		1.0		ug/L			10/22/24 03:55	1
n-Butylbenzene	ND		1.0		ug/L			10/22/24 03:55	1
Isopropylbenzene	ND		1.0		ug/L			10/22/24 03:55	1
N-Propylbenzene	ND		1.0		ug/L			10/22/24 03:55	1
2-Butanone (MEK)	ND		10		ug/L			10/22/24 03:55	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/22/24 03:55	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/22/24 03:55	1
Methylene Chloride	ND		5.0		ug/L			10/22/24 03:55	1

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-212956-1

Client Sample ID: PW-3R-12

Date Collected: 10/09/24 12:45
Date Received: 10/12/24 08:00

Lab Sample ID: 240-212959-3

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/22/24 03:55	1
Tetrachloroethene	ND		1.0		ug/L			10/22/24 03:55	1
Toluene	ND		1.0		ug/L			10/22/24 03:55	1
trans-1,2-Dichloroethene	**2.1**		1.0		ug/L			10/22/24 03:55	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 03:55	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/22/24 03:55	1
Trichloroethene	ND		1.0		ug/L			10/22/24 03:55	1
Trichlorofluoromethane	ND		1.0		ug/L			10/22/24 03:55	1
Vinyl chloride	**34**		1.0		ug/L			10/22/24 03:55	1
Xylenes, Total	ND		2.0		ug/L			10/22/24 03:55	1
Chlorodibromomethane	ND		1.0		ug/L			10/22/24 03:55	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/22/24 03:55*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*62 - 137*		*10/22/24 03:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*62 - 137*		*10/22/24 16:56*	*1*
4-Bromofluorobenzene (Surr)	*84*		*56 - 136*		*10/22/24 03:55*	*1*
4-Bromofluorobenzene (Surr)	*79*		*56 - 136*		*10/22/24 16:56*	*1*
Toluene-d8 (Surr)	*98*		*78 - 122*		*10/22/24 03:55*	*1*
Toluene-d8 (Surr)	*96*		*78 - 122*		*10/22/24 16:56*	*1*
Dibromofluoromethane (Surr)	*118*		*73 - 120*		*10/22/24 03:55*	*1*
Dibromofluoromethane (Surr)	*104*		*73 - 120*		*10/22/24 16:56*	*1*

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**220**		4.0		ug/L		10/17/24 11:00	10/21/24 17:49	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*79*		*46 - 130*	*10/17/24 11:00*	*10/21/24 17:49*	*20*

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-106-20
Lab Sample ID: 240-212959-4
Date Collected: 10/09/24 16:15
Matrix: Water
Date Received: 10/12/24 08:00

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.9		0.20		ug/L		10/17/24 11:00	10/18/24 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*85*		*46 - 130*	*10/17/24 11:00*	*10/18/24 16:19*	*1*

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-107-20
Lab Sample ID: 240-212959-5
Date Collected: 10/09/24 17:15
Matrix: Water
Date Received: 10/12/24 08:00

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/17/24 11:00	10/18/24 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*82*		*46 - 130*	*10/17/24 11:00*	*10/18/24 16:33*	*1*

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-68-90
Lab Sample ID: 240-212959-6
Date Collected: 10/10/24 10:45
Matrix: Water
Date Received: 10/12/24 08:00

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	13		0.20		ug/L		10/17/24 11:00	10/18/24 16:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*90*		*46 - 130*	*10/17/24 11:00*	*10/18/24 16:46*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-212956-1

Client Sample ID: W-92-92
Date Collected: 10/10/24 11:55
Date Received: 10/12/24 08:00

Lab Sample ID: 240-212959-7
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 06:43	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/22/24 06:43	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 06:43	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/22/24 06:43	1
1,1-Dichloroethane	ND		1.0		ug/L			10/22/24 06:43	1
1,1-Dichloroethene	ND		1.0		ug/L			10/22/24 06:43	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/22/24 06:43	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/22/24 06:43	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/22/24 06:43	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/22/24 06:43	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/22/24 06:43	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/22/24 06:43	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/22/24 06:43	1
1,2-Dichloroethane	ND		1.0		ug/L			10/22/24 06:43	1
1,2-Dichloropropane	ND		1.0		ug/L			10/22/24 06:43	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/22/24 06:43	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/22/24 06:43	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/22/24 06:43	1
2-Hexanone	ND		10		ug/L			10/22/24 06:43	1
2-Methylnaphthalene	ND	*-	5.0		ug/L			10/22/24 06:43	1
Chlorobromomethane	ND		1.0		ug/L			10/22/24 06:43	1
Acetone	ND		10		ug/L			10/22/24 06:43	1
Acrylonitrile	ND		20		ug/L			10/22/24 06:43	1
Benzene	ND		1.0		ug/L			10/22/24 06:43	1
Bromoform	ND		1.0		ug/L			10/22/24 06:43	1
Bromomethane	ND		1.0		ug/L			10/22/24 06:43	1
Carbon disulfide	ND		5.0		ug/L			10/22/24 06:43	1
Carbon tetrachloride	ND		1.0		ug/L			10/22/24 06:43	1
Chlorobenzene	ND		1.0		ug/L			10/22/24 06:43	1
Chloroethane	ND		1.0		ug/L			10/22/24 06:43	1
Chloroform	ND		1.0		ug/L			10/22/24 06:43	1
Chloromethane	ND		1.0		ug/L			10/22/24 06:43	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 06:43	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 06:43	1
Dibromomethane	ND		1.0		ug/L			10/22/24 06:43	1
Dichlorobromomethane	ND		1.0		ug/L			10/22/24 06:43	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/22/24 06:43	1
Ethyl ether	ND		1.0		ug/L			10/22/24 06:43	1
Ethylbenzene	ND		1.0		ug/L			10/22/24 06:43	1
1,2-Dibromoethane	ND		1.0		ug/L			10/22/24 06:43	1
Iodomethane	ND		1.0		ug/L			10/22/24 06:43	1
Naphthalene	ND		1.0		ug/L			10/22/24 06:43	1
n-Butylbenzene	ND		1.0		ug/L			10/22/24 06:43	1
Isopropylbenzene	ND		1.0		ug/L			10/22/24 06:43	1
N-Propylbenzene	ND		1.0		ug/L			10/22/24 06:43	1
2-Butanone (MEK)	ND		10		ug/L			10/22/24 06:43	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/22/24 06:43	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/22/24 06:43	1
Methylene Chloride	ND		5.0		ug/L			10/22/24 06:43	1

Client Sample ID: W-92-92
Lab Sample ID: 240-212959-7
Date Collected: 10/10/24 11:55
Matrix: Water
Date Received: 10/12/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/22/24 06:43	1
Tetrachloroethene	ND		1.0		ug/L			10/22/24 06:43	1
Toluene	ND		1.0		ug/L			10/22/24 06:43	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 06:43	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 06:43	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/22/24 06:43	1
Trichloroethene	ND		1.0		ug/L			10/22/24 06:43	1
Trichlorofluoromethane	ND		1.0		ug/L			10/22/24 06:43	1
Vinyl chloride	ND		1.0		ug/L			10/22/24 06:43	1
Xylenes, Total	ND		2.0		ug/L			10/22/24 06:43	1
Chlorodibromomethane	ND		1.0		ug/L			10/22/24 06:43	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/22/24 06:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*62 - 137*		*10/22/24 06:43*	*1*
4-Bromofluorobenzene (Surr)	*92*		*56 - 136*		*10/22/24 06:43*	*1*
Toluene-d8 (Surr)	*99*		*78 - 122*		*10/22/24 06:43*	*1*
Dibromofluoromethane (Surr)	*100*		*73 - 120*		*10/22/24 06:43*	*1*

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-108-20
Lab Sample ID: 240-212959-8
Date Collected: 10/10/24 14:55
Matrix: Water
Date Received: 10/12/24 08:00

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/17/24 11:00	10/18/24 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*83*		*46 - 130*	*10/17/24 11:00*	*10/18/24 17:00*	*1*

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-48-89
Lab Sample ID: 240-212959-9
Date Collected: 10/10/24 15:10
Matrix: Water
Date Received: 10/12/24 08:00

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	67		1.0		ug/L		10/17/24 11:00	10/21/24 18:03	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*96*		*46 - 130*	*10/17/24 11:00*	*10/21/24 18:03*	*5*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-212956-1

Client Sample ID: W-90-92
Date Collected: 10/10/24 16:15
Date Received: 10/12/24 08:00

Lab Sample ID: 240-212959-10
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 07:09	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/22/24 07:09	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 07:09	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/22/24 07:09	1
1,1-Dichloroethane	ND		1.0		ug/L			10/22/24 07:09	1
1,1-Dichloroethene	ND		1.0		ug/L			10/22/24 07:09	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/22/24 07:09	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/22/24 07:09	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/22/24 07:09	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/22/24 07:09	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/22/24 07:09	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/22/24 07:09	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/22/24 07:09	1
1,2-Dichloroethane	ND		1.0		ug/L			10/22/24 07:09	1
1,2-Dichloropropane	ND		1.0		ug/L			10/22/24 07:09	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/22/24 07:09	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/22/24 07:09	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/22/24 07:09	1
2-Hexanone	ND		10		ug/L			10/22/24 07:09	1
2-Methylnaphthalene	ND	*-	5.0		ug/L			10/22/24 07:09	1
Chlorobromomethane	ND		1.0		ug/L			10/22/24 07:09	1
Acetone	ND		10		ug/L			10/22/24 07:09	1
Acrylonitrile	ND		20		ug/L			10/22/24 07:09	1
Benzene	ND		1.0		ug/L			10/22/24 07:09	1
Bromoform	ND		1.0		ug/L			10/22/24 07:09	1
Bromomethane	ND		1.0		ug/L			10/22/24 07:09	1
Carbon disulfide	ND		5.0		ug/L			10/22/24 07:09	1
Carbon tetrachloride	ND		1.0		ug/L			10/22/24 07:09	1
Chlorobenzene	ND		1.0		ug/L			10/22/24 07:09	1
Chloroethane	ND		1.0		ug/L			10/22/24 07:09	1
Chloroform	ND		1.0		ug/L			10/22/24 07:09	1
Chloromethane	ND		1.0		ug/L			10/22/24 07:09	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 07:09	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 07:09	1
Dibromomethane	ND		1.0		ug/L			10/22/24 07:09	1
Dichlorobromomethane	ND		1.0		ug/L			10/22/24 07:09	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/22/24 07:09	1
Ethyl ether	ND		1.0		ug/L			10/22/24 07:09	1
Ethylbenzene	ND		1.0		ug/L			10/22/24 07:09	1
1,2-Dibromoethane	ND		1.0		ug/L			10/22/24 07:09	1
Iodomethane	ND		1.0		ug/L			10/22/24 07:09	1
Naphthalene	ND		1.0		ug/L			10/22/24 07:09	1
n-Butylbenzene	ND		1.0		ug/L			10/22/24 07:09	1
Isopropylbenzene	ND		1.0		ug/L			10/22/24 07:09	1
N-Propylbenzene	ND		1.0		ug/L			10/22/24 07:09	1
2-Butanone (MEK)	ND		10		ug/L			10/22/24 07:09	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/22/24 07:09	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/22/24 07:09	1
Methylene Chloride	ND		5.0		ug/L			10/22/24 07:09	1

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-90-92
Lab Sample ID: 240-212959-10
Date Collected: 10/10/24 16:15
Matrix: Water
Date Received: 10/12/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/22/24 07:09	1
Tetrachloroethene	ND		1.0		ug/L			10/22/24 07:09	1
Toluene	ND		1.0		ug/L			10/22/24 07:09	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 07:09	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 07:09	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/22/24 07:09	1
Trichloroethene	ND		1.0		ug/L			10/22/24 07:09	1
Trichlorofluoromethane	ND		1.0		ug/L			10/22/24 07:09	1
Vinyl chloride	ND		1.0		ug/L			10/22/24 07:09	1
Xylenes, Total	ND		2.0		ug/L			10/22/24 07:09	1
Chlorodibromomethane	ND		1.0		ug/L			10/22/24 07:09	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/22/24 07:09*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*		*10/22/24 07:09*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*10/22/24 07:09*	*1*
Toluene-d8 (Surr)	*101*		*78 - 122*		*10/22/24 07:09*	*1*
Dibromofluoromethane (Surr)	*100*		*73 - 120*		*10/22/24 07:09*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-212956-1

Client Sample ID: W-99-93
Date Collected: 10/10/24 17:00
Date Received: 10/12/24 08:00

Lab Sample ID: 240-212959-11
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 07:35	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/22/24 07:35	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 07:35	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/22/24 07:35	1
1,1-Dichloroethane	ND		1.0		ug/L			10/22/24 07:35	1
1,1-Dichloroethene	ND		1.0		ug/L			10/22/24 07:35	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/22/24 07:35	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/22/24 07:35	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/22/24 07:35	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/22/24 07:35	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/22/24 07:35	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/22/24 07:35	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/22/24 07:35	1
1,2-Dichloroethane	ND		1.0		ug/L			10/22/24 07:35	1
1,2-Dichloropropane	ND		1.0		ug/L			10/22/24 07:35	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/22/24 07:35	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/22/24 07:35	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/22/24 07:35	1
2-Hexanone	ND		10		ug/L			10/22/24 07:35	1
2-Methylnaphthalene	ND	*-	5.0		ug/L			10/22/24 07:35	1
Chlorobromomethane	ND		1.0		ug/L			10/22/24 07:35	1
Acetone	ND		10		ug/L			10/22/24 07:35	1
Acrylonitrile	ND		20		ug/L			10/22/24 07:35	1
Benzene	ND		1.0		ug/L			10/22/24 07:35	1
Bromoform	ND		1.0		ug/L			10/22/24 07:35	1
Bromomethane	ND		1.0		ug/L			10/22/24 07:35	1
Carbon disulfide	ND		5.0		ug/L			10/22/24 07:35	1
Carbon tetrachloride	ND		1.0		ug/L			10/22/24 07:35	1
Chlorobenzene	ND		1.0		ug/L			10/22/24 07:35	1
Chloroethane	ND		1.0		ug/L			10/22/24 07:35	1
Chloroform	ND		1.0		ug/L			10/22/24 07:35	1
Chloromethane	ND		1.0		ug/L			10/22/24 07:35	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 07:35	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 07:35	1
Dibromomethane	ND		1.0		ug/L			10/22/24 07:35	1
Dichlorobromomethane	ND		1.0		ug/L			10/22/24 07:35	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/22/24 07:35	1
Ethyl ether	ND		1.0		ug/L			10/22/24 07:35	1
Ethylbenzene	ND		1.0		ug/L			10/22/24 07:35	1
1,2-Dibromoethane	ND		1.0		ug/L			10/22/24 07:35	1
Iodomethane	ND		1.0		ug/L			10/22/24 07:35	1
Naphthalene	ND		1.0		ug/L			10/22/24 07:35	1
n-Butylbenzene	ND		1.0		ug/L			10/22/24 07:35	1
Isopropylbenzene	ND		1.0		ug/L			10/22/24 07:35	1
N-Propylbenzene	ND		1.0		ug/L			10/22/24 07:35	1
2-Butanone (MEK)	ND		10		ug/L			10/22/24 07:35	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/22/24 07:35	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/22/24 07:35	1
Methylene Chloride	ND		5.0		ug/L			10/22/24 07:35	1

Client Sample ID: W-99-93
Lab Sample ID: 240-212959-11
Date Collected: 10/10/24 17:00
Matrix: Water
Date Received: 10/12/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/22/24 07:35	1
Tetrachloroethene	ND		1.0		ug/L			10/22/24 07:35	1
Toluene	ND		1.0		ug/L			10/22/24 07:35	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 07:35	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 07:35	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/22/24 07:35	1
Trichloroethene	ND		1.0		ug/L			10/22/24 07:35	1
Trichlorofluoromethane	ND		1.0		ug/L			10/22/24 07:35	1
Vinyl chloride	ND		1.0		ug/L			10/22/24 07:35	1
Xylenes, Total	ND		2.0		ug/L			10/22/24 07:35	1
Chlorodibromomethane	ND		1.0		ug/L			10/22/24 07:35	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/22/24 07:35*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*		*10/22/24 07:35*	*1*
4-Bromofluorobenzene (Surr)	*87*		*56 - 136*		*10/22/24 07:35*	*1*
Toluene-d8 (Surr)	*94*		*78 - 122*		*10/22/24 07:35*	*1*
Dibromofluoromethane (Surr)	*99*		*73 - 120*		*10/22/24 07:35*	*1*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-212956-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-212956-12	W-89-92	103	89	97	99
240-212956-13	FIELD BLANK	101	96	101	96
240-212956-14	W-85-92	103	96	102	98
240-212959-2	PW-1R-12	110	85	93	115
240-212959-2	PW-1R-12	109	88	98	114
240-212959-3	PW-3R-12	112	84	98	118
240-212959-3	PW-3R-12	101	79	96	104
240-212959-7	W-92-92	103	92	99	100
240-212959-10	W-90-92	105	94	101	100
240-212959-11	W-99-93	100	87	94	99
LCS 240-631582/5	Lab Control Sample	93	99	102	93
LCS 240-631582/6	Lab Control Sample	89	90	96	91
LCS 240-631714/4	Lab Control Sample	97	96	99	104
LCS 240-631732/3	Lab Control Sample	93	98	104	96
LCS 240-631732/4	Lab Control Sample	92	92	99	94
LCS 240-631833/4	Lab Control Sample	93	91	92	99
LCS 240-631833/5	Lab Control Sample	95	93	91	97
LCS 240-632088/5	Lab Control Sample	99	93	98	101
LCS 240-632088/7	Lab Control Sample	105	98	97	109
MB 240-631582/9	Method Blank	100	89	100	98
MB 240-631714/7	Method Blank	105	89	95	111
MB 240-631732/7	Method Blank	98	90	99	97
MB 240-631833/7	Method Blank	99	81	89	101
MB 240-632088/10	Method Blank	106	87	94	108

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DXE
Lab Sample ID	Client Sample ID	(46-130)
240-212959-1	W-105-20	96
240-212959-2	PW-1R-12	107
240-212959-3	PW-3R-12	79
240-212959-4	W-106-20	85
240-212959-5	W-107-20	82
240-212959-6	W-68-90	90
240-212959-8	W-108-20	83
240-212959-9	W-48-89	96
LCS 200-209802/2-A	Lab Control Sample	88
LCSD 200-209802/3-A	Lab Control Sample Dup	94
MB 200-209802/1-A	Method Blank	90

Surrogate Legend

DXE = 1,4-Dioxane-d8 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-631582/9
Matrix: Water
Analysis Batch: 631582

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/21/24 13:10	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/21/24 13:10	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/21/24 13:10	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/21/24 13:10	1
1,1-Dichloroethane	ND		1.0		ug/L			10/21/24 13:10	1
1,1-Dichloroethene	ND		1.0		ug/L			10/21/24 13:10	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/21/24 13:10	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/21/24 13:10	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/21/24 13:10	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/21/24 13:10	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/21/24 13:10	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/21/24 13:10	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/21/24 13:10	1
1,2-Dichloroethane	ND		1.0		ug/L			10/21/24 13:10	1
1,2-Dichloropropane	ND		1.0		ug/L			10/21/24 13:10	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/21/24 13:10	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/21/24 13:10	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/21/24 13:10	1
2-Hexanone	ND		10		ug/L			10/21/24 13:10	1
2-Methylnaphthalene	ND		5.0		ug/L			10/21/24 13:10	1
Chlorobromomethane	ND		1.0		ug/L			10/21/24 13:10	1
Acetone	ND		10		ug/L			10/21/24 13:10	1
Acrylonitrile	ND		20		ug/L			10/21/24 13:10	1
Benzene	ND		1.0		ug/L			10/21/24 13:10	1
Bromoform	ND		1.0		ug/L			10/21/24 13:10	1
Bromomethane	ND		1.0		ug/L			10/21/24 13:10	1
Carbon disulfide	ND		5.0		ug/L			10/21/24 13:10	1
Carbon tetrachloride	ND		1.0		ug/L			10/21/24 13:10	1
Chlorobenzene	ND		1.0		ug/L			10/21/24 13:10	1
Chloroethane	ND		1.0		ug/L			10/21/24 13:10	1
Chloroform	ND		1.0		ug/L			10/21/24 13:10	1
Chloromethane	ND		1.0		ug/L			10/21/24 13:10	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/21/24 13:10	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/21/24 13:10	1
Dibromomethane	ND		1.0		ug/L			10/21/24 13:10	1
Dichlorobromomethane	ND		1.0		ug/L			10/21/24 13:10	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/21/24 13:10	1
Ethyl ether	ND		1.0		ug/L			10/21/24 13:10	1
Ethylbenzene	ND		1.0		ug/L			10/21/24 13:10	1
1,2-Dibromoethane	ND		1.0		ug/L			10/21/24 13:10	1
Iodomethane	ND		1.0		ug/L			10/21/24 13:10	1
Naphthalene	ND		1.0		ug/L			10/21/24 13:10	1
n-Butylbenzene	ND		1.0		ug/L			10/21/24 13:10	1
Isopropylbenzene	ND		1.0		ug/L			10/21/24 13:10	1
N-Propylbenzene	ND		1.0		ug/L			10/21/24 13:10	1
2-Butanone (MEK)	ND		10		ug/L			10/21/24 13:10	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/21/24 13:10	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/21/24 13:10	1

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

Lab Sample ID: MB 240-631582/9
Matrix: Water
Analysis Batch: 631582

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		5.0		ug/L			10/21/24 13:10	1
Styrene	ND		1.0		ug/L			10/21/24 13:10	1
Tetrachloroethene	ND		1.0		ug/L			10/21/24 13:10	1
Toluene	ND		1.0		ug/L			10/21/24 13:10	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/21/24 13:10	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/21/24 13:10	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/21/24 13:10	1
Trichloroethene	ND		1.0		ug/L			10/21/24 13:10	1
Trichlorofluoromethane	ND		1.0		ug/L			10/21/24 13:10	1
Vinyl chloride	ND		1.0		ug/L			10/21/24 13:10	1
Xylenes, Total	ND		2.0		ug/L			10/21/24 13:10	1
Chlorodibromomethane	ND		1.0		ug/L			10/21/24 13:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*		*10/21/24 13:10*	*1*
4-Bromofluorobenzene (Surr)	*89*		*56 - 136*		*10/21/24 13:10*	*1*
Toluene-d8 (Surr)	*100*		*78 - 122*		*10/21/24 13:10*	*1*
Dibromofluoromethane (Surr)	*98*		*73 - 120*		*10/21/24 13:10*	*1*

Lab Sample ID: LCS 240-631582/5
Matrix: Water
Analysis Batch: 631582

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane			20.0	19.0		ug/L		95	71 - 124		
1,1,1-Trichloroethane			20.0	18.9		ug/L		94	64 - 131		
1,1,2,2-Tetrachloroethane			20.0	18.4		ug/L		92	58 - 157		
1,1,2-Trichloroethane			20.0	19.3		ug/L		97	70 - 138		
1,1-Dichloroethane			20.0	17.8		ug/L		89	72 - 127		
1,1-Dichloroethene			20.0	19.1		ug/L		96	63 - 134		
1,2,3-Trichlorobenzene			20.0	15.8		ug/L		79	45 - 149		
1,2,3-Trichloropropane			20.0	19.7		ug/L		99	57 - 150		
1,2,4-Trichlorobenzene			20.0	16.7		ug/L		84	44 - 147		
1,2,4-Trimethylbenzene			20.0	19.4		ug/L		97	77 - 129		
1,2-Dibromo-3-Chloropropane			20.0	17.8		ug/L		89	53 - 135		
1,2-Dichlorobenzene			20.0	19.1		ug/L		96	78 - 120		
1,2-Dichloroethane			20.0	16.8		ug/L		84	66 - 128		
1,2-Dichloropropane			20.0	17.6		ug/L		88	75 - 133		
1,3,5-Trimethylbenzene			20.0	19.7		ug/L		98	75 - 129		
1,3-Dichlorobenzene			20.0	19.8		ug/L		99	80 - 120		
1,4-Dichlorobenzene			20.0	19.5		ug/L		97	80 - 120		
2-Hexanone			40.0	40.4		ug/L		101	43 - 167		
Chlorobromomethane			20.0	15.6		ug/L		78	71 - 121		
Acetone			40.0	32.0		ug/L		80	50 - 149		
Acrylonitrile			200	167		ug/L		83	51 - 161		
Benzene			20.0	18.4		ug/L		92	77 - 123		
Bromoform			20.0	19.4		ug/L		97	57 - 129		
Bromomethane			20.0	15.0		ug/L		75	36 - 142		

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

Lab Sample ID: LCS 240-631582/5
Matrix: Water
Analysis Batch: 631582

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon disulfide	20.0	20.6		ug/L		103	43 - 140
Carbon tetrachloride	20.0	18.4		ug/L		92	55 - 137
Chlorobenzene	20.0	18.7		ug/L		93	80 - 121
Chloroethane	20.0	15.0		ug/L		75	38 - 152
Chloroform	20.0	17.4		ug/L		87	74 - 122
Chloromethane	20.0	11.2		ug/L		56	47 - 143
cis-1,2-Dichloroethene	20.0	17.7		ug/L		89	77 - 123
cis-1,3-Dichloropropene	20.0	16.3		ug/L		82	64 - 130
Dibromomethane	20.0	18.6		ug/L		93	67 - 131
Dichlorobromomethane	20.0	18.1		ug/L		91	69 - 126
Dichlorodifluoromethane	20.0	10.8		ug/L		54	34 - 153
Ethyl ether	20.0	16.7		ug/L		83	53 - 151
Ethylbenzene	20.0	19.9		ug/L		100	80 - 121
1,2-Dibromoethane	20.0	18.8		ug/L		94	71 - 134
Iodomethane	20.0	20.2		ug/L		101	39 - 136
Naphthalene	20.0	17.3		ug/L		86	53 - 138
n-Butylbenzene	20.0	19.7		ug/L		99	62 - 139
Isopropylbenzene	20.0	22.2		ug/L		111	74 - 128
N-Propylbenzene	20.0	19.4		ug/L		97	76 - 127
2-Butanone (MEK)	40.0	37.0		ug/L		93	54 - 156
4-Methyl-2-pentanone (MIBK)	40.0	33.1		ug/L		83	46 - 158
Methyl tert-butyl ether	20.0	18.3		ug/L		91	65 - 126
Methylene Chloride	20.0	17.2		ug/L		86	71 - 125
Styrene	20.0	20.5		ug/L		102	80 - 135
Tetrachloroethene	20.0	20.6		ug/L		103	76 - 123
Toluene	20.0	19.1		ug/L		96	80 - 123
trans-1,2-Dichloroethene	20.0	18.1		ug/L		90	75 - 124
trans-1,3-Dichloropropene	20.0	19.4		ug/L		97	57 - 129
trans-1,4-Dichloro-2-butene	20.0	16.8		ug/L		84	14 - 173
Trichloroethene	20.0	17.7		ug/L		88	70 - 122
Trichlorofluoromethane	20.0	15.7		ug/L		79	30 - 170
Vinyl chloride	20.0	13.7		ug/L		69	60 - 144
Xylenes, Total	40.0	39.8		ug/L		100	80 - 121
Chlorodibromomethane	20.0	17.9		ug/L		89	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*62 - 137*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*
Toluene-d8 (Surr)	*102*		*78 - 122*
Dibromofluoromethane (Surr)	*93*		*73 - 120*

Lab Sample ID: LCS 240-631582/6
Matrix: Water
Analysis Batch: 631582

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*62 - 137*
4-Bromofluorobenzene (Surr)	*90*		*56 - 136*

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

Lab Sample ID: LCS 240-631582/6
Matrix: Water
Analysis Batch: 631582

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	*96*		*78 - 122*
Dibromofluoromethane (Surr)	*91*		*73 - 120*

Lab Sample ID: MB 240-631714/7
Matrix: Water
Analysis Batch: 631714

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/21/24 22:14	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/21/24 22:14	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/21/24 22:14	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/21/24 22:14	1
1,1-Dichloroethane	ND		1.0		ug/L			10/21/24 22:14	1
1,1-Dichloroethene	ND		1.0		ug/L			10/21/24 22:14	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/21/24 22:14	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/21/24 22:14	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/21/24 22:14	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/21/24 22:14	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/21/24 22:14	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/21/24 22:14	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/21/24 22:14	1
1,2-Dichloroethane	ND		1.0		ug/L			10/21/24 22:14	1
1,2-Dichloropropane	ND		1.0		ug/L			10/21/24 22:14	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/21/24 22:14	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/21/24 22:14	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/21/24 22:14	1
2-Hexanone	ND		10		ug/L			10/21/24 22:14	1
2-Methylnaphthalene	ND		5.0		ug/L			10/21/24 22:14	1
Chlorobromomethane	ND		1.0		ug/L			10/21/24 22:14	1
Acetone	ND		10		ug/L			10/21/24 22:14	1
Acrylonitrile	ND		20		ug/L			10/21/24 22:14	1
Benzene	ND		1.0		ug/L			10/21/24 22:14	1
Bromoform	ND		1.0		ug/L			10/21/24 22:14	1
Bromomethane	ND		1.0		ug/L			10/21/24 22:14	1
Carbon disulfide	ND		5.0		ug/L			10/21/24 22:14	1
Carbon tetrachloride	ND		1.0		ug/L			10/21/24 22:14	1
Chlorobenzene	ND		1.0		ug/L			10/21/24 22:14	1
Chloroethane	ND		1.0		ug/L			10/21/24 22:14	1
Chloroform	ND		1.0		ug/L			10/21/24 22:14	1
Chloromethane	ND		1.0		ug/L			10/21/24 22:14	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/21/24 22:14	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/21/24 22:14	1
Dibromomethane	ND		1.0		ug/L			10/21/24 22:14	1
Dichlorobromomethane	ND		1.0		ug/L			10/21/24 22:14	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/21/24 22:14	1
Ethyl ether	ND		1.0		ug/L			10/21/24 22:14	1
Ethylbenzene	ND		1.0		ug/L			10/21/24 22:14	1
1,2-Dibromoethane	ND		1.0		ug/L			10/21/24 22:14	1

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

Lab Sample ID: MB 240-631714/7
Matrix: Water
Analysis Batch: 631714

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iodomethane	ND		1.0		ug/L			10/21/24 22:14	1
Naphthalene	ND		1.0		ug/L			10/21/24 22:14	1
n-Butylbenzene	ND		1.0		ug/L			10/21/24 22:14	1
Isopropylbenzene	ND		1.0		ug/L			10/21/24 22:14	1
N-Propylbenzene	ND		1.0		ug/L			10/21/24 22:14	1
2-Butanone (MEK)	ND		10		ug/L			10/21/24 22:14	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/21/24 22:14	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/21/24 22:14	1
Methylene Chloride	ND		5.0		ug/L			10/21/24 22:14	1
Styrene	ND		1.0		ug/L			10/21/24 22:14	1
Tetrachloroethene	ND		1.0		ug/L			10/21/24 22:14	1
Toluene	ND		1.0		ug/L			10/21/24 22:14	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/21/24 22:14	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/21/24 22:14	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/21/24 22:14	1
Trichloroethene	ND		1.0		ug/L			10/21/24 22:14	1
Trichlorofluoromethane	ND		1.0		ug/L			10/21/24 22:14	1
Vinyl chloride	ND		1.0		ug/L			10/21/24 22:14	1
Xylenes, Total	ND		2.0		ug/L			10/21/24 22:14	1
Chlorodibromomethane	ND		1.0		ug/L			10/21/24 22:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*		*10/21/24 22:14*	*1*
4-Bromofluorobenzene (Surr)	*89*		*56 - 136*		*10/21/24 22:14*	*1*
Toluene-d8 (Surr)	*95*		*78 - 122*		*10/21/24 22:14*	*1*
Dibromofluoromethane (Surr)	*111*		*73 - 120*		*10/21/24 22:14*	*1*

Lab Sample ID: LCS 240-631714/4
Matrix: Water
Analysis Batch: 631714

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	25.0	24.7		ug/L		99	71 - 124
1,1,1-Trichloroethane	25.0	24.8		ug/L		99	64 - 131
1,1,2,2-Tetrachloroethane	25.0	21.8		ug/L		87	58 - 157
1,1,2-Trichloroethane	25.0	24.1		ug/L		96	70 - 138
1,1-Dichloroethane	25.0	25.3		ug/L		101	72 - 127
1,1-Dichloroethene	25.0	26.4		ug/L		105	63 - 134
1,2,3-Trichlorobenzene	25.0	24.2		ug/L		97	45 - 149
1,2,3-Trichloropropane	25.0	21.1		ug/L		85	57 - 150
1,2,4-Trichlorobenzene	25.0	21.7		ug/L		87	44 - 147
1,2,4-Trimethylbenzene	25.0	22.7		ug/L		91	77 - 129
1,2-Dibromo-3-Chloropropane	25.0	20.0		ug/L		80	53 - 135
1,2-Dichlorobenzene	25.0	24.3		ug/L		97	78 - 120
1,2-Dichloroethane	25.0	23.9		ug/L		96	66 - 128
1,2-Dichloropropane	25.0	22.0		ug/L		88	75 - 133
1,3,5-Trimethylbenzene	25.0	22.9		ug/L		91	75 - 129
1,3-Dichlorobenzene	25.0	23.4		ug/L		94	80 - 120

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

Lab Sample ID: LCS 240-631714/4
Matrix: Water
Analysis Batch: 631714

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	25.0	23.6		ug/L		94	80 - 120
2-Hexanone	50.0	37.4		ug/L		75	43 - 167
Chlorobromomethane	25.0	27.0		ug/L		108	71 - 121
Acetone	50.0	45.1		ug/L		90	50 - 149
Acrylonitrile	250	214		ug/L		85	51 - 161
Benzene	25.0	25.1		ug/L		100	77 - 123
Bromoform	25.0	24.0		ug/L		96	57 - 129
Bromomethane	12.5	14.1		ug/L		113	36 - 142
Carbon disulfide	25.0	26.0		ug/L		104	43 - 140
Carbon tetrachloride	25.0	23.8		ug/L		95	55 - 137
Chlorobenzene	25.0	24.6		ug/L		98	80 - 121
Chloroethane	12.5	13.0		ug/L		104	38 - 152
Chloroform	25.0	24.6		ug/L		98	74 - 122
Chloromethane	12.5	8.80		ug/L		70	47 - 143
cis-1,2-Dichloroethene	25.0	25.2		ug/L		101	77 - 123
cis-1,3-Dichloropropene	25.0	20.2		ug/L		81	64 - 130
Dibromomethane	25.0	24.8		ug/L		99	67 - 131
Dichlorobromomethane	25.0	23.1		ug/L		92	69 - 126
Dichlorodifluoromethane	12.5	7.72		ug/L		62	34 - 153
Ethyl ether	25.0	28.7		ug/L		115	53 - 151
Ethylbenzene	25.0	23.6		ug/L		94	80 - 121
1,2-Dibromoethane	25.0	24.1		ug/L		97	71 - 134
Iodomethane	25.0	29.1		ug/L		116	39 - 136
Naphthalene	25.0	22.1		ug/L		88	53 - 138
n-Butylbenzene	25.0	21.5		ug/L		86	62 - 139
Isopropylbenzene	25.0	25.2		ug/L		101	74 - 128
N-Propylbenzene	25.0	22.6		ug/L		90	76 - 127
2-Butanone (MEK)	50.0	34.9		ug/L		70	54 - 156
4-Methyl-2-pentanone (MIBK)	50.0	38.7		ug/L		77	46 - 158
Methyl tert-butyl ether	25.0	25.6		ug/L		102	65 - 126
Methylene Chloride	25.0	26.5		ug/L		106	71 - 125
Styrene	25.0	24.5		ug/L		98	80 - 135
Tetrachloroethene	25.0	25.6		ug/L		102	76 - 123
Toluene	25.0	22.1		ug/L		88	80 - 123
trans-1,2-Dichloroethene	25.0	26.1		ug/L		104	75 - 124
trans-1,3-Dichloropropene	25.0	21.3		ug/L		85	57 - 129
trans-1,4-Dichloro-2-butene	25.0	15.2		ug/L		61	14 - 173
Trichloroethene	25.0	25.1		ug/L		100	70 - 122
Trichlorofluoromethane	12.5	12.6		ug/L		101	30 - 170
Vinyl chloride	12.5	9.77		ug/L		78	60 - 144
Xylenes, Total	50.0	46.7		ug/L		93	80 - 121
Chlorodibromomethane	25.0	22.8		ug/L		91	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*
4-Bromofluorobenzene (Surr)	*96*		*56 - 136*
Toluene-d8 (Surr)	*99*		*78 - 122*
Dibromofluoromethane (Surr)	*104*		*73 - 120*

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

Lab Sample ID: MB 240-631732/7
Matrix: Water
Analysis Batch: 631732

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 02:02	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/22/24 02:02	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 02:02	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/22/24 02:02	1
1,1-Dichloroethane	ND		1.0		ug/L			10/22/24 02:02	1
1,1-Dichloroethene	ND		1.0		ug/L			10/22/24 02:02	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/22/24 02:02	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/22/24 02:02	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/22/24 02:02	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/22/24 02:02	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/22/24 02:02	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/22/24 02:02	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/22/24 02:02	1
1,2-Dichloroethane	ND		1.0		ug/L			10/22/24 02:02	1
1,2-Dichloropropane	ND		1.0		ug/L			10/22/24 02:02	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/22/24 02:02	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/22/24 02:02	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/22/24 02:02	1
2-Hexanone	ND		10		ug/L			10/22/24 02:02	1
2-Methylnaphthalene	ND		5.0		ug/L			10/22/24 02:02	1
Chlorobromomethane	ND		1.0		ug/L			10/22/24 02:02	1
Acetone	ND		10		ug/L			10/22/24 02:02	1
Acrylonitrile	ND		20		ug/L			10/22/24 02:02	1
Benzene	ND		1.0		ug/L			10/22/24 02:02	1
Bromoform	ND		1.0		ug/L			10/22/24 02:02	1
Bromomethane	ND		1.0		ug/L			10/22/24 02:02	1
Carbon disulfide	ND		5.0		ug/L			10/22/24 02:02	1
Carbon tetrachloride	ND		1.0		ug/L			10/22/24 02:02	1
Chlorobenzene	ND		1.0		ug/L			10/22/24 02:02	1
Chloroethane	ND		1.0		ug/L			10/22/24 02:02	1
Chloroform	ND		1.0		ug/L			10/22/24 02:02	1
Chloromethane	ND		1.0		ug/L			10/22/24 02:02	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 02:02	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 02:02	1
Dibromomethane	ND		1.0		ug/L			10/22/24 02:02	1
Dichlorobromomethane	ND		1.0		ug/L			10/22/24 02:02	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/22/24 02:02	1
Ethyl ether	ND		1.0		ug/L			10/22/24 02:02	1
Ethylbenzene	ND		1.0		ug/L			10/22/24 02:02	1
1,2-Dibromoethane	ND		1.0		ug/L			10/22/24 02:02	1
Iodomethane	ND		1.0		ug/L			10/22/24 02:02	1
Naphthalene	ND		1.0		ug/L			10/22/24 02:02	1
n-Butylbenzene	ND		1.0		ug/L			10/22/24 02:02	1
Isopropylbenzene	ND		1.0		ug/L			10/22/24 02:02	1
N-Propylbenzene	ND		1.0		ug/L			10/22/24 02:02	1
2-Butanone (MEK)	ND		10		ug/L			10/22/24 02:02	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/22/24 02:02	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/22/24 02:02	1

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

Lab Sample ID: MB 240-631732/7
Matrix: Water
Analysis Batch: 631732

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		5.0		ug/L			10/22/24 02:02	1
Styrene	ND		1.0		ug/L			10/22/24 02:02	1
Tetrachloroethene	ND		1.0		ug/L			10/22/24 02:02	1
Toluene	ND		1.0		ug/L			10/22/24 02:02	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 02:02	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 02:02	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/22/24 02:02	1
Trichloroethene	ND		1.0		ug/L			10/22/24 02:02	1
Trichlorofluoromethane	ND		1.0		ug/L			10/22/24 02:02	1
Vinyl chloride	ND		1.0		ug/L			10/22/24 02:02	1
Xylenes, Total	ND		2.0		ug/L			10/22/24 02:02	1
Chlorodibromomethane	ND		1.0		ug/L			10/22/24 02:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*62 - 137*		*10/22/24 02:02*	*1*
4-Bromofluorobenzene (Surr)	*90*		*56 - 136*		*10/22/24 02:02*	*1*
Toluene-d8 (Surr)	*99*		*78 - 122*		*10/22/24 02:02*	*1*
Dibromofluoromethane (Surr)	*97*		*73 - 120*		*10/22/24 02:02*	*1*

Lab Sample ID: LCS 240-631732/3
Matrix: Water
Analysis Batch: 631732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane			20.0	17.0		ug/L		85	71 - 124		
1,1,1-Trichloroethane			20.0	16.7		ug/L		84	64 - 131		
1,1,2,2-Tetrachloroethane			20.0	15.8		ug/L		79	58 - 157		
1,1,2-Trichloroethane			20.0	17.8		ug/L		89	70 - 138		
1,1-Dichloroethane			20.0	16.8		ug/L		84	72 - 127		
1,1-Dichloroethene			20.0	17.8		ug/L		89	63 - 134		
1,2,3-Trichlorobenzene			20.0	12.8		ug/L		64	45 - 149		
1,2,3-Trichloropropane			20.0	16.5		ug/L		83	57 - 150		
1,2,4-Trichlorobenzene			20.0	12.9		ug/L		65	44 - 147		
1,2,4-Trimethylbenzene			20.0	16.0		ug/L		80	77 - 129		
1,2-Dibromo-3-Chloropropane			20.0	14.1		ug/L		70	53 - 135		
1,2-Dichlorobenzene			20.0	16.0		ug/L		80	78 - 120		
1,2-Dichloroethane			20.0	16.0		ug/L		80	66 - 128		
1,2-Dichloropropane			20.0	15.9		ug/L		79	75 - 133		
1,3,5-Trimethylbenzene			20.0	16.0		ug/L		80	75 - 129		
1,3-Dichlorobenzene			20.0	16.3		ug/L		81	80 - 120		
1,4-Dichlorobenzene			20.0	16.1		ug/L		80	80 - 120		
2-Hexanone			40.0	34.0		ug/L		85	43 - 167		
Chlorobromomethane			20.0	15.1		ug/L		76	71 - 121		
Acetone			40.0	26.5		ug/L		66	50 - 149		
Acrylonitrile			200	148		ug/L		74	51 - 161		
Benzene			20.0	16.9		ug/L		85	77 - 123		
Bromoform			20.0	15.8		ug/L		79	57 - 129		
Bromomethane			20.0	14.6		ug/L		73	36 - 142		

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

Lab Sample ID: LCS 240-631732/3
Matrix: Water
Analysis Batch: 631732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon disulfide	20.0	18.8		ug/L		94	43 - 140
Carbon tetrachloride	20.0	16.0		ug/L		80	55 - 137
Chlorobenzene	20.0	16.8		ug/L		84	80 - 121
Chloroethane	20.0	13.6		ug/L		68	38 - 152
Chloroform	20.0	16.6		ug/L		83	74 - 122
Chloromethane	20.0	10.9		ug/L		55	47 - 143
cis-1,2-Dichloroethene	20.0	16.4		ug/L		82	77 - 123
cis-1,3-Dichloropropene	20.0	14.6		ug/L		73	64 - 130
Dibromomethane	20.0	17.3		ug/L		86	67 - 131
Dichlorobromomethane	20.0	16.2		ug/L		81	69 - 126
Dichlorodifluoromethane	20.0	10.3		ug/L		52	34 - 153
Ethyl ether	20.0	15.8		ug/L		79	53 - 151
Ethylbenzene	20.0	17.5		ug/L		87	80 - 121
1,2-Dibromoethane	20.0	17.3		ug/L		86	71 - 134
Iodomethane	20.0	18.9		ug/L		94	39 - 136
Naphthalene	20.0	13.1		ug/L		65	53 - 138
n-Butylbenzene	20.0	15.9		ug/L		79	62 - 139
Isopropylbenzene	20.0	18.8		ug/L		94	74 - 128
N-Propylbenzene	20.0	15.5		ug/L		77	76 - 127
2-Butanone (MEK)	40.0	29.4		ug/L		73	54 - 156
4-Methyl-2-pentanone (MIBK)	40.0	27.9		ug/L		70	46 - 158
Methyl tert-butyl ether	20.0	16.7		ug/L		83	65 - 126
Methylene Chloride	20.0	16.4		ug/L		82	71 - 125
Styrene	20.0	18.0		ug/L		90	80 - 135
Tetrachloroethene	20.0	17.4		ug/L		87	76 - 123
Toluene	20.0	17.2		ug/L		86	80 - 123
trans-1,2-Dichloroethene	20.0	16.2		ug/L		81	75 - 124
trans-1,3-Dichloropropene	20.0	17.2		ug/L		86	57 - 129
trans-1,4-Dichloro-2-butene	20.0	13.4		ug/L		67	14 - 173
Trichloroethene	20.0	15.9		ug/L		79	70 - 122
Trichlorofluoromethane	20.0	14.6		ug/L		73	30 - 170
Vinyl chloride	20.0	12.8		ug/L		64	60 - 144
Xylenes, Total	40.0	35.2		ug/L		88	80 - 121
Chlorodibromomethane	20.0	16.4		ug/L		82	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*62 - 137*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*
Toluene-d8 (Surr)	*104*		*78 - 122*
Dibromofluoromethane (Surr)	*96*		*73 - 120*

Lab Sample ID: LCS 240-631732/4
Matrix: Water
Analysis Batch: 631732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*62 - 137*
4-Bromofluorobenzene (Surr)	*92*		*56 - 136*

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

Lab Sample ID: LCS 240-631732/4
Matrix: Water
Analysis Batch: 631732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		78 - 122
Dibromofluoromethane (Surr)	94		73 - 120

Lab Sample ID: MB 240-631833/7
Matrix: Water
Analysis Batch: 631833

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 12:16	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/22/24 12:16	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 12:16	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/22/24 12:16	1
1,1-Dichloroethane	ND		1.0		ug/L			10/22/24 12:16	1
1,1-Dichloroethene	ND		1.0		ug/L			10/22/24 12:16	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/22/24 12:16	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/22/24 12:16	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/22/24 12:16	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/22/24 12:16	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/22/24 12:16	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/22/24 12:16	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/22/24 12:16	1
1,2-Dichloroethane	ND		1.0		ug/L			10/22/24 12:16	1
1,2-Dichloropropane	ND		1.0		ug/L			10/22/24 12:16	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/22/24 12:16	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/22/24 12:16	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/22/24 12:16	1
2-Hexanone	ND		10		ug/L			10/22/24 12:16	1
2-Methylnaphthalene	ND		5.0		ug/L			10/22/24 12:16	1
Chlorobromomethane	ND		1.0		ug/L			10/22/24 12:16	1
Acetone	ND		10		ug/L			10/22/24 12:16	1
Acrylonitrile	ND		20		ug/L			10/22/24 12:16	1
Benzene	ND		1.0		ug/L			10/22/24 12:16	1
Bromoform	ND		1.0		ug/L			10/22/24 12:16	1
Bromomethane	ND		1.0		ug/L			10/22/24 12:16	1
Carbon disulfide	ND		5.0		ug/L			10/22/24 12:16	1
Carbon tetrachloride	ND		1.0		ug/L			10/22/24 12:16	1
Chlorobenzene	ND		1.0		ug/L			10/22/24 12:16	1
Chloroethane	ND		1.0		ug/L			10/22/24 12:16	1
Chloroform	ND		1.0		ug/L			10/22/24 12:16	1
Chloromethane	ND		1.0		ug/L			10/22/24 12:16	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 12:16	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 12:16	1
Dibromomethane	ND		1.0		ug/L			10/22/24 12:16	1
Dichlorobromomethane	ND		1.0		ug/L			10/22/24 12:16	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/22/24 12:16	1
Ethyl ether	ND		1.0		ug/L			10/22/24 12:16	1
Ethylbenzene	ND		1.0		ug/L			10/22/24 12:16	1
1,2-Dibromoethane	ND		1.0		ug/L			10/22/24 12:16	1

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

Lab Sample ID: MB 240-631833/7
Matrix: Water
Analysis Batch: 631833

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iodomethane	ND		1.0		ug/L			10/22/24 12:16	1
Naphthalene	ND		1.0		ug/L			10/22/24 12:16	1
n-Butylbenzene	ND		1.0		ug/L			10/22/24 12:16	1
Isopropylbenzene	ND		1.0		ug/L			10/22/24 12:16	1
N-Propylbenzene	ND		1.0		ug/L			10/22/24 12:16	1
2-Butanone (MEK)	ND		10		ug/L			10/22/24 12:16	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/22/24 12:16	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/22/24 12:16	1
Methylene Chloride	ND		5.0		ug/L			10/22/24 12:16	1
Styrene	ND		1.0		ug/L			10/22/24 12:16	1
Tetrachloroethene	ND		1.0		ug/L			10/22/24 12:16	1
Toluene	ND		1.0		ug/L			10/22/24 12:16	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 12:16	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 12:16	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/22/24 12:16	1
Trichloroethene	ND		1.0		ug/L			10/22/24 12:16	1
Trichlorofluoromethane	ND		1.0		ug/L			10/22/24 12:16	1
Vinyl chloride	ND		1.0		ug/L			10/22/24 12:16	1
Xylenes, Total	ND		2.0		ug/L			10/22/24 12:16	1
Chlorodibromomethane	ND		1.0		ug/L			10/22/24 12:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*62 - 137*		*10/22/24 12:16*	*1*
4-Bromofluorobenzene (Surr)	*81*		*56 - 136*		*10/22/24 12:16*	*1*
Toluene-d8 (Surr)	*89*		*78 - 122*		*10/22/24 12:16*	*1*
Dibromofluoromethane (Surr)	*101*		*73 - 120*		*10/22/24 12:16*	*1*

Lab Sample ID: LCS 240-631833/4
Matrix: Water
Analysis Batch: 631833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane			25.0	24.4		ug/L		98	71 - 124		
1,1,1-Trichloroethane			25.0	23.9		ug/L		96	64 - 131		
1,1,2,2-Tetrachloroethane			25.0	21.4		ug/L		86	58 - 157		
1,1,2-Trichloroethane			25.0	23.7		ug/L		95	70 - 138		
1,1-Dichloroethane			25.0	24.9		ug/L		100	72 - 127		
1,1-Dichloroethene			25.0	24.6		ug/L		98	63 - 134		
1,2,3-Trichlorobenzene			25.0	25.5		ug/L		102	45 - 149		
1,2,3-Trichloropropane			25.0	20.7		ug/L		83	57 - 150		
1,2,4-Trichlorobenzene			25.0	22.4		ug/L		90	44 - 147		
1,2,4-Trimethylbenzene			25.0	23.3		ug/L		93	77 - 129		
1,2-Dibromo-3-Chloropropane			25.0	21.0		ug/L		84	53 - 135		
1,2-Dichlorobenzene			25.0	24.5		ug/L		98	78 - 120		
1,2-Dichloroethane			25.0	22.7		ug/L		91	66 - 128		
1,2-Dichloropropane			25.0	21.6		ug/L		86	75 - 133		
1,3,5-Trimethylbenzene			25.0	22.9		ug/L		92	75 - 129		
1,3-Dichlorobenzene			25.0	23.5		ug/L		94	80 - 120		

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

Lab Sample ID: LCS 240-631833/4
Matrix: Water
Analysis Batch: 631833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	25.0	24.1		ug/L		96	80 - 120
2-Hexanone	50.0	36.0		ug/L		72	43 - 167
Chlorobromomethane	25.0	25.7		ug/L		103	71 - 121
Acetone	50.0	45.8		ug/L		92	50 - 149
Acrylonitrile	250	213		ug/L		85	51 - 161
Benzene	25.0	25.0		ug/L		100	77 - 123
Bromoform	25.0	24.4		ug/L		98	57 - 129
Bromomethane	12.5	13.5		ug/L		108	36 - 142
Carbon disulfide	25.0	26.9		ug/L		107	43 - 140
Carbon tetrachloride	25.0	23.2		ug/L		93	55 - 137
Chlorobenzene	25.0	24.9		ug/L		100	80 - 121
Chloroethane	12.5	11.8		ug/L		94	38 - 152
Chloroform	25.0	24.1		ug/L		96	74 - 122
Chloromethane	12.5	8.21		ug/L		66	47 - 143
cis-1,2-Dichloroethene	25.0	24.4		ug/L		98	77 - 123
cis-1,3-Dichloropropene	25.0	20.3		ug/L		81	64 - 130
Dibromomethane	25.0	24.2		ug/L		97	67 - 131
Dichlorobromomethane	25.0	22.7		ug/L		91	69 - 126
Dichlorodifluoromethane	12.5	7.32		ug/L		59	34 - 153
Ethyl ether	25.0	27.9		ug/L		111	53 - 151
Ethylbenzene	25.0	23.4		ug/L		93	80 - 121
1,2-Dibromoethane	25.0	24.1		ug/L		96	71 - 134
Iodomethane	25.0	28.9		ug/L		115	39 - 136
Naphthalene	25.0	22.8		ug/L		91	53 - 138
n-Butylbenzene	25.0	21.8		ug/L		87	62 - 139
Isopropylbenzene	25.0	26.2		ug/L		105	74 - 128
N-Propylbenzene	25.0	22.0		ug/L		88	76 - 127
2-Butanone (MEK)	50.0	35.5		ug/L		71	54 - 156
4-Methyl-2-pentanone (MIBK)	50.0	37.7		ug/L		75	46 - 158
Methyl tert-butyl ether	25.0	24.7		ug/L		99	65 - 126
Methylene Chloride	25.0	26.6		ug/L		106	71 - 125
Styrene	25.0	24.9		ug/L		100	80 - 135
Tetrachloroethene	25.0	26.0		ug/L		104	76 - 123
Toluene	25.0	22.4		ug/L		90	80 - 123
trans-1,2-Dichloroethene	25.0	26.1		ug/L		104	75 - 124
trans-1,3-Dichloropropene	25.0	21.7		ug/L		87	57 - 129
trans-1,4-Dichloro-2-butene	25.0	17.8		ug/L		71	14 - 173
Trichloroethene	25.0	24.8		ug/L		99	70 - 122
Trichlorofluoromethane	12.5	10.4		ug/L		84	30 - 170
Vinyl chloride	12.5	9.72		ug/L		78	60 - 144
Xylenes, Total	50.0	47.7		ug/L		95	80 - 121
Chlorodibromomethane	25.0	23.0		ug/L		92	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*62 - 137*
4-Bromofluorobenzene (Surr)	*91*		*56 - 136*
Toluene-d8 (Surr)	*92*		*78 - 122*
Dibromofluoromethane (Surr)	*99*		*73 - 120*

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

Lab Sample ID: LCS 240-631833/5
Matrix: Water
Analysis Batch: 631833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*
4-Bromofluorobenzene (Surr)	*93*		*56 - 136*
Toluene-d8 (Surr)	*91*		*78 - 122*
Dibromofluoromethane (Surr)	*97*		*73 - 120*

Lab Sample ID: MB 240-632088/10
Matrix: Water
Analysis Batch: 632088

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/23/24 13:25	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/23/24 13:25	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/23/24 13:25	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/23/24 13:25	1
1,1-Dichloroethane	ND		1.0		ug/L			10/23/24 13:25	1
1,1-Dichloroethene	ND		1.0		ug/L			10/23/24 13:25	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/23/24 13:25	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/23/24 13:25	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/23/24 13:25	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/23/24 13:25	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/23/24 13:25	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/23/24 13:25	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/23/24 13:25	1
1,2-Dichloroethane	ND		1.0		ug/L			10/23/24 13:25	1
1,2-Dichloropropane	ND		1.0		ug/L			10/23/24 13:25	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/23/24 13:25	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/23/24 13:25	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/23/24 13:25	1
2-Hexanone	ND		10		ug/L			10/23/24 13:25	1
2-Methylnaphthalene	ND		5.0		ug/L			10/23/24 13:25	1
Chlorobromomethane	ND		1.0		ug/L			10/23/24 13:25	1
Acetone	ND		10		ug/L			10/23/24 13:25	1
Acrylonitrile	ND		20		ug/L			10/23/24 13:25	1
Benzene	ND		1.0		ug/L			10/23/24 13:25	1
Bromoform	ND		1.0		ug/L			10/23/24 13:25	1
Bromomethane	ND		1.0		ug/L			10/23/24 13:25	1
Carbon disulfide	ND		5.0		ug/L			10/23/24 13:25	1
Carbon tetrachloride	ND		1.0		ug/L			10/23/24 13:25	1
Chlorobenzene	ND		1.0		ug/L			10/23/24 13:25	1
Chloroethane	ND		1.0		ug/L			10/23/24 13:25	1
Chloroform	ND		1.0		ug/L			10/23/24 13:25	1
Chloromethane	ND		1.0		ug/L			10/23/24 13:25	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/23/24 13:25	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/23/24 13:25	1
Dibromomethane	ND		1.0		ug/L			10/23/24 13:25	1
Dichlorobromomethane	ND		1.0		ug/L			10/23/24 13:25	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/23/24 13:25	1
Ethyl ether	ND		1.0		ug/L			10/23/24 13:25	1

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

Lab Sample ID: MB 240-632088/10
Matrix: Water
Analysis Batch: 632088

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0		ug/L			10/23/24 13:25	1
1,2-Dibromoethane	ND		1.0		ug/L			10/23/24 13:25	1
Iodomethane	ND		1.0		ug/L			10/23/24 13:25	1
Naphthalene	ND		1.0		ug/L			10/23/24 13:25	1
n-Butylbenzene	ND		1.0		ug/L			10/23/24 13:25	1
Isopropylbenzene	ND		1.0		ug/L			10/23/24 13:25	1
N-Propylbenzene	ND		1.0		ug/L			10/23/24 13:25	1
2-Butanone (MEK)	ND		10		ug/L			10/23/24 13:25	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/23/24 13:25	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/23/24 13:25	1
Methylene Chloride	ND		5.0		ug/L			10/23/24 13:25	1
Styrene	ND		1.0		ug/L			10/23/24 13:25	1
Tetrachloroethene	ND		1.0		ug/L			10/23/24 13:25	1
Toluene	ND		1.0		ug/L			10/23/24 13:25	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/23/24 13:25	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/23/24 13:25	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/23/24 13:25	1
Trichloroethene	ND		1.0		ug/L			10/23/24 13:25	1
Trichlorofluoromethane	ND		1.0		ug/L			10/23/24 13:25	1
Vinyl chloride	ND		1.0		ug/L			10/23/24 13:25	1
Xylenes, Total	ND		2.0		ug/L			10/23/24 13:25	1
Chlorodibromomethane	ND		1.0		ug/L			10/23/24 13:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*62 - 137*		*10/23/24 13:25*	*1*
4-Bromofluorobenzene (Surr)	*87*		*56 - 136*		*10/23/24 13:25*	*1*
Toluene-d8 (Surr)	*94*		*78 - 122*		*10/23/24 13:25*	*1*
Dibromofluoromethane (Surr)	*108*		*73 - 120*		*10/23/24 13:25*	*1*

Lab Sample ID: LCS 240-632088/5
Matrix: Water
Analysis Batch: 632088

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	25.0	26.5		ug/L		106	71 - 124
1,1,1-Trichloroethane	25.0	26.6		ug/L		106	64 - 131
1,1,2,2-Tetrachloroethane	25.0	21.5		ug/L		86	58 - 157
1,1,2-Trichloroethane	25.0	25.3		ug/L		101	70 - 138
1,1-Dichloroethane	25.0	27.0		ug/L		108	72 - 127
1,1-Dichloroethene	25.0	29.8		ug/L		119	63 - 134
1,2,3-Trichlorobenzene	25.0	25.4		ug/L		102	45 - 149
1,2,3-Trichloropropane	25.0	20.9		ug/L		84	57 - 150
1,2,4-Trichlorobenzene	25.0	22.9		ug/L		92	44 - 147
1,2,4-Trimethylbenzene	25.0	23.8		ug/L		95	77 - 129
1,2-Dibromo-3-Chloropropane	25.0	21.1		ug/L		84	53 - 135
1,2-Dichlorobenzene	25.0	25.3		ug/L		101	78 - 120
1,2-Dichloroethane	25.0	24.9		ug/L		100	66 - 128
1,2-Dichloropropane	25.0	23.3		ug/L		93	75 - 133

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

Lab Sample ID: LCS 240-632088/5
Matrix: Water
Analysis Batch: 632088

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3,5-Trimethylbenzene	25.0	24.2		ug/L		97	75 - 129
1,3-Dichlorobenzene	25.0	24.3		ug/L		97	80 - 120
1,4-Dichlorobenzene	25.0	24.9		ug/L		100	80 - 120
2-Hexanone	50.0	39.7		ug/L		79	43 - 167
Chlorobromomethane	25.0	27.3		ug/L		109	71 - 121
Acetone	50.0	55.3		ug/L		111	50 - 149
Acrylonitrile	250	227		ug/L		91	51 - 161
Benzene	25.0	26.8		ug/L		107	77 - 123
Bromoform	25.0	26.0		ug/L		104	57 - 129
Bromomethane	12.5	14.5		ug/L		116	36 - 142
Carbon disulfide	25.0	29.3		ug/L		117	43 - 140
Carbon tetrachloride	25.0	27.5		ug/L		110	55 - 137
Chlorobenzene	25.0	26.7		ug/L		107	80 - 121
Chloroethane	12.5	13.0		ug/L		104	38 - 152
Chloroform	25.0	26.2		ug/L		105	74 - 122
Chloromethane	12.5	9.02		ug/L		72	47 - 143
cis-1,2-Dichloroethene	25.0	26.7		ug/L		107	77 - 123
cis-1,3-Dichloropropene	25.0	21.5		ug/L		86	64 - 130
Dibromomethane	25.0	25.8		ug/L		103	67 - 131
Dichlorobromomethane	25.0	24.1		ug/L		97	69 - 126
Dichlorodifluoromethane	12.5	8.73		ug/L		70	34 - 153
Ethyl ether	25.0	29.7		ug/L		119	53 - 151
Ethylbenzene	25.0	25.8		ug/L		103	80 - 121
1,2-Dibromoethane	25.0	25.4		ug/L		102	71 - 134
Iodomethane	25.0	30.7		ug/L		123	39 - 136
Naphthalene	25.0	22.6		ug/L		90	53 - 138
n-Butylbenzene	25.0	23.8		ug/L		95	62 - 139
Isopropylbenzene	25.0	28.3		ug/L		113	74 - 128
N-Propylbenzene	25.0	24.0		ug/L		96	76 - 127
2-Butanone (MEK)	50.0	45.0		ug/L		90	54 - 156
4-Methyl-2-pentanone (MIBK)	50.0	39.2		ug/L		78	46 - 158
Methyl tert-butyl ether	25.0	26.4		ug/L		106	65 - 126
Methylene Chloride	25.0	27.5		ug/L		110	71 - 125
Styrene	25.0	26.4		ug/L		106	80 - 135
Tetrachloroethene	25.0	29.9		ug/L		120	76 - 123
Toluene	25.0	24.1		ug/L		97	80 - 123
trans-1,2-Dichloroethene	25.0	28.0		ug/L		112	75 - 124
trans-1,3-Dichloropropene	25.0	23.5		ug/L		94	57 - 129
trans-1,4-Dichloro-2-butene	25.0	18.8		ug/L		75	14 - 173
Trichloroethene	25.0	27.4		ug/L		109	70 - 122
Trichlorofluoromethane	12.5	13.7		ug/L		110	30 - 170
Vinyl chloride	12.5	10.8		ug/L		87	60 - 144
Xylenes, Total	50.0	51.0		ug/L		102	80 - 121
Chlorodibromomethane	25.0	24.4		ug/L		98	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*62 - 137*
4-Bromofluorobenzene (Surr)	*93*		*56 - 136*

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

Lab Sample ID: LCS 240-632088/5
Matrix: Water
Analysis Batch: 632088

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120

Lab Sample ID: LCS 240-632088/7
Matrix: Water
Analysis Batch: 632088

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	109		73 - 120

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Lab Sample ID: MB 200-209802/1-A
Matrix: Water
Analysis Batch: 209894

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 209802

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/17/24 11:00	10/18/24 13:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	90		46 - 130	10/17/24 11:00	10/18/24 13:37	1

Lab Sample ID: LCS 200-209802/2-A
Matrix: Water
Analysis Batch: 209894

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 209802

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			8.00	7.68		ug/L		96	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Dioxane-d8 (Surr)	88		46 - 130

Lab Sample ID: LCSD 200-209802/3-A
Matrix: Water
Analysis Batch: 209894

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 209802

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			8.00	7.75		ug/L		97	70 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Dioxane-d8 (Surr)	94		46 - 130

GC/MS VOA

Analysis Batch: 631582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-212956-12	W-89-92	Total/NA	Water	8260D	
240-212956-13	FIELD BLANK	Total/NA	Water	8260D	
240-212956-14	W-85-92	Total/NA	Water	8260D	
MB 240-631582/9	Method Blank	Total/NA	Water	8260D	
LCS 240-631582/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-631582/6	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 631714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-212959-2	PW-1R-12	Total/NA	Water	8260D	
240-212959-3	PW-3R-12	Total/NA	Water	8260D	
MB 240-631714/7	Method Blank	Total/NA	Water	8260D	
LCS 240-631714/4	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 631732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-212959-7	W-92-92	Total/NA	Water	8260D	
240-212959-10	W-90-92	Total/NA	Water	8260D	
240-212959-11	W-99-93	Total/NA	Water	8260D	
MB 240-631732/7	Method Blank	Total/NA	Water	8260D	
LCS 240-631732/3	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-631732/4	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 631833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-212959-3	PW-3R-12	Total/NA	Water	8260D	
MB 240-631833/7	Method Blank	Total/NA	Water	8260D	
LCS 240-631833/4	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-631833/5	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 632088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-212959-2	PW-1R-12	Total/NA	Water	8260D	
MB 240-632088/10	Method Blank	Total/NA	Water	8260D	
LCS 240-632088/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-632088/7	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 209802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-212959-1	W-105-20	Total/NA	Water	522	
240-212959-2	PW-1R-12	Total/NA	Water	522	
240-212959-3	PW-3R-12	Total/NA	Water	522	
240-212959-4	W-106-20	Total/NA	Water	522	
240-212959-5	W-107-20	Total/NA	Water	522	
240-212959-6	W-68-90	Total/NA	Water	522	
240-212959-8	W-108-20	Total/NA	Water	522	
240-212959-9	W-48-89	Total/NA	Water	522	
MB 200-209802/1-A	Method Blank	Total/NA	Water	522	
LCS 200-209802/2-A	Lab Control Sample	Total/NA	Water	522	

GC/MS Semi VOA (Continued)

Prep Batch: 209802 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 200-209802/3-A	Lab Control Sample Dup	Total/NA	Water	522	

Analysis Batch: 209894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-212959-1	W-105-20	Total/NA	Water	522	209802
240-212959-4	W-106-20	Total/NA	Water	522	209802
240-212959-5	W-107-20	Total/NA	Water	522	209802
240-212959-6	W-68-90	Total/NA	Water	522	209802
240-212959-8	W-108-20	Total/NA	Water	522	209802
MB 200-209802/1-A	Method Blank	Total/NA	Water	522	209802
LCS 200-209802/2-A	Lab Control Sample	Total/NA	Water	522	209802
LCSD 200-209802/3-A	Lab Control Sample Dup	Total/NA	Water	522	209802

Analysis Batch: 209964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-212959-2	PW-1R-12	Total/NA	Water	522	209802
240-212959-3	PW-3R-12	Total/NA	Water	522	209802
240-212959-9	W-48-89	Total/NA	Water	522	209802

Lab Chronicle

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-89-92
Lab Sample ID: 240-212956-12
Date Collected: 10/10/24 17:35
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631582	AJS	EET CLE	10/21/24 17:56

Client Sample ID: FIELD BLANK
Lab Sample ID: 240-212956-13
Date Collected: 10/10/24 00:00
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631582	AJS	EET CLE	10/21/24 14:56

Client Sample ID: W-85-92
Lab Sample ID: 240-212956-14
Date Collected: 10/11/24 10:10
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		4	631582	AJS	EET CLE	10/21/24 18:22

Client Sample ID: W-105-20
Lab Sample ID: 240-212959-1
Date Collected: 10/08/24 15:55
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	522			209802	CMW	EET BUR	10/17/24 11:00
Total/NA	Analysis	522		1	209894	K1P	EET BUR	10/18/24 15:25

Client Sample ID: PW-1R-12
Lab Sample ID: 240-212959-2
Date Collected: 10/09/24 10:15
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631714	LEE	EET CLE	10/22/24 03:35
Total/NA	Analysis	8260D		1	632088	MDH	EET CLE	10/23/24 14:18
Total/NA	Prep	522			209802	CMW	EET BUR	10/17/24 11:00
Total/NA	Analysis	522		20	209964	K1P	EET BUR	10/21/24 17:36

Client Sample ID: PW-3R-12
Lab Sample ID: 240-212959-3
Date Collected: 10/09/24 12:45
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631714	LEE	EET CLE	10/22/24 03:55
Total/NA	Analysis	8260D		1	631833	LEE	EET CLE	10/22/24 16:56
Total/NA	Prep	522			209802	CMW	EET BUR	10/17/24 11:00
Total/NA	Analysis	522		20	209964	K1P	EET BUR	10/21/24 17:49

Lab Chronicle

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-106-20
Lab Sample ID: 240-212959-4
Date Collected: 10/09/24 16:15
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	522			209802	CMW	EET BUR	10/17/24 11:00
Total/NA	Analysis	522		1	209894	K1P	EET BUR	10/18/24 16:19

Client Sample ID: W-107-20
Lab Sample ID: 240-212959-5
Date Collected: 10/09/24 17:15
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	522			209802	CMW	EET BUR	10/17/24 11:00
Total/NA	Analysis	522		1	209894	K1P	EET BUR	10/18/24 16:33

Client Sample ID: W-68-90
Lab Sample ID: 240-212959-6
Date Collected: 10/10/24 10:45
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	522			209802	CMW	EET BUR	10/17/24 11:00
Total/NA	Analysis	522		1	209894	K1P	EET BUR	10/18/24 16:46

Client Sample ID: W-92-92
Lab Sample ID: 240-212959-7
Date Collected: 10/10/24 11:55
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631732	AJS	EET CLE	10/22/24 06:43

Client Sample ID: W-108-20
Lab Sample ID: 240-212959-8
Date Collected: 10/10/24 14:55
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	522			209802	CMW	EET BUR	10/17/24 11:00
Total/NA	Analysis	522		1	209894	K1P	EET BUR	10/18/24 17:00

Client Sample ID: W-48-89
Lab Sample ID: 240-212959-9
Date Collected: 10/10/24 15:10
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	522			209802	CMW	EET BUR	10/17/24 11:00
Total/NA	Analysis	522		5	209964	K1P	EET BUR	10/21/24 18:03

Lab Chronicle

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: W-90-92
Lab Sample ID: 240-212959-10
Date Collected: 10/10/24 16:15
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631732	AJS	EET CLE	10/22/24 07:09

Client Sample ID: W-99-93
Lab Sample ID: 240-212959-11
Date Collected: 10/10/24 17:00
Matrix: Water
Date Received: 10/12/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631732	AJS	EET CLE	10/22/24 07:35

Laboratory References:

EET BUR = Eurofins Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Tetra Tech GEO
Job ID: 240-212956-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Connecticut	State	PH-0806	12-31-26
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Hampshire	NELAP	225024	09-30-25
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-25
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-25
West Virginia DEP	State	210	12-31-24

Laboratory: Eurofins Burlington

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2336	02-25-26
Connecticut	State	PH-0751	09-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	05-19-25
Florida	NELAP	E87467	06-30-25
Minnesota	NELAP	050-999-436	12-31-24
New Hampshire	NELAP	2006	12-18-24
New Jersey	NELAP	VT972	06-30-25
New York	NELAP	10391	03-31-25
Pennsylvania	NELAP	68-00489	04-30-25
Rhode Island	State	LAO00298	12-31-24
US Fish & Wildlife	US Federal Programs	058448	08-01-25
USDA	US Federal Programs	P330-17-00272	12-19-26
Vermont	State	VT4000	02-10-25
Virginia	NELAP	460209	12-14-24
Wisconsin	State	399140830	03-31-25

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone (330) 497-9396 Phone (330) 497-0772

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler: RMF/JMH	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-119054-41599.1
Client Contact: Patti McCall	Phone: 715-214-4388	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: MI	Page: Page 2 of 2
Company: Tetra Tech GEO	PWSID:			Job #:
Address: 1136 Oak Valley Dr. Suite 100	Due Date Requested:			
City: Ann Arbor	TAT Requested (days): standard			
State, Zip: MI, 48108	Compliance Project: Δ Yes Δ No			
Phone: 734-213-2204(Tel)	PO #: Purchase Order not required			
Email: patti.mccall@tetratech.com	WO #: 117-105403 3 / 1.2			
Project Name: Ann Arbor Landfill Semi-Annual GW	Project #: 24027566			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D - VOCs (City of AnnArbor GW List)	8260D_SIM - 1,4-Dioxane	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A		
W-89-92	10/10/24	17:35	G	Water	N	N	X		6	
Field Blank	—	—		Water	N	N	X		1	
W-85-92	10/11/24	10:10	G	Water	N	N	X		1	
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						

240-212956 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
RMF	10/10 17:30, 10/11 10:10	TT	TT cold Storage	10/10 17:30, 10/11 10:10	TT
TT cold Storage	10/10/24 1105	TT		10/11/24 1107	EETA
	10/11/24 1110	EETA		10/12/24 8:00	Eurofins

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client Tetra Tech Site Name _____ Cooler unpacked by: TF

Cooler Received on 10/12/24 Opened on 10/12/24

FedEx. 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

Receipt After-hours. Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # 2C Foam Box Client Cooler Box Other _____

Packing material used. Bubble Wrap Foam Plastic Bag None Other _____

COOLANT Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 17 (CF +0.1 °C) Observed Cooler Temp. 1.1 °C Corrected Cooler Temp 1.2 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 2	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3 Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5 Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7 Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	Yes	No
11 Sufficient quantity received to perform indicated analyses?	Yes	No
12 Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt? TF	Yes	No NA pH Strip Lot# HC447997
14. Were VOAs on the COC?	Yes	No
15 Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____	Yes	No
17 Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page | Samples processed by:

W-48-89 labelled as W-49-24 logging per COC.
received a 250 Amber glass - HCl bottle ID W-108 20
logging but, 7/16/24 10 45
placing ^ sample on hold

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired

Sample(s) _____ were received in a broken container

Sample(s) _____ were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory

Time preserved: _____ Preservative(s) added/Lot number(s) _____

VOA Sample Preservation - Date/Time VOAs Frozen _____

10/12/2024

Login Container Summary Report

240-212956

10/25/2024

Temperature readings _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
W-89-92	240-212956-A-12	Voa Vial 40ml - Hydrochloric Acid				
W-89-92	240-212956-B-12	Voa Vial 40ml - Hydrochloric Acid				
W-89-92	240-212956-C-12	Voa Vial 40ml - Hydrochloric Acid				
W-89-92	240-212956-D-12	Voa Vial 40ml - Hydrochloric Acid				
W-89-92	240-212956-E-12	Voa Vial 40ml - Hydrochloric Acid				
W-89-92	240-212956-F-12	Voa Vial 40ml - Hydrochloric Acid				
FIELD BLANK	240-212956-A-13	Voa Vial 40ml - Hydrochloric Acid				
W-85-92	240-212956-A-14	Voa Vial 40ml - Hydrochloric Acid				
W-85-92	240-212956-B-14	Voa Vial 40ml - Hydrochloric Acid				
W-85-92	240-212956-C-14	Voa Vial 40ml - Hydrochloric Acid				
W-85-92	240-212956-D-14	Voa Vial 40ml - Hydrochloric Acid				
W-85-92	240-212956-E-14	Voa Vial 40ml - Hydrochloric Acid				
W-85-92	240-212956-F-14	Voa Vial 40ml - Hydrochloric Acid				
W-108-20	240-212956-A-15	Amber Glass 250mL - hydrochloric acid				

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone (330) 497-9396 Phone (330) 497-0772

Chain of Custody Record

1.1 / 1.2 MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler: RMF | JMH	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-119054-41599.1
Client Contact: Patti McCall	Phone: 715-214-4381	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: MI	Page: Page 1 of 2
Company: Tetra Tech GEO	PWSID:			Job #:
Address: 1136 Oak Valley Dr. Suite 100	Due Date Requested:			
City: Ann Arbor	TAT Requested (days): standard			
State, Zip: MI, 48108	Compliance Project: Δ Yes Δ No			
Phone: 734-213-2204(Tel)	PO #: Purchase Order not required			
Email: patti.mccall@tetratech.com	WO #: 117-1054033/1.2			
Project Name: Ann Arbor Landfill Semi-Annual GW	Project #: 24027566			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D - VOCs (City of AnnArbor GW List)	8260D_SIM - 1,4-Dioxane	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A		
W-105-20	10/8/24	15:55	G	Water	N	N		X	1	
PW-1R-12	10/9/24	10:15	G	Water	N	N	X	X	4	
PW-3R-12	10/9/24	12:45	G	Water	N	N	X	X	3	
W-106-20	10/9/24	16:15	G	Water	N	N		X	1	
W-107-20	10/9/24	17:15	G	Water	N	N		X	1	
W-68-90	10/10/24	10:45	G	Water	N	N		X	1	
W-92-92	10/10/24	11:55	G	Water	N	N	X		6	
W-108-20	10/10/24	14:55	G	Water	N	N		X	1	
W-48-89	10/10/24	15:10	G	Water	N	N		X	1	
W-90-92	10/10/24	16:15	G	Water	N	N	X		6	
W-99-93	10/10/24	17:00	G	Water	N	N	X		6	

240-212959 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: RMF	Date/Time: 10/8, 10/9, 10/10 17:30	Company: Tt	Received by: Tt Cold Storage	Date/Time: 10/8, 10/9, 10/10 17:30	Company: Tt
Relinquished by: Tt Cold Storage	Date/Time: 10/10/24 11:05	Company: Tt	Received by:	Date/Time: 10/11/24 1107	Company: ETA
Relinquished by:	Date/Time: 10/11/24 1110	Company: ETA	Received by: JF	Date/Time: 10/12/24 8:00	Company: Eur

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :**
Barberton Facility

Client Tetra Tech Site Name

Cooler Received on 10/12/24 Opened on 10/12/24

Cooler unpacked by: JF

FedEx. 1st Grd Exp UPS FAS Waybond Client Drop Off Eurofins Courier Other

Receipt After-hours. Drop-off Date/Time Storage Location

Eurofins Cooler # 2C Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 17 (CF +0.1 °C) Observed Cooler Temp 1.1 °C Corrected Cooler Temp 1.2 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3 Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5 Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7 Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	Yes	No
11 Sufficient quantity received to perform indicated analyses?	Yes	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC447997
14 Were VOAs on the COC?	Yes	No
15 Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	No NA
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes	No
17 Was a LL Hg or Me Hg trip blank present?	Yes	No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

W-48-89 labelled as W-49-29, logging per COC.
received a 250 Amber glass - HCl bottle ID W-108-20
logging but, 7116124 10 45
placing ^ sample on hold

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container
Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory
Time preserved Preservative(s) added/Lot number(s)

VOA Sample Preservation - Date/Time VOAs Frozen.

10/12/2024

Login Container Summary Report

240-212959

10/25/2024

Temperature readings _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
W-105-20	240-212959-A-1	Amber Glass 250mL - hydrochloric acid				
PW-1R-12	240-212959-A-2	Voa Vial 40ml - Hydrochloric Acid				
PW-1R-12	240-212959-B-2	Voa Vial 40ml - Hydrochloric Acid				
PW-1R-12	240-212959-C-2	Voa Vial 40ml - Hydrochloric Acid				
PW-1R-12	240-212959-D-2	Voa Vial 40ml - Hydrochloric Acid				
PW-1R-12	240-212959-E-2	Voa Vial 40ml - Hydrochloric Acid				
PW-1R-12	240-212959-F-2	Voa Vial 40ml - Hydrochloric Acid				
PW-1R-12	240-212959-G-2	Amber Glass 250mL - hydrochloric acid				
PW-3R-12	240-212959-A-3	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-212959-B-3	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-212959-C-3	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-212959-D-3	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-212959-E-3	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-212959-F-3	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-212959-G-3	Amber Glass 250mL - hydrochloric acid				
W-106-20	240-212959-A-4	Amber Glass 250mL - hydrochloric acid				
W-107-20	240-212959-A-5	Amber Glass 250mL - hydrochloric acid				
W-68-90	240-212959-A-6	Amber Glass 250mL - hydrochloric acid				
W-92-92	240-212959-A-7	Voa Vial 40ml - Hydrochloric Acid				
W-92-92	240-212959-B-7	Voa Vial 40ml - Hydrochloric Acid				
W-92-92	240-212959-C-7	Voa Vial 40ml - Hydrochloric Acid				
W-92-92	240-212959-D-7	Voa Vial 40ml - Hydrochloric Acid				
W-92-92	240-212959-E-7	Voa Vial 40ml - Hydrochloric Acid				
W-92-92	240-212959-F-7	Voa Vial 40ml - Hydrochloric Acid				
W-108-20	240-212959-A-8	Amber Glass 250mL - hydrochloric acid				
W-48-89	240-212959-A-9	Amber Glass 250mL - hydrochloric acid				
W-90-92	240-212959-A-10	Voa Vial 40ml - Hydrochloric Acid				
W-90-92	240-212959-B-10	Voa Vial 40ml - Hydrochloric Acid				
W-90-92	240-212959-C-10	Voa Vial 40ml - Hydrochloric Acid				
W-90-92	240-212959-D-10	Voa Vial 40ml - Hydrochloric Acid				
W-90-92	240-212959-E-10	Voa Vial 40ml - Hydrochloric Acid				
W-90-92	240-212959-F-10	Voa Vial 40ml - Hydrochloric Acid				
W-99-93	240-212959-A-11	Voa Vial 40ml - Hydrochloric Acid				
W-99-93	240-212959-B-11	Voa Vial 40ml - Hydrochloric Acid				
W-99-93	240-212959-C-11	Voa Vial 40ml - Hydrochloric Acid				

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
W-99-93	240-212959-D-11	Voa Vial 40ml - Hydrochloric Acid				
W-99-93	240-212959-E-11	Voa Vial 40ml - Hydrochloric Acid				
W-99-93	240-212959-F-11	Voa Vial 40ml - Hydrochloric Acid				

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

240-212959 Chain of Custody

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Brooks, Kris M		COC No: 240-192075.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: Michigan	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note)		Job #: 240-212959-1
Address: 530 Community Drive, Suite 11,	Due Date Requested: 10/28/2024			Preservation Codes: -
City: South Burlington	TAT Requested (days):			
State, Zip: VT, 05403				
Phone: 802-660-1990(Tel) 802-660-1919(Fax)	PO #:			
Email:	WO #:			
Project Name: Ann Arbor Landfill 2 Year GW & WW Prog.	Project #: 24027566			
Site	SSOW#:			Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	522/522_CWA_Prep 1,4 Dioxane (GC/MS SIM)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
W-105-20 (240-212959-1)	10/8/24	15:55 Eastern	G	Water			X	1	
PW-1R-12 (240-212959-2)	10/9/24	10:15 Eastern	G	Water			X	1	
PW-3R-12 (240-212959-3)	10/9/24	12:45 Eastern	G	Water			X	1	
W-106-20 (240-212959-4)	10/9/24	16:15 Eastern	G	Water			X	1	
W-107-20 (240-212959-5)	10/9/24	17.15 Eastern	G	Water			X	1	
W-68-90 (240-212959-6)	10/10/24	10:45 Eastern	G	Water			X	1	
W-108-20 (240-212959-8)	10/10/24	14:55 Eastern	G	Water			X	1	
W-48-89 (240-212959-9)	10/10/24	15:10 Eastern	G	Water			X	1	

Note Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested. I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
JESSICA RIGDON	10-14-24 1500	ETNC		10/15/24 1030	ETKBUF
Relinquished by:	Date/Time	Company	Received by:	Date/Time.	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 05/06/2024

Part # 159470-434 MTW EXP 06/25

eurofins | Environment Testing TestAmerica

ORIGIN ID:CAKA (330) 312-0176
LANCE HERSHMAN
EUROFINS TESTAMERICA BARBERTON
180 S VAN BUREN

BARBERTON, OH 44203
UNITED STATES US

SHIP DATE: 14OCT24
ACTWGT: 51.90 LB
CAD: 0792304/CAFE3855

BILL SENDER

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
530 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 660-1990
PO: YES

REF: S240-126325

FedEx Express

FedEx
TRK# 0201 7415 6795 4361

TUE - 15 OCT AA
PRIORITY OVERNIGHT

NX BTVA

05403
VT-US
BTV

5780739 15Oct 00:47 INDHU 577G4/7DE3/5FE6

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 240-212956-1

Login Number: 212959
List Number: 2
Creator: Reynolds, Jamie K

List Source: Eurofins Burlington
List Creation: 10/15/24 02:34 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.9ºC
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Alison Rauss
Tetra Tech GEO
1136 Oak Valley Dr.
Suite 100
Ann Arbor, Michigan 48108

Generated 10/24/2024 4:08:53 AM

JOB DESCRIPTION

Ann Arbor Landfill 2 Year GW & WW Prog.

JOB NUMBER

240-213071-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
10/24/2024 4:08:53 AM

Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Method Summary 6
Sample Summary 7
Detection Summary 8
Client Sample Results 9
Surrogate Summary 25
QC Sample Results 26
QC Association Summary 36
Lab Chronicle 37
Certification Summary 39
Chain of Custody 40
Receipt Checklists 48

Definitions/Glossary

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 240-213071-1 — Eurofins Cleveland

Job Narrative
240-213071-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/15/2024 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.0°C, 2.4°C and 2.6°C.

Receipt Exceptions
The following sample W-85-92 10/11/24 @ 10:10 was listed on the Chain of Custody (COC); however, no samples were received: W-100-93 (240-213071-1), W-94-92 (240-213071-2), W-47-89 (240-213071-3), W-88-92 (240-213071-4), W-87-92 (240-213071-5), W-84-92 (240-213071-6), W-96-92 (240-213071-7) and TRIP BLANK (240-213071-9).

GC/MS VOA
Method 8260D: The following sample(s) was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The samples were analyzed within the 7-day holding time specified for unpreserved samples: W-100-93 (240-213071-1), W-94-92 (240-213071-2), W-47-89 (240-213071-3), W-88-92 (240-213071-4), W-87-92 (240-213071-5), W-84-92 (240-213071-6) and W-96-92 (240-213071-7).

Method 8260D: The laboratory control sample (LCS) for analytical batch 240-631098 recovered outside control limits for the following analytes: Bromomethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-631098 was outside the method criteria for the following analyte(s): Chloroethane, Chloromethane, Dichlorodifluoromethane and trans-1,4-Dichloro-2-butene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-631799 was outside the method criteria for the following analyte(s): Bromoform, Chloroethane, Chloromethane, Iodomethane, n-Butylbenzene and Chlorodibromomethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 522: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of 6: W-47-89 (240-213071-3). The sample(s) was preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CLE
522	1,4 Dioxane (GC/MS SIM)	EPA	EET BUR
5030C	Purge and Trap	SW846	EET CLE
522	Solid-Phase Extraction (SPE)	EPA	EET BUR

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET BUR = Eurofins Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-213071-1	W-100-93	Water	10/11/24 11:55	10/15/24 09:45
240-213071-2	W-94-92	Water	10/11/24 12:15	10/15/24 09:45
240-213071-3	W-47-89	Water	10/11/24 14:05	10/15/24 09:45
240-213071-4	W-88-92	Water	10/11/24 14:55	10/15/24 09:45
240-213071-5	W-87-92	Water	10/11/24 15:35	10/15/24 09:45
240-213071-6	W-84-92	Water	10/11/24 16:35	10/15/24 09:45
240-213071-7	W-96-92	Water	10/11/24 17:00	10/15/24 09:45
240-213071-9	TRIP BLANK	Water	10/11/24 00:00	10/15/24 09:45

Detection Summary

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-100-93 — Lab Sample ID: 240-213071-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	28		10		ug/L	1		8260D	Total/NA

Client Sample ID: W-94-92 — Lab Sample ID: 240-213071-2

No Detections.

Client Sample ID: W-47-89 — Lab Sample ID: 240-213071-3

No Detections.

Client Sample ID: W-88-92 — Lab Sample ID: 240-213071-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	38		1.0		ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	8.2		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride	60		1.0		ug/L	1		8260D	Total/NA

Client Sample ID: W-87-92 — Lab Sample ID: 240-213071-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Ethyl ether	2.2		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride	20		1.0		ug/L	1		8260D	Total/NA
1,4-Dioxane	38		1.0		ug/L	5		522	Total/NA

Client Sample ID: W-84-92 — Lab Sample ID: 240-213071-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Ethyl ether	3.1		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride	1.4		1.0		ug/L	1		8260D	Total/NA

Client Sample ID: W-96-92 — Lab Sample ID: 240-213071-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	12		10		ug/L	1		8260D	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-213071-9

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cleveland

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-100-93
Lab Sample ID: 240-213071-1
Date Collected: 10/11/24 11:55
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 03:07	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/17/24 03:07	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 03:07	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/17/24 03:07	1
1,1-Dichloroethane	ND		1.0		ug/L			10/17/24 03:07	1
1,1-Dichloroethene	ND		1.0		ug/L			10/17/24 03:07	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/17/24 03:07	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/17/24 03:07	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/17/24 03:07	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/17/24 03:07	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/17/24 03:07	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/17/24 03:07	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/17/24 03:07	1
1,2-Dichloroethane	ND		1.0		ug/L			10/17/24 03:07	1
1,2-Dichloropropane	ND		1.0		ug/L			10/17/24 03:07	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/17/24 03:07	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/17/24 03:07	1
1,4-Dichlorobenzene	ND	F1	1.0		ug/L			10/17/24 03:07	1
2-Hexanone	ND		10		ug/L			10/17/24 03:07	1
2-Methylnaphthalene	ND	F1	5.0		ug/L			10/17/24 03:07	1
Chlorobromomethane	ND		1.0		ug/L			10/17/24 03:07	1
Acetone	**28**		10		ug/L			10/17/24 03:07	1
Acrylonitrile	ND		20		ug/L			10/17/24 03:07	1
Benzene	ND		1.0		ug/L			10/17/24 03:07	1
Bromoform	ND		1.0		ug/L			10/17/24 03:07	1
Bromomethane	ND	*+	1.0		ug/L			10/17/24 03:07	1
Carbon disulfide	ND		5.0		ug/L			10/17/24 03:07	1
Carbon tetrachloride	ND		1.0		ug/L			10/17/24 03:07	1
Chlorobenzene	ND		1.0		ug/L			10/17/24 03:07	1
Chloroethane	ND		1.0		ug/L			10/17/24 03:07	1
Chloroform	ND		1.0		ug/L			10/17/24 03:07	1
Chloromethane	ND		1.0		ug/L			10/17/24 03:07	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/17/24 03:07	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 03:07	1
Dibromomethane	ND		1.0		ug/L			10/17/24 03:07	1
Dichlorobromomethane	ND		1.0		ug/L			10/17/24 03:07	1
Dichlorodifluoromethane	ND	F2	1.0		ug/L			10/17/24 03:07	1
Ethyl ether	ND		1.0		ug/L			10/17/24 03:07	1
Ethylbenzene	ND		1.0		ug/L			10/17/24 03:07	1
1,2-Dibromoethane	ND		1.0		ug/L			10/17/24 03:07	1
Iodomethane	ND		1.0		ug/L			10/17/24 03:07	1
Naphthalene	ND		1.0		ug/L			10/17/24 03:07	1
n-Butylbenzene	ND		1.0		ug/L			10/17/24 03:07	1
Isopropylbenzene	ND		1.0		ug/L			10/17/24 03:07	1
N-Propylbenzene	ND		1.0		ug/L			10/17/24 03:07	1
2-Butanone (MEK)	ND		10		ug/L			10/17/24 03:07	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/17/24 03:07	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/17/24 03:07	1
Methylene Chloride	ND		5.0		ug/L			10/17/24 03:07	1

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-100-93
Lab Sample ID: 240-213071-1
Date Collected: 10/11/24 11:55
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/17/24 03:07	1
Tetrachloroethene	ND		1.0		ug/L			10/17/24 03:07	1
Toluene	ND		1.0		ug/L			10/17/24 03:07	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/17/24 03:07	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 03:07	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/17/24 03:07	1
Trichloroethene	ND	F2	1.0		ug/L			10/17/24 03:07	1
Trichlorofluoromethane	ND	F2	1.0		ug/L			10/17/24 03:07	1
Vinyl chloride	ND		1.0		ug/L			10/17/24 03:07	1
Xylenes, Total	ND		2.0		ug/L			10/17/24 03:07	1
Chlorodibromomethane	ND		1.0		ug/L			10/17/24 03:07	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/17/24 03:07*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*62 - 137*		*10/17/24 03:07*	*1*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*		*10/17/24 03:07*	*1*
Toluene-d8 (Surr)	*104*		*78 - 122*		*10/17/24 03:07*	*1*
Dibromofluoromethane (Surr)	*102*		*73 - 120*		*10/17/24 03:07*	*1*

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-94-92
Lab Sample ID: 240-213071-2
Date Collected: 10/11/24 12:15
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 03:30	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/17/24 03:30	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 03:30	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/17/24 03:30	1
1,1-Dichloroethane	ND		1.0		ug/L			10/17/24 03:30	1
1,1-Dichloroethene	ND		1.0		ug/L			10/17/24 03:30	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/17/24 03:30	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/17/24 03:30	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/17/24 03:30	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/17/24 03:30	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/17/24 03:30	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/17/24 03:30	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/17/24 03:30	1
1,2-Dichloroethane	ND		1.0		ug/L			10/17/24 03:30	1
1,2-Dichloropropane	ND		1.0		ug/L			10/17/24 03:30	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/17/24 03:30	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/17/24 03:30	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/17/24 03:30	1
2-Hexanone	ND		10		ug/L			10/17/24 03:30	1
2-Methylnaphthalene	ND		5.0		ug/L			10/17/24 03:30	1
Chlorobromomethane	ND		1.0		ug/L			10/17/24 03:30	1
Acetone	ND		10		ug/L			10/17/24 03:30	1
Acrylonitrile	ND		20		ug/L			10/17/24 03:30	1
Benzene	ND		1.0		ug/L			10/17/24 03:30	1
Bromoform	ND		1.0		ug/L			10/17/24 03:30	1
Bromomethane	ND	*+	1.0		ug/L			10/17/24 03:30	1
Carbon disulfide	ND		5.0		ug/L			10/17/24 03:30	1
Carbon tetrachloride	ND		1.0		ug/L			10/17/24 03:30	1
Chlorobenzene	ND		1.0		ug/L			10/17/24 03:30	1
Chloroethane	ND		1.0		ug/L			10/17/24 03:30	1
Chloroform	ND		1.0		ug/L			10/17/24 03:30	1
Chloromethane	ND		1.0		ug/L			10/17/24 03:30	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/17/24 03:30	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 03:30	1
Dibromomethane	ND		1.0		ug/L			10/17/24 03:30	1
Dichlorobromomethane	ND		1.0		ug/L			10/17/24 03:30	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/17/24 03:30	1
Ethyl ether	ND		1.0		ug/L			10/17/24 03:30	1
Ethylbenzene	ND		1.0		ug/L			10/17/24 03:30	1
1,2-Dibromoethane	ND		1.0		ug/L			10/17/24 03:30	1
Iodomethane	ND		1.0		ug/L			10/17/24 03:30	1
Naphthalene	ND		1.0		ug/L			10/17/24 03:30	1
n-Butylbenzene	ND		1.0		ug/L			10/17/24 03:30	1
Isopropylbenzene	ND		1.0		ug/L			10/17/24 03:30	1
N-Propylbenzene	ND		1.0		ug/L			10/17/24 03:30	1
2-Butanone (MEK)	ND		10		ug/L			10/17/24 03:30	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/17/24 03:30	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/17/24 03:30	1
Methylene Chloride	ND		5.0		ug/L			10/17/24 03:30	1

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-94-92
Lab Sample ID: 240-213071-2
Date Collected: 10/11/24 12:15
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/17/24 03:30	1
Tetrachloroethene	ND		1.0		ug/L			10/17/24 03:30	1
Toluene	ND		1.0		ug/L			10/17/24 03:30	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/17/24 03:30	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 03:30	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/17/24 03:30	1
Trichloroethene	ND		1.0		ug/L			10/17/24 03:30	1
Trichlorofluoromethane	ND		1.0		ug/L			10/17/24 03:30	1
Vinyl chloride	ND		1.0		ug/L			10/17/24 03:30	1
Xylenes, Total	ND		2.0		ug/L			10/17/24 03:30	1
Chlorodibromomethane	ND		1.0		ug/L			10/17/24 03:30	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/17/24 03:30*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*117*		*62 - 137*		*10/17/24 03:30*	*1*
4-Bromofluorobenzene (Surr)	*103*		*56 - 136*		*10/17/24 03:30*	*1*
Toluene-d8 (Surr)	*104*		*78 - 122*		*10/17/24 03:30*	*1*
Dibromofluoromethane (Surr)	*103*		*73 - 120*		*10/17/24 03:30*	*1*

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-47-89
Lab Sample ID: 240-213071-3
Date Collected: 10/11/24 14:05
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 03:53	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/17/24 03:53	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 03:53	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/17/24 03:53	1
1,1-Dichloroethane	ND		1.0		ug/L			10/17/24 03:53	1
1,1-Dichloroethene	ND		1.0		ug/L			10/17/24 03:53	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/17/24 03:53	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/17/24 03:53	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/17/24 03:53	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/17/24 03:53	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/17/24 03:53	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/17/24 03:53	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/17/24 03:53	1
1,2-Dichloroethane	ND		1.0		ug/L			10/17/24 03:53	1
1,2-Dichloropropane	ND		1.0		ug/L			10/17/24 03:53	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/17/24 03:53	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/17/24 03:53	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/17/24 03:53	1
2-Hexanone	ND		10		ug/L			10/17/24 03:53	1
2-Methylnaphthalene	ND		5.0		ug/L			10/17/24 03:53	1
Chlorobromomethane	ND		1.0		ug/L			10/17/24 03:53	1
Acetone	ND		10		ug/L			10/17/24 03:53	1
Acrylonitrile	ND		20		ug/L			10/17/24 03:53	1
Benzene	ND		1.0		ug/L			10/17/24 03:53	1
Bromoform	ND		1.0		ug/L			10/17/24 03:53	1
Bromomethane	ND	*+	1.0		ug/L			10/17/24 03:53	1
Carbon disulfide	ND		5.0		ug/L			10/17/24 03:53	1
Carbon tetrachloride	ND		1.0		ug/L			10/17/24 03:53	1
Chlorobenzene	ND		1.0		ug/L			10/17/24 03:53	1
Chloroethane	ND		1.0		ug/L			10/17/24 03:53	1
Chloroform	ND		1.0		ug/L			10/17/24 03:53	1
Chloromethane	ND		1.0		ug/L			10/17/24 03:53	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/17/24 03:53	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 03:53	1
Dibromomethane	ND		1.0		ug/L			10/17/24 03:53	1
Dichlorobromomethane	ND		1.0		ug/L			10/17/24 03:53	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/17/24 03:53	1
Ethyl ether	ND		1.0		ug/L			10/17/24 03:53	1
Ethylbenzene	ND		1.0		ug/L			10/17/24 03:53	1
1,2-Dibromoethane	ND		1.0		ug/L			10/17/24 03:53	1
Iodomethane	ND		1.0		ug/L			10/17/24 03:53	1
Naphthalene	ND		1.0		ug/L			10/17/24 03:53	1
n-Butylbenzene	ND		1.0		ug/L			10/17/24 03:53	1
Isopropylbenzene	ND		1.0		ug/L			10/17/24 03:53	1
N-Propylbenzene	ND		1.0		ug/L			10/17/24 03:53	1
2-Butanone (MEK)	ND		10		ug/L			10/17/24 03:53	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/17/24 03:53	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/17/24 03:53	1
Methylene Chloride	ND		5.0		ug/L			10/17/24 03:53	1

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-47-89
Lab Sample ID: 240-213071-3
Date Collected: 10/11/24 14:05
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/17/24 03:53	1
Tetrachloroethene	ND		1.0		ug/L			10/17/24 03:53	1
Toluene	ND		1.0		ug/L			10/17/24 03:53	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/17/24 03:53	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 03:53	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/17/24 03:53	1
Trichloroethene	ND		1.0		ug/L			10/17/24 03:53	1
Trichlorofluoromethane	ND		1.0		ug/L			10/17/24 03:53	1
Vinyl chloride	ND		1.0		ug/L			10/17/24 03:53	1
Xylenes, Total	ND		2.0		ug/L			10/17/24 03:53	1
Chlorodibromomethane	ND		1.0		ug/L			10/17/24 03:53	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/17/24 03:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*62 - 137*		*10/17/24 03:53*	*1*
4-Bromofluorobenzene (Surr)	*106*		*56 - 136*		*10/17/24 03:53*	*1*
Toluene-d8 (Surr)	*105*		*78 - 122*		*10/17/24 03:53*	*1*
Dibromofluoromethane (Surr)	*101*		*73 - 120*		*10/17/24 03:53*	*1*

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/18/24 10:00	10/21/24 20:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*94*		*46 - 130*	*10/18/24 10:00*	*10/21/24 20:32*	*1*

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-88-92
Lab Sample ID: 240-213071-4
Date Collected: 10/11/24 14:55
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 04:16	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/17/24 04:16	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 04:16	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/17/24 04:16	1
1,1-Dichloroethane	ND		1.0		ug/L			10/17/24 04:16	1
1,1-Dichloroethene	ND		1.0		ug/L			10/17/24 04:16	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/17/24 04:16	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/17/24 04:16	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/17/24 04:16	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/17/24 04:16	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/17/24 04:16	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/17/24 04:16	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/17/24 04:16	1
1,2-Dichloroethane	ND		1.0		ug/L			10/17/24 04:16	1
1,2-Dichloropropane	ND		1.0		ug/L			10/17/24 04:16	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/17/24 04:16	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/17/24 04:16	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/17/24 04:16	1
2-Hexanone	ND		10		ug/L			10/17/24 04:16	1
2-Methylnaphthalene	ND		5.0		ug/L			10/17/24 04:16	1
Chlorobromomethane	ND		1.0		ug/L			10/17/24 04:16	1
Acetone	ND		10		ug/L			10/17/24 04:16	1
Acrylonitrile	ND		20		ug/L			10/17/24 04:16	1
Benzene	ND		1.0		ug/L			10/17/24 04:16	1
Bromoform	ND		1.0		ug/L			10/17/24 04:16	1
Bromomethane	ND	*+	1.0		ug/L			10/17/24 04:16	1
Carbon disulfide	ND		5.0		ug/L			10/17/24 04:16	1
Carbon tetrachloride	ND		1.0		ug/L			10/17/24 04:16	1
Chlorobenzene	ND		1.0		ug/L			10/17/24 04:16	1
Chloroethane	ND		1.0		ug/L			10/17/24 04:16	1
Chloroform	ND		1.0		ug/L			10/17/24 04:16	1
Chloromethane	ND		1.0		ug/L			10/17/24 04:16	1
cis-1,2-Dichloroethene	**38**		1.0		ug/L			10/17/24 04:16	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 04:16	1
Dibromomethane	ND		1.0		ug/L			10/17/24 04:16	1
Dichlorobromomethane	ND		1.0		ug/L			10/17/24 04:16	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/17/24 04:16	1
Ethyl ether	ND		1.0		ug/L			10/17/24 04:16	1
Ethylbenzene	ND		1.0		ug/L			10/17/24 04:16	1
1,2-Dibromoethane	ND		1.0		ug/L			10/17/24 04:16	1
Iodomethane	ND		1.0		ug/L			10/17/24 04:16	1
Naphthalene	ND		1.0		ug/L			10/17/24 04:16	1
n-Butylbenzene	ND		1.0		ug/L			10/17/24 04:16	1
Isopropylbenzene	ND		1.0		ug/L			10/17/24 04:16	1
N-Propylbenzene	ND		1.0		ug/L			10/17/24 04:16	1
2-Butanone (MEK)	ND		10		ug/L			10/17/24 04:16	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/17/24 04:16	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/17/24 04:16	1
Methylene Chloride	ND		5.0		ug/L			10/17/24 04:16	1

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-88-92
Lab Sample ID: 240-213071-4
Date Collected: 10/11/24 14:55
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/17/24 04:16	1
Tetrachloroethene	ND		1.0		ug/L			10/17/24 04:16	1
Toluene	ND		1.0		ug/L			10/17/24 04:16	1
trans-1,2-Dichloroethene	**8.2**		1.0		ug/L			10/17/24 04:16	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 04:16	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/17/24 04:16	1
Trichloroethene	ND		1.0		ug/L			10/17/24 04:16	1
Trichlorofluoromethane	ND		1.0		ug/L			10/17/24 04:16	1
Vinyl chloride	**60**		1.0		ug/L			10/17/24 04:16	1
Xylenes, Total	ND		2.0		ug/L			10/17/24 04:16	1
Chlorodibromomethane	ND		1.0		ug/L			10/17/24 04:16	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/17/24 04:16*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*62 - 137*		*10/17/24 04:16*	*1*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*		*10/17/24 04:16*	*1*
Toluene-d8 (Surr)	*106*		*78 - 122*		*10/17/24 04:16*	*1*
Dibromofluoromethane (Surr)	*100*		*73 - 120*		*10/17/24 04:16*	*1*

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-87-92
Lab Sample ID: 240-213071-5
Date Collected: 10/11/24 15:35
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 04:39	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/17/24 04:39	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 04:39	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/17/24 04:39	1
1,1-Dichloroethane	ND		1.0		ug/L			10/17/24 04:39	1
1,1-Dichloroethene	ND		1.0		ug/L			10/17/24 04:39	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/17/24 04:39	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/17/24 04:39	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/17/24 04:39	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/17/24 04:39	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/17/24 04:39	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/17/24 04:39	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/17/24 04:39	1
1,2-Dichloroethane	ND		1.0		ug/L			10/17/24 04:39	1
1,2-Dichloropropane	ND		1.0		ug/L			10/17/24 04:39	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/17/24 04:39	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/17/24 04:39	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/17/24 04:39	1
2-Hexanone	ND		10		ug/L			10/17/24 04:39	1
2-Methylnaphthalene	ND		5.0		ug/L			10/17/24 04:39	1
Chlorobromomethane	ND		1.0		ug/L			10/17/24 04:39	1
Acetone	ND		10		ug/L			10/17/24 04:39	1
Acrylonitrile	ND		20		ug/L			10/17/24 04:39	1
Benzene	ND		1.0		ug/L			10/17/24 04:39	1
Bromoform	ND		1.0		ug/L			10/17/24 04:39	1
Bromomethane	ND	*+	1.0		ug/L			10/17/24 04:39	1
Carbon disulfide	ND		5.0		ug/L			10/17/24 04:39	1
Carbon tetrachloride	ND		1.0		ug/L			10/17/24 04:39	1
Chlorobenzene	ND		1.0		ug/L			10/17/24 04:39	1
Chloroethane	ND		1.0		ug/L			10/17/24 04:39	1
Chloroform	ND		1.0		ug/L			10/17/24 04:39	1
Chloromethane	ND		1.0		ug/L			10/17/24 04:39	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/17/24 04:39	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 04:39	1
Dibromomethane	ND		1.0		ug/L			10/17/24 04:39	1
Dichlorobromomethane	ND		1.0		ug/L			10/17/24 04:39	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/17/24 04:39	1
Ethyl ether	**2.2**		1.0		ug/L			10/17/24 04:39	1
Ethylbenzene	ND		1.0		ug/L			10/17/24 04:39	1
1,2-Dibromoethane	ND		1.0		ug/L			10/17/24 04:39	1
Iodomethane	ND		1.0		ug/L			10/17/24 04:39	1
Naphthalene	ND		1.0		ug/L			10/17/24 04:39	1
n-Butylbenzene	ND		1.0		ug/L			10/17/24 04:39	1
Isopropylbenzene	ND		1.0		ug/L			10/17/24 04:39	1
N-Propylbenzene	ND		1.0		ug/L			10/17/24 04:39	1
2-Butanone (MEK)	ND		10		ug/L			10/17/24 04:39	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/17/24 04:39	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/17/24 04:39	1
Methylene Chloride	ND		5.0		ug/L			10/17/24 04:39	1

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-87-92
Lab Sample ID: 240-213071-5
Date Collected: 10/11/24 15:35
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/17/24 04:39	1
Tetrachloroethene	ND		1.0		ug/L			10/17/24 04:39	1
Toluene	ND		1.0		ug/L			10/17/24 04:39	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/17/24 04:39	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 04:39	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/17/24 04:39	1
Trichloroethene	ND		1.0		ug/L			10/17/24 04:39	1
Trichlorofluoromethane	ND		1.0		ug/L			10/17/24 04:39	1
Vinyl chloride	**20**		1.0		ug/L			10/17/24 04:39	1
Xylenes, Total	ND		2.0		ug/L			10/17/24 04:39	1
Chlorodibromomethane	ND		1.0		ug/L			10/17/24 04:39	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/17/24 04:39*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*62 - 137*		*10/17/24 04:39*	*1*
4-Bromofluorobenzene (Surr)	*103*		*56 - 136*		*10/17/24 04:39*	*1*
Toluene-d8 (Surr)	*106*		*78 - 122*		*10/17/24 04:39*	*1*
Dibromofluoromethane (Surr)	*102*		*73 - 120*		*10/17/24 04:39*	*1*

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**38**		1.0		ug/L		10/18/24 10:00	10/22/24 10:14	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*109*		*46 - 130*	*10/18/24 10:00*	*10/22/24 10:14*	*5*

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-84-92
Lab Sample ID: 240-213071-6
Date Collected: 10/11/24 16:35
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 05:02	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/17/24 05:02	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 05:02	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/17/24 05:02	1
1,1-Dichloroethane	ND		1.0		ug/L			10/17/24 05:02	1
1,1-Dichloroethene	ND		1.0		ug/L			10/17/24 05:02	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/17/24 05:02	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/17/24 05:02	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/17/24 05:02	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/17/24 05:02	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/17/24 05:02	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/17/24 05:02	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/17/24 05:02	1
1,2-Dichloroethane	ND		1.0		ug/L			10/17/24 05:02	1
1,2-Dichloropropane	ND		1.0		ug/L			10/17/24 05:02	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/17/24 05:02	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/17/24 05:02	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/17/24 05:02	1
2-Hexanone	ND		10		ug/L			10/17/24 05:02	1
2-Methylnaphthalene	ND		5.0		ug/L			10/17/24 05:02	1
Chlorobromomethane	ND		1.0		ug/L			10/17/24 05:02	1
Acetone	ND		10		ug/L			10/17/24 05:02	1
Acrylonitrile	ND		20		ug/L			10/17/24 05:02	1
Benzene	ND		1.0		ug/L			10/17/24 05:02	1
Bromoform	ND		1.0		ug/L			10/17/24 05:02	1
Bromomethane	ND	*+	1.0		ug/L			10/17/24 05:02	1
Carbon disulfide	ND		5.0		ug/L			10/17/24 05:02	1
Carbon tetrachloride	ND		1.0		ug/L			10/17/24 05:02	1
Chlorobenzene	ND		1.0		ug/L			10/17/24 05:02	1
Chloroethane	ND		1.0		ug/L			10/17/24 05:02	1
Chloroform	ND		1.0		ug/L			10/17/24 05:02	1
Chloromethane	ND		1.0		ug/L			10/17/24 05:02	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/17/24 05:02	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 05:02	1
Dibromomethane	ND		1.0		ug/L			10/17/24 05:02	1
Dichlorobromomethane	ND		1.0		ug/L			10/17/24 05:02	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/17/24 05:02	1
Ethyl ether	**3.1**		1.0		ug/L			10/17/24 05:02	1
Ethylbenzene	ND		1.0		ug/L			10/17/24 05:02	1
1,2-Dibromoethane	ND		1.0		ug/L			10/17/24 05:02	1
Iodomethane	ND		1.0		ug/L			10/17/24 05:02	1
Naphthalene	ND		1.0		ug/L			10/17/24 05:02	1
n-Butylbenzene	ND		1.0		ug/L			10/17/24 05:02	1
Isopropylbenzene	ND		1.0		ug/L			10/17/24 05:02	1
N-Propylbenzene	ND		1.0		ug/L			10/17/24 05:02	1
2-Butanone (MEK)	ND		10		ug/L			10/17/24 05:02	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/17/24 05:02	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/17/24 05:02	1
Methylene Chloride	ND		5.0		ug/L			10/17/24 05:02	1

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-84-92
Lab Sample ID: 240-213071-6
Date Collected: 10/11/24 16:35
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/17/24 05:02	1
Tetrachloroethene	ND		1.0		ug/L			10/17/24 05:02	1
Toluene	ND		1.0		ug/L			10/17/24 05:02	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/17/24 05:02	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 05:02	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/17/24 05:02	1
Trichloroethene	ND		1.0		ug/L			10/17/24 05:02	1
Trichlorofluoromethane	ND		1.0		ug/L			10/17/24 05:02	1
Vinyl chloride	**1.4**		1.0		ug/L			10/17/24 05:02	1
Xylenes, Total	ND		2.0		ug/L			10/17/24 05:02	1
Chlorodibromomethane	ND		1.0		ug/L			10/17/24 05:02	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/17/24 05:02*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*62 - 137*		*10/17/24 05:02*	*1*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*		*10/17/24 05:02*	*1*
Toluene-d8 (Surr)	*105*		*78 - 122*		*10/17/24 05:02*	*1*
Dibromofluoromethane (Surr)	*107*		*73 - 120*		*10/17/24 05:02*	*1*

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-96-92
Lab Sample ID: 240-213071-7
Date Collected: 10/11/24 17:00
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 05:25	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/17/24 05:25	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/17/24 05:25	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/17/24 05:25	1
1,1-Dichloroethane	ND		1.0		ug/L			10/17/24 05:25	1
1,1-Dichloroethene	ND		1.0		ug/L			10/17/24 05:25	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/17/24 05:25	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/17/24 05:25	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/17/24 05:25	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/17/24 05:25	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/17/24 05:25	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/17/24 05:25	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/17/24 05:25	1
1,2-Dichloroethane	ND		1.0		ug/L			10/17/24 05:25	1
1,2-Dichloropropane	ND		1.0		ug/L			10/17/24 05:25	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/17/24 05:25	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/17/24 05:25	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/17/24 05:25	1
2-Hexanone	ND		10		ug/L			10/17/24 05:25	1
2-Methylnaphthalene	ND		5.0		ug/L			10/17/24 05:25	1
Chlorobromomethane	ND		1.0		ug/L			10/17/24 05:25	1
Acetone	**12**		10		ug/L			10/17/24 05:25	1
Acrylonitrile	ND		20		ug/L			10/17/24 05:25	1
Benzene	ND		1.0		ug/L			10/17/24 05:25	1
Bromoform	ND		1.0		ug/L			10/17/24 05:25	1
Bromomethane	ND	*+	1.0		ug/L			10/17/24 05:25	1
Carbon disulfide	ND		5.0		ug/L			10/17/24 05:25	1
Carbon tetrachloride	ND		1.0		ug/L			10/17/24 05:25	1
Chlorobenzene	ND		1.0		ug/L			10/17/24 05:25	1
Chloroethane	ND		1.0		ug/L			10/17/24 05:25	1
Chloroform	ND		1.0		ug/L			10/17/24 05:25	1
Chloromethane	ND		1.0		ug/L			10/17/24 05:25	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/17/24 05:25	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 05:25	1
Dibromomethane	ND		1.0		ug/L			10/17/24 05:25	1
Dichlorobromomethane	ND		1.0		ug/L			10/17/24 05:25	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/17/24 05:25	1
Ethyl ether	ND		1.0		ug/L			10/17/24 05:25	1
Ethylbenzene	ND		1.0		ug/L			10/17/24 05:25	1
1,2-Dibromoethane	ND		1.0		ug/L			10/17/24 05:25	1
Iodomethane	ND		1.0		ug/L			10/17/24 05:25	1
Naphthalene	ND		1.0		ug/L			10/17/24 05:25	1
n-Butylbenzene	ND		1.0		ug/L			10/17/24 05:25	1
Isopropylbenzene	ND		1.0		ug/L			10/17/24 05:25	1
N-Propylbenzene	ND		1.0		ug/L			10/17/24 05:25	1
2-Butanone (MEK)	ND		10		ug/L			10/17/24 05:25	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/17/24 05:25	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/17/24 05:25	1
Methylene Chloride	ND		5.0		ug/L			10/17/24 05:25	1

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-96-92
Lab Sample ID: 240-213071-7
Date Collected: 10/11/24 17:00
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/17/24 05:25	1
Tetrachloroethene	ND		1.0		ug/L			10/17/24 05:25	1
Toluene	ND		1.0		ug/L			10/17/24 05:25	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/17/24 05:25	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/17/24 05:25	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/17/24 05:25	1
Trichloroethene	ND		1.0		ug/L			10/17/24 05:25	1
Trichlorofluoromethane	ND		1.0		ug/L			10/17/24 05:25	1
Vinyl chloride	ND		1.0		ug/L			10/17/24 05:25	1
Xylenes, Total	ND		2.0		ug/L			10/17/24 05:25	1
Chlorodibromomethane	ND		1.0		ug/L			10/17/24 05:25	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/17/24 05:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*62 - 137*		*10/17/24 05:25*	*1*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*		*10/17/24 05:25*	*1*
Toluene-d8 (Surr)	*107*		*78 - 122*		*10/17/24 05:25*	*1*
Dibromofluoromethane (Surr)	*106*		*73 - 120*		*10/17/24 05:25*	*1*

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-213071-9
Date Collected: 10/11/24 00:00
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 11:54	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/22/24 11:54	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 11:54	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/22/24 11:54	1
1,1-Dichloroethane	ND		1.0		ug/L			10/22/24 11:54	1
1,1-Dichloroethene	ND		1.0		ug/L			10/22/24 11:54	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/22/24 11:54	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/22/24 11:54	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/22/24 11:54	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/22/24 11:54	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/22/24 11:54	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/22/24 11:54	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/22/24 11:54	1
1,2-Dichloroethane	ND		1.0		ug/L			10/22/24 11:54	1
1,2-Dichloropropane	ND		1.0		ug/L			10/22/24 11:54	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/22/24 11:54	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/22/24 11:54	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/22/24 11:54	1
2-Hexanone	ND		10		ug/L			10/22/24 11:54	1
2-Methylnaphthalene	ND		5.0		ug/L			10/22/24 11:54	1
Chlorobromomethane	ND		1.0		ug/L			10/22/24 11:54	1
Acetone	ND		10		ug/L			10/22/24 11:54	1
Acrylonitrile	ND		20		ug/L			10/22/24 11:54	1
Benzene	ND		1.0		ug/L			10/22/24 11:54	1
Bromoform	ND		1.0		ug/L			10/22/24 11:54	1
Bromomethane	ND		1.0		ug/L			10/22/24 11:54	1
Carbon disulfide	ND		5.0		ug/L			10/22/24 11:54	1
Carbon tetrachloride	ND		1.0		ug/L			10/22/24 11:54	1
Chlorobenzene	ND		1.0		ug/L			10/22/24 11:54	1
Chloroethane	ND		1.0		ug/L			10/22/24 11:54	1
Chloroform	ND		1.0		ug/L			10/22/24 11:54	1
Chloromethane	ND		1.0		ug/L			10/22/24 11:54	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 11:54	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 11:54	1
Dibromomethane	ND		1.0		ug/L			10/22/24 11:54	1
Dichlorobromomethane	ND		1.0		ug/L			10/22/24 11:54	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/22/24 11:54	1
Ethyl ether	ND		1.0		ug/L			10/22/24 11:54	1
Ethylbenzene	ND		1.0		ug/L			10/22/24 11:54	1
1,2-Dibromoethane	ND		1.0		ug/L			10/22/24 11:54	1
Iodomethane	ND		1.0		ug/L			10/22/24 11:54	1
Naphthalene	ND		1.0		ug/L			10/22/24 11:54	1
n-Butylbenzene	ND		1.0		ug/L			10/22/24 11:54	1
Isopropylbenzene	ND		1.0		ug/L			10/22/24 11:54	1
N-Propylbenzene	ND		1.0		ug/L			10/22/24 11:54	1
2-Butanone (MEK)	ND		10		ug/L			10/22/24 11:54	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/22/24 11:54	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/22/24 11:54	1
Methylene Chloride	ND		5.0		ug/L			10/22/24 11:54	1

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-213071-9
Date Collected: 10/11/24 00:00
Matrix: Water
Date Received: 10/15/24 09:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/22/24 11:54	1
Tetrachloroethene	ND		1.0		ug/L			10/22/24 11:54	1
Toluene	ND		1.0		ug/L			10/22/24 11:54	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 11:54	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 11:54	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/22/24 11:54	1
Trichloroethene	ND		1.0		ug/L			10/22/24 11:54	1
Trichlorofluoromethane	ND		1.0		ug/L			10/22/24 11:54	1
Vinyl chloride	ND		1.0		ug/L			10/22/24 11:54	1
Xylenes, Total	ND		2.0		ug/L			10/22/24 11:54	1
Chlorodibromomethane	ND		1.0		ug/L			10/22/24 11:54	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*10/22/24 11:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*62 - 137*		*10/22/24 11:54*	*1*
4-Bromofluorobenzene (Surr)	*86*		*56 - 136*		*10/22/24 11:54*	*1*
Toluene-d8 (Surr)	*92*		*78 - 122*		*10/22/24 11:54*	*1*
Dibromofluoromethane (Surr)	*90*		*73 - 120*		*10/22/24 11:54*	*1*

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/18/24 10:00	10/21/24 20:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*97*		*46 - 130*	*10/18/24 10:00*	*10/21/24 20:59*	*1*

Surrogate Summary

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-213071-1	W-100-93	116	102	104	102
240-213071-1 MS	W-100-93	113	116	111	98
240-213071-1 MSD	W-100-93	111	114	111	101
240-213071-2	W-94-92	117	103	104	103
240-213071-3	W-47-89	113	106	105	101
240-213071-4	W-88-92	109	102	106	100
240-213071-5	W-87-92	114	103	106	102
240-213071-6	W-84-92	115	102	105	107
240-213071-7	W-96-92	116	102	107	106
240-213071-9	TRIP BLANK	104	86	92	90
LCS 240-631098/4	Lab Control Sample	111	110	109	98
LCS 240-631098/5	Lab Control Sample	115	105	100	101
LCS 240-631799/9	Lab Control Sample	90	88	88	86
MB 240-631098/7	Method Blank	113	102	104	103
MB 240-631799/10	Method Blank	99	87	92	87

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DXE
Lab Sample ID	Client Sample ID	(46-130)
240-213071-3	W-47-89	94
240-213071-5	W-87-92	109
240-213071-9	TRIP BLANK	97
LLCS 200-209864/2-A	Lab Control Sample	89
MB 200-209864/1-A	Method Blank	79

Surrogate Legend

DXE = 1,4-Dioxane-d8 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-631098/7
Matrix: Water
Analysis Batch: 631098

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/16/24 21:46	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/16/24 21:46	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/16/24 21:46	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/16/24 21:46	1
1,1-Dichloroethane	ND		1.0		ug/L			10/16/24 21:46	1
1,1-Dichloroethene	ND		1.0		ug/L			10/16/24 21:46	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/16/24 21:46	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/16/24 21:46	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/16/24 21:46	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/16/24 21:46	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/16/24 21:46	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/16/24 21:46	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/16/24 21:46	1
1,2-Dichloroethane	ND		1.0		ug/L			10/16/24 21:46	1
1,2-Dichloropropane	ND		1.0		ug/L			10/16/24 21:46	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/16/24 21:46	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/16/24 21:46	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/16/24 21:46	1
2-Hexanone	ND		10		ug/L			10/16/24 21:46	1
2-Methylnaphthalene	ND		5.0		ug/L			10/16/24 21:46	1
Chlorobromomethane	ND		1.0		ug/L			10/16/24 21:46	1
Acetone	ND		10		ug/L			10/16/24 21:46	1
Acrylonitrile	ND		20		ug/L			10/16/24 21:46	1
Benzene	ND		1.0		ug/L			10/16/24 21:46	1
Bromoform	ND		1.0		ug/L			10/16/24 21:46	1
Bromomethane	ND		1.0		ug/L			10/16/24 21:46	1
Carbon disulfide	ND		5.0		ug/L			10/16/24 21:46	1
Carbon tetrachloride	ND		1.0		ug/L			10/16/24 21:46	1
Chlorobenzene	ND		1.0		ug/L			10/16/24 21:46	1
Chloroethane	ND		1.0		ug/L			10/16/24 21:46	1
Chloroform	ND		1.0		ug/L			10/16/24 21:46	1
Chloromethane	ND		1.0		ug/L			10/16/24 21:46	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/16/24 21:46	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/16/24 21:46	1
Dibromomethane	ND		1.0		ug/L			10/16/24 21:46	1
Dichlorobromomethane	ND		1.0		ug/L			10/16/24 21:46	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/16/24 21:46	1
Ethyl ether	ND		1.0		ug/L			10/16/24 21:46	1
Ethylbenzene	ND		1.0		ug/L			10/16/24 21:46	1
1,2-Dibromoethane	ND		1.0		ug/L			10/16/24 21:46	1
Iodomethane	ND		1.0		ug/L			10/16/24 21:46	1
Naphthalene	ND		1.0		ug/L			10/16/24 21:46	1
n-Butylbenzene	ND		1.0		ug/L			10/16/24 21:46	1
Isopropylbenzene	ND		1.0		ug/L			10/16/24 21:46	1
N-Propylbenzene	ND		1.0		ug/L			10/16/24 21:46	1
2-Butanone (MEK)	ND		10		ug/L			10/16/24 21:46	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/16/24 21:46	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/16/24 21:46	1

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

Lab Sample ID: MB 240-631098/7
Matrix: Water
Analysis Batch: 631098

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		5.0		ug/L			10/16/24 21:46	1
Styrene	ND		1.0		ug/L			10/16/24 21:46	1
Tetrachloroethene	ND		1.0		ug/L			10/16/24 21:46	1
Toluene	ND		1.0		ug/L			10/16/24 21:46	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/16/24 21:46	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/16/24 21:46	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/16/24 21:46	1
Trichloroethene	ND		1.0		ug/L			10/16/24 21:46	1
Trichlorofluoromethane	ND		1.0		ug/L			10/16/24 21:46	1
Vinyl chloride	ND		1.0		ug/L			10/16/24 21:46	1
Xylenes, Total	ND		2.0		ug/L			10/16/24 21:46	1
Chlorodibromomethane	ND		1.0		ug/L			10/16/24 21:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*62 - 137*		*10/16/24 21:46*	*1*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*		*10/16/24 21:46*	*1*
Toluene-d8 (Surr)	*104*		*78 - 122*		*10/16/24 21:46*	*1*
Dibromofluoromethane (Surr)	*103*		*73 - 120*		*10/16/24 21:46*	*1*

Lab Sample ID: LCS 240-631098/4
Matrix: Water
Analysis Batch: 631098

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	25.0	25.7		ug/L		103	71 - 124
1,1,1-Trichloroethane	25.0	28.2		ug/L		113	64 - 131
1,1,2,2-Tetrachloroethane	25.0	21.9		ug/L		88	58 - 157
1,1,2-Trichloroethane	25.0	23.3		ug/L		93	70 - 138
1,1-Dichloroethane	25.0	24.7		ug/L		99	72 - 127
1,1-Dichloroethene	25.0	25.4		ug/L		102	63 - 134
1,2,3-Trichlorobenzene	25.0	22.1		ug/L		88	45 - 149
1,2,3-Trichloropropane	25.0	21.7		ug/L		87	57 - 150
1,2,4-Trichlorobenzene	25.0	23.6		ug/L		94	44 - 147
1,2,4-Trimethylbenzene	25.0	24.5		ug/L		98	77 - 129
1,2-Dibromo-3-Chloropropane	25.0	21.0		ug/L		84	53 - 135
1,2-Dichlorobenzene	25.0	23.4		ug/L		94	78 - 120
1,2-Dichloroethane	25.0	28.3		ug/L		113	66 - 128
1,2-Dichloropropane	25.0	25.3		ug/L		101	75 - 133
1,3,5-Trimethylbenzene	25.0	26.1		ug/L		104	75 - 129
1,3-Dichlorobenzene	25.0	25.3		ug/L		101	80 - 120
1,4-Dichlorobenzene	25.0	24.2		ug/L		97	80 - 120
2-Hexanone	50.0	47.0		ug/L		94	43 - 167
Chlorobromomethane	25.0	25.6		ug/L		102	71 - 121
Acetone	50.0	52.7		ug/L		105	50 - 149
Acrylonitrile	250	241		ug/L		96	51 - 161
Benzene	25.0	24.1		ug/L		97	77 - 123
Bromoform	25.0	25.0		ug/L		100	57 - 129
Bromomethane	12.5	19.3	*+	ug/L		155	36 - 142

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

Lab Sample ID: LCS 240-631098/4
Matrix: Water
Analysis Batch: 631098

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon disulfide	25.0	28.8		ug/L		115	43 - 140
Carbon tetrachloride	25.0	28.7		ug/L		115	55 - 137
Chlorobenzene	25.0	23.1		ug/L		92	80 - 121
Chloroethane	12.5	15.3		ug/L		122	38 - 152
Chloroform	25.0	25.1		ug/L		100	74 - 122
Chloromethane	12.5	12.6		ug/L		101	47 - 143
cis-1,2-Dichloroethene	25.0	25.6		ug/L		103	77 - 123
cis-1,3-Dichloropropene	25.0	25.5		ug/L		102	64 - 130
Dibromomethane	25.0	25.7		ug/L		103	67 - 131
Dichlorobromomethane	25.0	23.9		ug/L		95	69 - 126
Dichlorodifluoromethane	12.5	11.3		ug/L		90	34 - 153
Ethyl ether	25.0	25.2		ug/L		101	53 - 151
Ethylbenzene	25.0	24.6		ug/L		99	80 - 121
1,2-Dibromoethane	25.0	24.8		ug/L		99	71 - 134
Iodomethane	25.0	31.8		ug/L		127	39 - 136
Naphthalene	25.0	24.2		ug/L		97	53 - 138
n-Butylbenzene	25.0	27.0		ug/L		108	62 - 139
Isopropylbenzene	25.0	28.7		ug/L		115	74 - 128
N-Propylbenzene	25.0	22.8		ug/L		91	76 - 127
2-Butanone (MEK)	50.0	44.7		ug/L		89	54 - 156
4-Methyl-2-pentanone (MIBK)	50.0	46.0		ug/L		92	46 - 158
Methyl tert-butyl ether	25.0	27.6		ug/L		111	65 - 126
Methylene Chloride	25.0	27.2		ug/L		109	71 - 125
Styrene	25.0	26.5		ug/L		106	80 - 135
Tetrachloroethene	25.0	26.1		ug/L		104	76 - 123
Toluene	25.0	23.6		ug/L		94	80 - 123
trans-1,2-Dichloroethene	25.0	24.9		ug/L		100	75 - 124
trans-1,3-Dichloropropene	25.0	27.7		ug/L		111	57 - 129
trans-1,4-Dichloro-2-butene	25.0	20.7		ug/L		83	14 - 173
Trichloroethene	25.0	25.0		ug/L		100	70 - 122
Trichlorofluoromethane	12.5	13.8		ug/L		110	30 - 170
Vinyl chloride	12.5	11.9		ug/L		96	60 - 144
Xylenes, Total	50.0	49.9		ug/L		100	80 - 121
Chlorodibromomethane	25.0	25.6		ug/L		103	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*62 - 137*
4-Bromofluorobenzene (Surr)	*110*		*56 - 136*
Toluene-d8 (Surr)	*109*		*78 - 122*
Dibromofluoromethane (Surr)	*98*		*73 - 120*

Lab Sample ID: LCS 240-631098/5
Matrix: Water
Analysis Batch: 631098

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*115*		*62 - 137*
4-Bromofluorobenzene (Surr)	*105*		*56 - 136*

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

Lab Sample ID: LCS 240-631098/5
Matrix: Water
Analysis Batch: 631098

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	*100*		*78 - 122*
Dibromofluoromethane (Surr)	*101*		*73 - 120*

Lab Sample ID: 240-213071-1 MS
Matrix: Water
Analysis Batch: 631098

Client Sample ID: W-100-93
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	ND		25.0	22.4		ug/L		90	68 - 121
1,1,1-Trichloroethane	ND		25.0	22.6		ug/L		90	60 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	20.4		ug/L		81	54 - 145
1,1,2-Trichloroethane	ND		25.0	22.9		ug/L		91	69 - 131
1,1-Dichloroethane	ND		25.0	23.1		ug/L		92	68 - 125
1,1-Dichloroethene	ND		25.0	21.0		ug/L		84	56 - 135
1,2,3-Trichlorobenzene	ND		25.0	18.1		ug/L		72	46 - 148
1,2,3-Trichloropropane	ND		25.0	20.8		ug/L		83	54 - 134
1,2,4-Trichlorobenzene	ND		25.0	17.7		ug/L		71	29 - 156
1,2,4-Trimethylbenzene	ND		25.0	18.5		ug/L		74	69 - 125
1,2-Dibromo-3-Chloropropane	ND		25.0	18.4		ug/L		74	41 - 129
1,2-Dichlorobenzene	ND		25.0	18.7		ug/L		75	73 - 120
1,2-Dichloroethane	ND		25.0	26.4		ug/L		106	63 - 126
1,2-Dichloropropane	ND		25.0	24.1		ug/L		97	69 - 130
1,3,5-Trimethylbenzene	ND		25.0	19.2		ug/L		77	65 - 124
1,3-Dichlorobenzene	ND		25.0	18.2		ug/L		73	73 - 120
1,4-Dichlorobenzene	ND	F1	25.0	18.1	F1	ug/L		72	74 - 120
2-Hexanone	ND		50.0	46.2		ug/L		92	35 - 156
Chlorobromomethane	ND		25.0	24.3		ug/L		97	65 - 124
Acetone	28		50.0	86.6		ug/L		116	33 - 149
Acrylonitrile	ND		250	247		ug/L		99	41 - 153
Benzene	ND		25.0	21.6		ug/L		86	64 - 128
Bromoform	ND		25.0	21.6		ug/L		86	47 - 125
Bromomethane	ND	*+	12.5	13.4		ug/L		107	28 - 150
Carbon disulfide	ND		25.0	21.7		ug/L		87	38 - 140
Carbon tetrachloride	ND		25.0	20.6		ug/L		82	51 - 133
Chlorobenzene	ND		25.0	20.3		ug/L		81	74 - 121
Chloroethane	ND		12.5	13.9		ug/L		111	10 - 199
Chloroform	ND		25.0	21.9		ug/L		88	70 - 122
Chloromethane	ND		12.5	11.6		ug/L		93	32 - 149
cis-1,2-Dichloroethene	ND		25.0	23.3		ug/L		93	66 - 128
cis-1,3-Dichloropropene	ND		25.0	21.7		ug/L		87	47 - 125
Dibromomethane	ND		25.0	25.5		ug/L		102	64 - 126
Dichlorobromomethane	ND		25.0	22.5		ug/L		90	62 - 125
Dichlorodifluoromethane	ND	F2	12.5	5.78		ug/L		46	38 - 139
Ethyl ether	ND		25.0	25.2		ug/L		101	50 - 142
Ethylbenzene	ND		25.0	21.0		ug/L		84	67 - 127
1,2-Dibromoethane	ND		25.0	23.7		ug/L		95	69 - 125
Iodomethane	ND		25.0	25.8		ug/L		103	59 - 120
Naphthalene	ND		25.0	19.9		ug/L		80	49 - 139

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

Lab Sample ID: 240-213071-1 MS
Matrix: Water
Analysis Batch: 631098

Client Sample ID: W-100-93
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
n-Butylbenzene	ND		25.0	19.3		ug/L		77	51 - 134
Isopropylbenzene	ND		25.0	21.2		ug/L		85	64 - 129
N-Propylbenzene	ND		25.0	17.1		ug/L		68	67 - 122
2-Butanone (MEK)	ND		50.0	38.2		ug/L		76	40 - 151
4-Methyl-2-pentanone (MIBK)	ND		50.0	44.2		ug/L		88	31 - 153
Methyl tert-butyl ether	ND		25.0	26.0		ug/L		104	47 - 134
Methylene Chloride	ND		25.0	27.5		ug/L		110	62 - 129
Styrene	ND		25.0	21.9		ug/L		88	70 - 139
Tetrachloroethene	ND		25.0	19.5		ug/L		78	62 - 131
Toluene	ND		25.0	20.1		ug/L		80	58 - 135
trans-1,2-Dichloroethene	ND		25.0	20.5		ug/L		82	56 - 136
trans-1,3-Dichloropropene	ND		25.0	23.0		ug/L		92	47 - 120
trans-1,4-Dichloro-2-butene	ND		25.0	19.1		ug/L		76	10 - 149
Trichloroethene	ND	F2	25.0	17.4		ug/L		70	61 - 124
Trichlorofluoromethane	ND	F2	12.5	8.22		ug/L		66	24 - 177
Vinyl chloride	ND		12.5	10.7		ug/L		79	43 - 157
Xylenes, Total	ND		50.0	41.2		ug/L		82	71 - 123
Chlorodibromomethane	ND		25.0	24.0		ug/L		96	65 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*113*		*62 - 137*
4-Bromofluorobenzene (Surr)	*116*		*56 - 136*
Toluene-d8 (Surr)	*111*		*78 - 122*
Dibromofluoromethane (Surr)	*98*		*73 - 120*

Lab Sample ID: 240-213071-1 MSD
Matrix: Water
Analysis Batch: 631098

Client Sample ID: W-100-93
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		25.0	24.0		ug/L		96	68 - 121	7	14
1,1,1-Trichloroethane	ND		25.0	25.1		ug/L		100	60 - 130	10	17
1,1,2,2-Tetrachloroethane	ND		25.0	21.8		ug/L		87	54 - 145	7	15
1,1,2-Trichloroethane	ND		25.0	23.5		ug/L		94	69 - 131	3	14
1,1-Dichloroethane	ND		25.0	24.2		ug/L		97	68 - 125	4	13
1,1-Dichloroethene	ND		25.0	22.3		ug/L		89	56 - 135	6	26
1,2,3-Trichlorobenzene	ND		25.0	19.6		ug/L		78	46 - 148	8	23
1,2,3-Trichloropropane	ND		25.0	20.6		ug/L		83	54 - 134	1	17
1,2,4-Trichlorobenzene	ND		25.0	19.6		ug/L		79	29 - 156	10	19
1,2,4-Trimethylbenzene	ND		25.0	19.5		ug/L		78	69 - 125	6	20
1,2-Dibromo-3-Chloropropane	ND		25.0	21.0		ug/L		84	41 - 129	13	22
1,2-Dichlorobenzene	ND		25.0	19.7		ug/L		79	73 - 120	5	14
1,2-Dichloroethane	ND		25.0	27.6		ug/L		110	63 - 126	4	12
1,2-Dichloropropane	ND		25.0	24.6		ug/L		98	69 - 130	2	13
1,3,5-Trimethylbenzene	ND		25.0	20.4		ug/L		82	65 - 124	6	22
1,3-Dichlorobenzene	ND		25.0	19.7		ug/L		79	73 - 120	8	14
1,4-Dichlorobenzene	ND	F1	25.0	20.0		ug/L		80	74 - 120	10	15
2-Hexanone	ND		50.0	46.3		ug/L		93	35 - 156	0	17

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

Lab Sample ID: 240-213071-1 MSD
Client Sample ID: W-100-93
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 631098

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorobromomethane	ND		25.0	24.8		ug/L		99	65 - 124	2	15
Acetone	28		50.0	84.3		ug/L		112	33 - 149	3	34
Acrylonitrile	ND		250	242		ug/L		97	41 - 153	2	13
Benzene	ND		25.0	22.5		ug/L		90	64 - 128	4	14
Bromoform	ND		25.0	22.6		ug/L		90	47 - 125	4	15
Bromomethane	ND	*+	12.5	15.9		ug/L		127	28 - 150	17	26
Carbon disulfide	ND		25.0	23.2		ug/L		93	38 - 140	7	23
Carbon tetrachloride	ND		25.0	24.3		ug/L		97	51 - 133	17	24
Chlorobenzene	ND		25.0	20.4		ug/L		81	74 - 121	0	14
Chloroethane	ND		12.5	16.4		ug/L		132	10 - 199	17	30
Chloroform	ND		25.0	23.6		ug/L		94	70 - 122	7	14
Chloromethane	ND		12.5	12.2		ug/L		97	32 - 149	5	27
cis-1,2-Dichloroethene	ND		25.0	24.4		ug/L		97	66 - 128	5	14
cis-1,3-Dichloropropene	ND		25.0	22.9		ug/L		92	47 - 125	5	13
Dibromomethane	ND		25.0	25.9		ug/L		104	64 - 126	2	12
Dichlorobromomethane	ND		25.0	23.0		ug/L		92	62 - 125	2	13
Dichlorodifluoromethane	ND	F2	12.5	9.99	F2	ug/L		80	38 - 139	53	35
Ethyl ether	ND		25.0	26.1		ug/L		104	50 - 142	3	11
Ethylbenzene	ND		25.0	21.8		ug/L		87	67 - 127	4	15
1,2-Dibromoethane	ND		25.0	23.3		ug/L		93	69 - 125	1	14
Iodomethane	ND		25.0	27.9		ug/L		111	59 - 120	8	20
Naphthalene	ND		25.0	23.0		ug/L		92	49 - 139	15	21
n-Butylbenzene	ND		25.0	21.0		ug/L		84	51 - 134	9	28
Isopropylbenzene	ND		25.0	22.8		ug/L		91	64 - 129	8	18
N-Propylbenzene	ND		25.0	18.3		ug/L		73	67 - 122	7	22
2-Butanone (MEK)	ND		50.0	44.0		ug/L		88	40 - 151	14	20
4-Methyl-2-pentanone (MIBK)	ND		50.0	45.7		ug/L		91	31 - 153	3	15
Methyl tert-butyl ether	ND		25.0	27.5		ug/L		110	47 - 134	6	16
Methylene Chloride	ND		25.0	26.6		ug/L		107	62 - 129	3	17
Styrene	ND		25.0	23.6		ug/L		94	70 - 139	7	18
Tetrachloroethene	ND		25.0	20.8		ug/L		83	62 - 131	7	20
Toluene	ND		25.0	20.9		ug/L		83	58 - 135	4	14
trans-1,2-Dichloroethene	ND		25.0	22.7		ug/L		91	56 - 136	10	15
trans-1,3-Dichloropropene	ND		25.0	23.5		ug/L		94	47 - 120	2	14
trans-1,4-Dichloro-2-butene	ND		25.0	17.5		ug/L		70	10 - 149	9	26
Trichloroethene	ND	F2	25.0	20.6	F2	ug/L		83	61 - 124	17	15
Trichlorofluoromethane	ND	F2	12.5	13.7	F2	ug/L		109	24 - 177	50	34
Vinyl chloride	ND		12.5	13.3		ug/L		100	43 - 157	22	24
Xylenes, Total	ND		50.0	42.9		ug/L		86	71 - 123	4	15
Chlorodibromomethane	ND		25.0	25.2		ug/L		101	65 - 120	5	13

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*62 - 137*
4-Bromofluorobenzene (Surr)	*114*		*56 - 136*
Toluene-d8 (Surr)	*111*		*78 - 122*
Dibromofluoromethane (Surr)	*101*		*73 - 120*

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

Lab Sample ID: MB 240-631799/10
Matrix: Water
Analysis Batch: 631799

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 11:32	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/22/24 11:32	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/22/24 11:32	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/22/24 11:32	1
1,1-Dichloroethane	ND		1.0		ug/L			10/22/24 11:32	1
1,1-Dichloroethene	ND		1.0		ug/L			10/22/24 11:32	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/22/24 11:32	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/22/24 11:32	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			10/22/24 11:32	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/22/24 11:32	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/22/24 11:32	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/22/24 11:32	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/22/24 11:32	1
1,2-Dichloroethane	ND		1.0		ug/L			10/22/24 11:32	1
1,2-Dichloropropane	ND		1.0		ug/L			10/22/24 11:32	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/22/24 11:32	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/22/24 11:32	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/22/24 11:32	1
2-Hexanone	ND		10		ug/L			10/22/24 11:32	1
2-Methylnaphthalene	ND		5.0		ug/L			10/22/24 11:32	1
Chlorobromomethane	ND		1.0		ug/L			10/22/24 11:32	1
Acetone	ND		10		ug/L			10/22/24 11:32	1
Acrylonitrile	ND		20		ug/L			10/22/24 11:32	1
Benzene	ND		1.0		ug/L			10/22/24 11:32	1
Bromoform	ND		1.0		ug/L			10/22/24 11:32	1
Bromomethane	ND		1.0		ug/L			10/22/24 11:32	1
Carbon disulfide	ND		5.0		ug/L			10/22/24 11:32	1
Carbon tetrachloride	ND		1.0		ug/L			10/22/24 11:32	1
Chlorobenzene	ND		1.0		ug/L			10/22/24 11:32	1
Chloroethane	ND		1.0		ug/L			10/22/24 11:32	1
Chloroform	ND		1.0		ug/L			10/22/24 11:32	1
Chloromethane	ND		1.0		ug/L			10/22/24 11:32	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 11:32	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 11:32	1
Dibromomethane	ND		1.0		ug/L			10/22/24 11:32	1
Dichlorobromomethane	ND		1.0		ug/L			10/22/24 11:32	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/22/24 11:32	1
Ethyl ether	ND		1.0		ug/L			10/22/24 11:32	1
Ethylbenzene	ND		1.0		ug/L			10/22/24 11:32	1
1,2-Dibromoethane	ND		1.0		ug/L			10/22/24 11:32	1
Iodomethane	ND		1.0		ug/L			10/22/24 11:32	1
Naphthalene	ND		1.0		ug/L			10/22/24 11:32	1
n-Butylbenzene	ND		1.0		ug/L			10/22/24 11:32	1
Isopropylbenzene	ND		1.0		ug/L			10/22/24 11:32	1
N-Propylbenzene	ND		1.0		ug/L			10/22/24 11:32	1
2-Butanone (MEK)	ND		10		ug/L			10/22/24 11:32	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/22/24 11:32	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/22/24 11:32	1

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

Lab Sample ID: MB 240-631799/10
Matrix: Water
Analysis Batch: 631799

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		5.0		ug/L			10/22/24 11:32	1
Styrene	ND		1.0		ug/L			10/22/24 11:32	1
Tetrachloroethene	ND		1.0		ug/L			10/22/24 11:32	1
Toluene	ND		1.0		ug/L			10/22/24 11:32	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/22/24 11:32	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/22/24 11:32	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			10/22/24 11:32	1
Trichloroethene	ND		1.0		ug/L			10/22/24 11:32	1
Trichlorofluoromethane	ND		1.0		ug/L			10/22/24 11:32	1
Vinyl chloride	ND		1.0		ug/L			10/22/24 11:32	1
Xylenes, Total	ND		2.0		ug/L			10/22/24 11:32	1
Chlorodibromomethane	ND		1.0		ug/L			10/22/24 11:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*62 - 137*		*10/22/24 11:32*	*1*
4-Bromofluorobenzene (Surr)	*87*		*56 - 136*		*10/22/24 11:32*	*1*
Toluene-d8 (Surr)	*92*		*78 - 122*		*10/22/24 11:32*	*1*
Dibromofluoromethane (Surr)	*87*		*73 - 120*		*10/22/24 11:32*	*1*

Lab Sample ID: LCS 240-631799/9
Matrix: Water
Analysis Batch: 631799

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	25.0	21.2		ug/L		85	71 - 124
1,1,1-Trichloroethane	25.0	22.2		ug/L		89	64 - 131
1,1,2,2-Tetrachloroethane	25.0	21.4		ug/L		85	58 - 157
1,1,2-Trichloroethane	25.0	21.2		ug/L		85	70 - 138
1,1-Dichloroethane	25.0	21.6		ug/L		86	72 - 127
1,1-Dichloroethene	25.0	21.2		ug/L		85	63 - 134
1,2,3-Trichlorobenzene	25.0	24.2		ug/L		97	45 - 149
1,2,3-Trichloropropane	25.0	20.1		ug/L		80	57 - 150
1,2,4-Trichlorobenzene	25.0	24.3		ug/L		97	44 - 147
1,2,4-Trimethylbenzene	25.0	26.4		ug/L		106	77 - 129
1,2-Dibromo-3-Chloropropane	25.0	17.1		ug/L		68	53 - 135
1,2-Dichlorobenzene	25.0	22.5		ug/L		90	78 - 120
1,2-Dichloroethane	25.0	23.3		ug/L		93	66 - 128
1,2-Dichloropropane	25.0	22.2		ug/L		89	75 - 133
1,3,5-Trimethylbenzene	25.0	27.7		ug/L		111	75 - 129
1,3-Dichlorobenzene	25.0	23.2		ug/L		93	80 - 120
1,4-Dichlorobenzene	25.0	22.7		ug/L		91	80 - 120
2-Hexanone	50.0	48.6		ug/L		97	43 - 167
Chlorobromomethane	25.0	19.4		ug/L		78	71 - 121
Acetone	50.0	41.5		ug/L		83	50 - 149
Acrylonitrile	250	215		ug/L		86	51 - 161
Benzene	25.0	22.7		ug/L		91	77 - 123
Bromoform	25.0	16.1		ug/L		64	57 - 129
Bromomethane	12.5	13.2		ug/L		105	36 - 142

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

Lab Sample ID: LCS 240-631799/9
Matrix: Water
Analysis Batch: 631799

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon disulfide	25.0	21.3		ug/L		85	43 - 140
Carbon tetrachloride	25.0	21.8		ug/L		87	55 - 137
Chlorobenzene	25.0	22.1		ug/L		88	80 - 121
Chloroethane	12.5	15.1		ug/L		121	38 - 152
Chloroform	25.0	21.3		ug/L		85	74 - 122
Chloromethane	12.5	15.9		ug/L		127	47 - 143
cis-1,2-Dichloroethene	25.0	21.5		ug/L		86	77 - 123
cis-1,3-Dichloropropene	25.0	22.0		ug/L		88	64 - 130
Dibromomethane	25.0	22.1		ug/L		88	67 - 131
Dichlorobromomethane	25.0	19.4		ug/L		78	69 - 126
Dichlorodifluoromethane	12.5	7.89		ug/L		63	34 - 153
Ethyl ether	25.0	24.2		ug/L		97	53 - 151
Ethylbenzene	25.0	24.7		ug/L		99	80 - 121
1,2-Dibromoethane	25.0	21.1		ug/L		84	71 - 134
Iodomethane	25.0	10.7		ug/L		43	39 - 136
Naphthalene	25.0	23.0		ug/L		92	53 - 138
n-Butylbenzene	25.0	28.7		ug/L		115	62 - 139
Isopropylbenzene	25.0	31.1		ug/L		124	74 - 128
N-Propylbenzene	25.0	26.6		ug/L		106	76 - 127
2-Butanone (MEK)	50.0	43.8		ug/L		88	54 - 156
4-Methyl-2-pentanone (MIBK)	50.0	49.1		ug/L		98	46 - 158
Methyl tert-butyl ether	25.0	23.9		ug/L		96	65 - 126
Methylene Chloride	25.0	23.4		ug/L		94	71 - 125
Styrene	25.0	24.9		ug/L		100	80 - 135
Tetrachloroethene	25.0	23.6		ug/L		95	76 - 123
Toluene	25.0	22.4		ug/L		90	80 - 123
trans-1,2-Dichloroethene	25.0	21.3		ug/L		85	75 - 124
trans-1,3-Dichloropropene	25.0	23.7		ug/L		95	57 - 129
trans-1,4-Dichloro-2-butene	25.0	21.4		ug/L		86	14 - 173
Trichloroethene	25.0	20.8		ug/L		83	70 - 122
Trichlorofluoromethane	12.5	11.9		ug/L		95	30 - 170
Vinyl chloride	12.5	11.7		ug/L		93	60 - 144
Xylenes, Total	50.0	51.2		ug/L		102	80 - 121
Chlorodibromomethane	25.0	17.6		ug/L		71	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*62 - 137*
4-Bromofluorobenzene (Surr)	*88*		*56 - 136*
Toluene-d8 (Surr)	*88*		*78 - 122*
Dibromofluoromethane (Surr)	*86*		*73 - 120*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Lab Sample ID: MB 200-209864/1-A
Matrix: Water
Analysis Batch: 209964

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 209864

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/18/24 10:00	10/21/24 16:55	1

Method: 522 - 1,4 Dioxane (GC/MS SIM) (Continued)

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	79		46 - 130	10/18/24 10:00	10/21/24 16:55	1

Lab Sample ID: LLCS 200-209864/2-A
Matrix: Water
Analysis Batch: 209964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 209864

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			0.200	0.199	J	ug/L		100	50 - 150		

Surrogate	LLCS %Recovery	LLCS Qualifier	Limits
1,4-Dioxane-d8 (Surr)	89		46 - 130

QC Association Summary

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

GC/MS VOA

Analysis Batch: 631098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-213071-1	W-100-93	Total/NA	Water	8260D	
240-213071-2	W-94-92	Total/NA	Water	8260D	
240-213071-3	W-47-89	Total/NA	Water	8260D	
240-213071-4	W-88-92	Total/NA	Water	8260D	
240-213071-5	W-87-92	Total/NA	Water	8260D	
240-213071-6	W-84-92	Total/NA	Water	8260D	
240-213071-7	W-96-92	Total/NA	Water	8260D	
MB 240-631098/7	Method Blank	Total/NA	Water	8260D	
LCS 240-631098/4	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-631098/5	Lab Control Sample	Total/NA	Water	8260D	
240-213071-1 MS	W-100-93	Total/NA	Water	8260D	
240-213071-1 MSD	W-100-93	Total/NA	Water	8260D	

Analysis Batch: 631799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-213071-9	TRIP BLANK	Total/NA	Water	8260D	
MB 240-631799/10	Method Blank	Total/NA	Water	8260D	
LCS 240-631799/9	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 209864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-213071-3	W-47-89	Total/NA	Water	522	
240-213071-5	W-87-92	Total/NA	Water	522	
240-213071-9	TRIP BLANK	Total/NA	Water	522	
MB 200-209864/1-A	Method Blank	Total/NA	Water	522	
LLCS 200-209864/2-A	Lab Control Sample	Total/NA	Water	522	

Analysis Batch: 209964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-213071-3	W-47-89	Total/NA	Water	522	209864
240-213071-5	W-87-92	Total/NA	Water	522	209864
240-213071-9	TRIP BLANK	Total/NA	Water	522	209864
MB 200-209864/1-A	Method Blank	Total/NA	Water	522	209864
LLCS 200-209864/2-A	Lab Control Sample	Total/NA	Water	522	209864

Lab Chronicle

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-100-93
Lab Sample ID: 240-213071-1
Date Collected: 10/11/24 11:55
Matrix: Water
Date Received: 10/15/24 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631098	LEE	EET CLE	10/17/24 03:07

Client Sample ID: W-94-92
Lab Sample ID: 240-213071-2
Date Collected: 10/11/24 12:15
Matrix: Water
Date Received: 10/15/24 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631098	LEE	EET CLE	10/17/24 03:30

Client Sample ID: W-47-89
Lab Sample ID: 240-213071-3
Date Collected: 10/11/24 14:05
Matrix: Water
Date Received: 10/15/24 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631098	LEE	EET CLE	10/17/24 03:53
Total/NA	Prep	522			209864	CMW	EET BUR	10/18/24 10:00
Total/NA	Analysis	522		1	209964	K1P	EET BUR	10/21/24 20:32

Client Sample ID: W-88-92
Lab Sample ID: 240-213071-4
Date Collected: 10/11/24 14:55
Matrix: Water
Date Received: 10/15/24 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631098	LEE	EET CLE	10/17/24 04:16

Client Sample ID: W-87-92
Lab Sample ID: 240-213071-5
Date Collected: 10/11/24 15:35
Matrix: Water
Date Received: 10/15/24 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631098	LEE	EET CLE	10/17/24 04:39
Total/NA	Prep	522			209864	CMW	EET BUR	10/18/24 10:00
Total/NA	Analysis	522		5	209964	K1P	EET BUR	10/22/24 10:14

Client Sample ID: W-84-92
Lab Sample ID: 240-213071-6
Date Collected: 10/11/24 16:35
Matrix: Water
Date Received: 10/15/24 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631098	LEE	EET CLE	10/17/24 05:02

Lab Chronicle

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Client Sample ID: W-96-92
Lab Sample ID: 240-213071-7
Date Collected: 10/11/24 17:00
Matrix: Water
Date Received: 10/15/24 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631098	LEE	EET CLE	10/17/24 05:25

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-213071-9
Date Collected: 10/11/24 00:00
Matrix: Water
Date Received: 10/15/24 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	631799	MDH	EET CLE	10/22/24 11:54
Total/NA	Prep	522			209864	CMW	EET BUR	10/18/24 10:00
Total/NA	Analysis	522		1	209964	K1P	EET BUR	10/21/24 20:59

Laboratory References:

EET BUR = Eurofins Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Tetra Tech GEO
Job ID: 240-213071-1
Project/Site: Ann Arbor Landfill 2 Year GW & WW Prog.

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Connecticut	State	PH-0806	12-31-26
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Hampshire	NELAP	225024	09-30-25
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-25
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-25
West Virginia DEP	State	210	12-31-24

Laboratory: Eurofins Burlington

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2336	02-25-26
Connecticut	State	PH-0751	09-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	05-19-25
Florida	NELAP	E87467	06-30-25
Minnesota	NELAP	050-999-436	12-31-24
New Hampshire	NELAP	2006	12-18-24
New Jersey	NELAP	VT972	06-30-25
New York	NELAP	10391	03-31-25
Pennsylvania	NELAP	68-00489	04-30-25
Rhode Island	State	LAO00298	12-31-24
US Fish & Wildlife	US Federal Programs	058448	08-01-25
USDA	US Federal Programs	P330-17-00272	12-19-26
Vermont	State	VT4000	02-10-25
Virginia	NELAP	460209	12-14-24
Wisconsin	State	399140830	03-31-25

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone (330) 497-9396 Phone (330) 497-0772

MICHIGAN 190

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: RMF/JMH	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-119054-41599.1
Client Contact: Patti McCall	Phone: 715-214-4381	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: MI	Page: Page 1 of 1
Company: Tetra Tech GEO	PWSID:			Job #:
Address: 1136 Oak Valley Dr. Suite 100	Due Date Requested:			
City: Ann Arbor	TAT Requested (days): Standard			
State, Zip: MI, 48108	Compliance Project: Δ Yes Δ No			
Phone: 734-213-2204(Tel)	PO #: Purchase Order not required			
Email: patti.mccall@tetratech.com	WO #: 117-1054033 / 1.3			
Project Name: Ann Arbor Landfill Semi-Annual GW	Project #: 24027566			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D - VOCs (City of AnnArbor GW List)	1,4-Dioxane (method 522)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A		
W-100-93	10/11/24	11:25	G	Water	N	N	X		6	
W-94-92	10/11/24	12:15	G	Water	N	N	X		6	
W-47-89	10/11/24	14:05	G	Water	N	N	X	X	7	
W-88-92	10/11/24	14:55	G	Water	N	N	X		6	
W-87-92	10/11/24	15:35	G	Water	N	N	X	X	7	
W-84-92	10/11/24	16:35	G	Water	N	N	X		6	
W-96-92	10/11/24	17:00	G	Water	N	N	X		6	
W-85-92	10/11/24	10:10	G	Water	N	N	X		6	
Trip Blank	—	—		Water			X	X	5	
				Water						
				Water						

240-213071 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	RMF	10/11/24 17:30	Tt	Tt cold storage	10/11/24 17:30	Tt
2	Tt cold storage	10/14/24			10/14/24 1000	EETA
3		10/14/24 1000	EETA	KATHARINE MARTIN	10/15/24 945	EUR

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative Login # :
Barberton Facility

Client Tetra Tech GEO Site Name

Cooler Received on 10/15/24 Opened on 10/15/24

Cooler unpacked by: KM

FedEx: 1st Grd (Exp) UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used. (Bubble Wrap) Foam Plastic Bag None Other

COOLANT ~~Wet Ice~~ Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☒ See Multiple Cooler Form

IR GUN # 17 (CF +0.1 °C) Observed Cooler Temp °C Corrected Cooler Temp °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	(Yes)	No NA
3 Shippers' packing slip attached to the cooler(s)?	(Yes)	No
4. Did custody papers accompany the sample(s)?	(Yes)	No
5 Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6 Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes)	No
7 Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11 Sufficient quantity received to perform indicated analyses?	(Yes)	No
12 Are these work share samples and all listed on the COC?	Yes	(No)
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes No	(NA) pH Strip Lot# HC447997
14 Were VOAs on the COC?	(Yes)	No
15 Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	(No) NA
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 63024	(Yes)	No
17 Was a LL Hg or Me Hg trip blank present?	Yes	(No)

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

did not receive samples for W-85-92

19 SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container
Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory
Time preserved. Preservative(s) added/Lot number(s)

VOA Sample Preservation - Date/Time VOAs Frozen.

Login # : ____________

Eurofins - Cleveland Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
(EC) Client Box Other	IR GUN #: 17	2.3	2.4	(Wet Ice) Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:	1.9	2.0	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:	2.5	2.6	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

10/15/2024

Login Container Summary Report

240-213071

10/24/2024

Temperature readings. _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
W-100-93	240-213071-A-1	Voa Vial 40ml - Hydrochloric Acid				
W-100-93	240-213071-B-1	Voa Vial 40ml - Hydrochloric Acid				
W-100-93	240-213071-C-1	Voa Vial 40ml - Hydrochloric Acid				
W-100-93	240-213071-D-1	Voa Vial 40ml - unpreserved				
W-100-93	240-213071-E-1	Voa Vial 40ml - unpreserved				
W-100-93	240-213071-F-1	Voa Vial 40ml - unpreserved				
W-94-92	240-213071-A-2	Voa Vial 40ml - Hydrochloric Acid				
W-94-92	240-213071-B-2	Voa Vial 40ml - Hydrochloric Acid				
W-94-92	240-213071-C-2	Voa Vial 40ml - Hydrochloric Acid				
W-94-92	240-213071-D-2	Voa Vial 40ml - unpreserved				
W-94-92	240-213071-E-2	Voa Vial 40ml - unpreserved				
W-94-92	240-213071-F-2	Voa Vial 40ml - unpreserved				
W-47-89	240-213071-A-3	Voa Vial 40ml - Hydrochloric Acid				
W-47-89	240-213071-B-3	Voa Vial 40ml - Hydrochloric Acid				
W-47-89	240-213071-C-3	Voa Vial 40ml - Hydrochloric Acid				
W-47-89	240-213071-D-3	Voa Vial 40ml - unpreserved				
W-47-89	240-213071-E-3	Voa Vial 40ml - unpreserved				
W-47-89	240-213071-F-3	Voa Vial 40ml - unpreserved				
W-47-89	240-213071-G-3	Amber Glass 250mL - hydrochloric acid				
W-88-92	240-213071-A-4	Voa Vial 40ml - Hydrochloric Acid				
W-88-92	240-213071-B-4	Voa Vial 40ml - Hydrochloric Acid				
W-88-92	240-213071-C-4	Voa Vial 40ml - Hydrochloric Acid				
W-88-92	240-213071-D-4	Voa Vial 40ml - unpreserved				
W-88-92	240-213071-E-4	Voa Vial 40ml - unpreserved				
W-88-92	240-213071-F-4	Voa Vial 40ml - unpreserved				
W-87-92	240-213071-A-5	Voa Vial 40ml - Hydrochloric Acid				
W-87-92	240-213071-B-5	Voa Vial 40ml - Hydrochloric Acid				
W-87-92	240-213071-C-5	Voa Vial 40ml - Hydrochloric Acid				
W-87-92	240-213071-D-5	Voa Vial 40ml - unpreserved				
W-87-92	240-213071-E-5	Voa Vial 40ml - unpreserved				
W-87-92	240-213071-F-5	Voa Vial 40ml - unpreserved				
W-87-92	240-213071-G-5	Amber Glass 250mL - hydrochloric acid				
W-84-92	240-213071-A-6	Voa Vial 40ml - Hydrochloric Acid				
W-84-92	240-213071-B-6	Voa Vial 40ml - Hydrochloric Acid				
W-84-92	240-213071-C-6	Voa Vial 40ml - Hydrochloric Acid				

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
W-84-92	240-213071-D-6	Voa Vial 40ml - unpreserved				
W-84-92	240-213071-E-6	Voa Vial 40ml - unpreserved				
W-84-92	240-213071-F-6	Voa Vial 40ml - unpreserved				
W-96-92	240-213071-A-7	Voa Vial 40ml - Hydrochloric Acid				
W-96-92	240-213071-B-7	Voa Vial 40ml - Hydrochloric Acid				
W-96-92	240-213071-C-7	Voa Vial 40ml - Hydrochloric Acid				
W-96-92	240-213071-D-7	Voa Vial 40ml - unpreserved				
W-96-92	240-213071-E-7	Voa Vial 40ml - unpreserved				
W-96-92	240-213071-F-7	Voa Vial 40ml - unpreserved				
TRIP BLANK	240-213071-A-9	Voa Vial 40ml - Hydrochloric Acid				
TRIP BLANK	240-213071-B-9	Voa Vial 40ml - Hydrochloric Acid				
TRIP BLANK	240-213071-C-9	Voa Vial 40ml - unpreserved				
TRIP BLANK	240-213071-D-9	Voa Vial 40ml - unpreserved				
TRIP BLANK	240-213071-E-9	Amber Glass 250mL - hydrochloric acid				


TO EUROFINS BARBERTON
EUROFINS BARBERTON
180 S. VAN BUREN AVENUE
BARBERTON OH 44203
(330) 497-9396
FedEx
TUE - 15 OCT 10:30A
PRIORITY OVERNIGHT
3 of 3
MPS# 7792 4654 3647
Mstr# 7792 4654 5043
0263
0201
64 CAKA
44203
OH-US CLE


240-213071 Wayb

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone. 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

240-213071 Chain of Custody

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Brooks, Kris M		COC No: 240-192126 1
Client Contact: Shipping/Receiving	Phone	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: Michigan	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note)		Job #: 240-213071-1
Address: 530 Community Drive, Suite 11,	Due Date Requested: 10/28/2024			Preservation Codes: -
City: South Burlington	TAT Requested (days):			
State, Zip: VT, 05403				
Phone: 802-660-1990(Tel) 802-660-1919(Fax)	PO #:			
Email	WO #:			
Project Name: Ann Arbor Landfill 2 Year GW & WW Prog.	Project #: 24027566			Other:
Site	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	522/522_CWA_Prep 1,4 Dioxane (GC/MS SIM)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
W-47-89 (240-213071-3)	10/11/24	14:05 Eastern	G	Water			X	1	
W-87-92 (240-213071-5)	10/11/24	15:35 Eastern	G	Water			X	1	
TRIP BLANK (240-213071-9)	10/11/24	Eastern	G	Water			X	1	

Note Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
MALISSA LOAR	10-15-24			10/17/24 1030	ETA BUF
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time.	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 05/06/2024


ORIGIN ID:CAKA (330) 312-0176
LANCE HERSHMAN
EUROFINS TESTAMERICA BARBERTON
180 S VAN BUREN
BARBERTON, OH 44203
UNITED STATES US
SHIP DATE: 15OCT24
ACTWGT: 18.00 LB
CAD: 0792304/CAFE3855
BILL SENDER
TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
530 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403
(802) 660-1990
REF: S240-125361
PO YES
FedE
WED - 16 OCT
PRIORITY OVERNI
05
BTVA
01:05 INDHU 577G4/7DE3/5FE5

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 240-213071-1

Login Number: 213071
List Number: 2
Creator: Devarney, Hilary

List Source: Eurofins Burlington
List Creation: 10/17/24 04:14 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4ºC
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Alison Rauss
Tetra Tech GEO
1136 Oak Valley Dr.
Suite 100
Ann Arbor, Michigan 48108

Generated 1/8/2025 9:58:12 AM

JOB DESCRIPTION

Ann Arbor Landfill Semi-Annual GW

JOB NUMBER

240-216995-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
1/8/2025 9:58:12 AM

Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Method Summary 6
Sample Summary 7
Detection Summary 8
Client Sample Results 9
Surrogate Summary 11
QC Sample Results 12
QC Association Summary 16
Lab Chronicle 17
Certification Summary 18
Chain of Custody 19
Receipt Checklists 24

Definitions/Glossary

Client: Tetra Tech GEO
Job ID: 240-216995-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 240-216995-1 **Eurofins Cleveland**

Job Narrative
240-216995-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 12/20/2024 8:00 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.0°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-640207 was outside the method criteria for the following analyte(s): 2-Methylnaphthalene, Dichlorodifluoromethane and Iodomethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The laboratory control sample (LCS) for analytical batch 240-640207 recovered outside control limits for the following analytes: 2-Methylnaphthalene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 522: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate(MS/MSD) associated with preparation batch 200-212463. LCSD is included in the batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Tetra Tech GEO
Job ID: 240-216995-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CLE
522	1,4 Dioxane (GC/MS SIM)	EPA	EET BUR
5030C	Purge and Trap	SW846	EET CLE
522	Solid-Phase Extraction (SPE)	EPA	EET BUR

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET BUR = Eurofins Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Tetra Tech GEO
Job ID: 240-216995-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-216995-1	PW-2R-22	Water	12/19/24 11:23	12/20/24 08:00

Detection Summary

Client: Tetra Tech GEO
Job ID: 240-216995-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: PW-2R-22
Lab Sample ID: 240-216995-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Ethyl ether	1.6		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride	1.4		1.0		ug/L	1		8260D	Total/NA
1,4-Dioxane	22		0.40		ug/L	2		522	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Semi-Annual GW

Job ID: 240-216995-1

Client Sample ID: PW-2R-22
Date Collected: 12/19/24 11:23
Date Received: 12/20/24 08:00

Lab Sample ID: 240-216995-1
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			12/30/24 15:51	1
1,1,1-Trichloroethane	ND		1.0		ug/L			12/30/24 15:51	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			12/30/24 15:51	1
1,1,2-Trichloroethane	ND		1.0		ug/L			12/30/24 15:51	1
1,1-Dichloroethane	ND		1.0		ug/L			12/30/24 15:51	1
1,1-Dichloroethene	ND		1.0		ug/L			12/30/24 15:51	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			12/30/24 15:51	1
1,2,3-Trichloropropane	ND		1.0		ug/L			12/30/24 15:51	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			12/30/24 15:51	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			12/30/24 15:51	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			12/30/24 15:51	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			12/30/24 15:51	1
1,2-Dichlorobenzene	ND		1.0		ug/L			12/30/24 15:51	1
1,2-Dichloroethane	ND		1.0		ug/L			12/30/24 15:51	1
1,2-Dichloropropane	ND		1.0		ug/L			12/30/24 15:51	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			12/30/24 15:51	1
1,3-Dichlorobenzene	ND		1.0		ug/L			12/30/24 15:51	1
1,4-Dichlorobenzene	ND		1.0		ug/L			12/30/24 15:51	1
2-Hexanone	ND		10		ug/L			12/30/24 15:51	1
2-Methylnaphthalene	ND	*+	5.0		ug/L			12/30/24 15:51	1
Chlorobromomethane	ND		1.0		ug/L			12/30/24 15:51	1
Acetone	ND		10		ug/L			12/30/24 15:51	1
Acrylonitrile	ND		20		ug/L			12/30/24 15:51	1
Benzene	ND		1.0		ug/L			12/30/24 15:51	1
Bromoform	ND		1.0		ug/L			12/30/24 15:51	1
Bromomethane	ND		1.0		ug/L			12/30/24 15:51	1
Carbon disulfide	ND		5.0		ug/L			12/30/24 15:51	1
Carbon tetrachloride	ND		1.0		ug/L			12/30/24 15:51	1
Chlorobenzene	ND		1.0		ug/L			12/30/24 15:51	1
Chloroethane	ND		1.0		ug/L			12/30/24 15:51	1
Chloroform	ND		1.0		ug/L			12/30/24 15:51	1
Chloromethane	ND		1.0		ug/L			12/30/24 15:51	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			12/30/24 15:51	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			12/30/24 15:51	1
Dibromomethane	ND		1.0		ug/L			12/30/24 15:51	1
Dichlorobromomethane	ND		1.0		ug/L			12/30/24 15:51	1
Dichlorodifluoromethane	ND		1.0		ug/L			12/30/24 15:51	1
Ethyl ether	**1.6**		1.0		ug/L			12/30/24 15:51	1
Ethylbenzene	ND		1.0		ug/L			12/30/24 15:51	1
1,2-Dibromoethane	ND		1.0		ug/L			12/30/24 15:51	1
Iodomethane	ND		1.0		ug/L			12/30/24 15:51	1
Naphthalene	ND		1.0		ug/L			12/30/24 15:51	1
n-Butylbenzene	ND		1.0		ug/L			12/30/24 15:51	1
Isopropylbenzene	ND		1.0		ug/L			12/30/24 15:51	1
N-Propylbenzene	ND		1.0		ug/L			12/30/24 15:51	1
2-Butanone (MEK)	ND		10		ug/L			12/30/24 15:51	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			12/30/24 15:51	1
Methyl tert-butyl ether	ND		1.0		ug/L			12/30/24 15:51	1
Methylene Chloride	ND		5.0		ug/L			12/30/24 15:51	1

Client Sample ID: PW-2R-22
Lab Sample ID: 240-216995-1
Date Collected: 12/19/24 11:23
Matrix: Water
Date Received: 12/20/24 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			12/30/24 15:51	1
Tetrachloroethene	ND		1.0		ug/L			12/30/24 15:51	1
Toluene	ND		1.0		ug/L			12/30/24 15:51	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			12/30/24 15:51	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			12/30/24 15:51	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			12/30/24 15:51	1
Trichloroethene	ND		1.0		ug/L			12/30/24 15:51	1
Trichlorofluoromethane	ND		1.0		ug/L			12/30/24 15:51	1
Vinyl chloride	**1.4**		1.0		ug/L			12/30/24 15:51	1
Xylenes, Total	ND		2.0		ug/L			12/30/24 15:51	1
Chlorodibromomethane	ND		1.0		ug/L			12/30/24 15:51	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexachloroethane TIC	*ND*		*ug/L*			*67-72-1*		*12/30/24 15:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*		*12/30/24 15:51*	*1*
4-Bromofluorobenzene (Surr)	*93*		*56 - 136*		*12/30/24 15:51*	*1*
Toluene-d8 (Surr)	*100*		*78 - 122*		*12/30/24 15:51*	*1*
Dibromofluoromethane (Surr)	*96*		*73 - 120*		*12/30/24 15:51*	*1*

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**22**		0.40		ug/L		12/30/24 12:00	01/07/25 15:02	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*85*		*46 - 130*	*12/30/24 12:00*	*01/07/25 15:02*	*2*

Surrogate Summary

Client: Tetra Tech GEO
Job ID: 240-216995-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-216995-1	PW-2R-22	97	93	100	96
LCS 240-640207/5	Lab Control Sample	101	100	106	102
LCS 240-640207/6	Lab Control Sample	104	97	104	102
MB 240-640207/10	Method Blank	96	91	96	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DXE
Lab Sample ID	Client Sample ID	(46-130)
240-216995-1	PW-2R-22	85
LCS 200-212463/2-A	Lab Control Sample	104
LCSD 200-212463/3-A	Lab Control Sample Dup	93
MB 200-212463/1-A	Method Blank	96

Surrogate Legend

DXE = 1,4-Dioxane-d8 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-640207/10
Matrix: Water
Analysis Batch: 640207

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			12/30/24 11:53	1
1,1,1-Trichloroethane	ND		1.0		ug/L			12/30/24 11:53	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			12/30/24 11:53	1
1,1,2-Trichloroethane	ND		1.0		ug/L			12/30/24 11:53	1
1,1-Dichloroethane	ND		1.0		ug/L			12/30/24 11:53	1
1,1-Dichloroethene	ND		1.0		ug/L			12/30/24 11:53	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			12/30/24 11:53	1
1,2,3-Trichloropropane	ND		1.0		ug/L			12/30/24 11:53	1
1,2,3-Trimethylbenzene	ND		5.0		ug/L			12/30/24 11:53	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			12/30/24 11:53	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			12/30/24 11:53	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			12/30/24 11:53	1
1,2-Dichlorobenzene	ND		1.0		ug/L			12/30/24 11:53	1
1,2-Dichloroethane	ND		1.0		ug/L			12/30/24 11:53	1
1,2-Dichloropropane	ND		1.0		ug/L			12/30/24 11:53	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			12/30/24 11:53	1
1,3-Dichlorobenzene	ND		1.0		ug/L			12/30/24 11:53	1
1,4-Dichlorobenzene	ND		1.0		ug/L			12/30/24 11:53	1
2-Hexanone	ND		10		ug/L			12/30/24 11:53	1
2-Methylnaphthalene	ND		5.0		ug/L			12/30/24 11:53	1
Chlorobromomethane	ND		1.0		ug/L			12/30/24 11:53	1
Acetone	ND		10		ug/L			12/30/24 11:53	1
Acrylonitrile	ND		20		ug/L			12/30/24 11:53	1
Benzene	ND		1.0		ug/L			12/30/24 11:53	1
Bromoform	ND		1.0		ug/L			12/30/24 11:53	1
Bromomethane	ND		1.0		ug/L			12/30/24 11:53	1
Carbon disulfide	ND		5.0		ug/L			12/30/24 11:53	1
Carbon tetrachloride	ND		1.0		ug/L			12/30/24 11:53	1
Chlorobenzene	ND		1.0		ug/L			12/30/24 11:53	1
Chloroethane	ND		1.0		ug/L			12/30/24 11:53	1
Chloroform	ND		1.0		ug/L			12/30/24 11:53	1
Chloromethane	ND		1.0		ug/L			12/30/24 11:53	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			12/30/24 11:53	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			12/30/24 11:53	1
Dibromomethane	ND		1.0		ug/L			12/30/24 11:53	1
Dichlorobromomethane	ND		1.0		ug/L			12/30/24 11:53	1
Dichlorodifluoromethane	ND		1.0		ug/L			12/30/24 11:53	1
Ethyl ether	ND		1.0		ug/L			12/30/24 11:53	1
Ethylbenzene	ND		1.0		ug/L			12/30/24 11:53	1
1,2-Dibromoethane	ND		1.0		ug/L			12/30/24 11:53	1
Iodomethane	ND		1.0		ug/L			12/30/24 11:53	1
Naphthalene	ND		1.0		ug/L			12/30/24 11:53	1
n-Butylbenzene	ND		1.0		ug/L			12/30/24 11:53	1
Isopropylbenzene	ND		1.0		ug/L			12/30/24 11:53	1
N-Propylbenzene	ND		1.0		ug/L			12/30/24 11:53	1
2-Butanone (MEK)	ND		10		ug/L			12/30/24 11:53	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			12/30/24 11:53	1
Methyl tert-butyl ether	ND		1.0		ug/L			12/30/24 11:53	1

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

Lab Sample ID: MB 240-640207/10
Matrix: Water
Analysis Batch: 640207

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		5.0		ug/L			12/30/24 11:53	1
Styrene	ND		1.0		ug/L			12/30/24 11:53	1
Tetrachloroethene	ND		1.0		ug/L			12/30/24 11:53	1
Toluene	ND		1.0		ug/L			12/30/24 11:53	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			12/30/24 11:53	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			12/30/24 11:53	1
trans-1,4-Dichloro-2-butene	ND		2.5		ug/L			12/30/24 11:53	1
Trichloroethene	ND		1.0		ug/L			12/30/24 11:53	1
Trichlorofluoromethane	ND		1.0		ug/L			12/30/24 11:53	1
Vinyl chloride	ND		1.0		ug/L			12/30/24 11:53	1
Xylenes, Total	ND		2.0		ug/L			12/30/24 11:53	1
Chlorodibromomethane	ND		1.0		ug/L			12/30/24 11:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*62 - 137*		*12/30/24 11:53*	*1*
4-Bromofluorobenzene (Surr)	*91*		*56 - 136*		*12/30/24 11:53*	*1*
Toluene-d8 (Surr)	*96*		*78 - 122*		*12/30/24 11:53*	*1*
Dibromofluoromethane (Surr)	*96*		*73 - 120*		*12/30/24 11:53*	*1*

Lab Sample ID: LCS 240-640207/5
Matrix: Water
Analysis Batch: 640207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.2		ug/L		101	71 - 124
1,1,1-Trichloroethane	20.0	20.2		ug/L		101	64 - 131
1,1,2,2-Tetrachloroethane	20.0	18.8		ug/L		94	58 - 157
1,1,2-Trichloroethane	20.0	20.4		ug/L		102	70 - 138
1,1-Dichloroethane	20.0	20.0		ug/L		100	72 - 127
1,1-Dichloroethene	20.0	20.9		ug/L		105	63 - 134
1,2,3-Trichlorobenzene	20.0	21.2		ug/L		106	45 - 149
1,2,3-Trichloropropane	20.0	17.3		ug/L		86	57 - 150
1,2,4-Trichlorobenzene	20.0	20.7		ug/L		104	44 - 147
1,2,4-Trimethylbenzene	20.0	20.0		ug/L		100	77 - 129
1,2-Dibromo-3-Chloropropane	20.0	15.9		ug/L		80	53 - 135
1,2-Dichlorobenzene	20.0	20.0		ug/L		100	78 - 120
1,2-Dichloroethane	20.0	19.5		ug/L		98	66 - 128
1,2-Dichloropropane	20.0	19.9		ug/L		100	75 - 133
1,3,5-Trimethylbenzene	20.0	20.1		ug/L		100	75 - 129
1,3-Dichlorobenzene	20.0	19.8		ug/L		99	80 - 120
1,4-Dichlorobenzene	20.0	20.1		ug/L		100	80 - 120
2-Hexanone	40.0	40.4		ug/L		101	43 - 167
Chlorobromomethane	20.0	19.4		ug/L		97	71 - 121
Acetone	40.0	36.2		ug/L		90	50 - 149
Acrylonitrile	200	198		ug/L		99	51 - 161
Benzene	20.0	20.2		ug/L		101	77 - 123
Bromoform	20.0	17.6		ug/L		88	57 - 129
Bromomethane	20.0	18.8		ug/L		94	36 - 142

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

Lab Sample ID: LCS 240-640207/5
Matrix: Water
Analysis Batch: 640207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon disulfide	20.0	19.7		ug/L		99	43 - 140
Carbon tetrachloride	20.0	19.0		ug/L		95	55 - 137
Chlorobenzene	20.0	19.6		ug/L		98	80 - 121
Chloroethane	20.0	16.1		ug/L		80	38 - 152
Chloroform	20.0	19.2		ug/L		96	74 - 122
Chloromethane	20.0	13.3		ug/L		67	47 - 143
cis-1,2-Dichloroethene	20.0	19.8		ug/L		99	77 - 123
cis-1,3-Dichloropropene	20.0	17.8		ug/L		89	64 - 130
Dibromomethane	20.0	20.5		ug/L		103	67 - 131
Dichlorobromomethane	20.0	18.0		ug/L		90	69 - 126
Dichlorodifluoromethane	20.0	13.0		ug/L		65	34 - 153
Ethyl ether	20.0	19.2		ug/L		96	53 - 151
Ethylbenzene	20.0	20.1		ug/L		101	80 - 121
1,2-Dibromoethane	20.0	18.7		ug/L		94	71 - 134
Iodomethane	20.0	12.0		ug/L		60	39 - 136
Naphthalene	20.0	17.6		ug/L		88	53 - 138
n-Butylbenzene	20.0	20.8		ug/L		104	62 - 139
Isopropylbenzene	20.0	23.2		ug/L		116	74 - 128
N-Propylbenzene	20.0	19.6		ug/L		98	76 - 127
2-Butanone (MEK)	40.0	35.6		ug/L		89	54 - 156
4-Methyl-2-pentanone (MIBK)	40.0	36.9		ug/L		92	46 - 158
Methyl tert-butyl ether	20.0	19.8		ug/L		99	65 - 126
Methylene Chloride	20.0	19.4		ug/L		97	71 - 125
Styrene	20.0	19.5		ug/L		98	80 - 135
Tetrachloroethene	20.0	21.0		ug/L		105	76 - 123
Toluene	20.0	20.4		ug/L		102	80 - 123
trans-1,2-Dichloroethene	20.0	20.0		ug/L		100	75 - 124
trans-1,3-Dichloropropene	20.0	20.0		ug/L		100	57 - 129
trans-1,4-Dichloro-2-butene	20.0	16.7		ug/L		84	14 - 173
Trichloroethene	20.0	20.3		ug/L		101	70 - 122
Trichlorofluoromethane	20.0	19.5		ug/L		98	30 - 170
Vinyl chloride	20.0	17.0		ug/L		85	60 - 144
Xylenes, Total	40.0	40.3		ug/L		101	80 - 121
Chlorodibromomethane	20.0	17.6		ug/L		88	70 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*62 - 137*
4-Bromofluorobenzene (Surr)	*100*		*56 - 136*
Toluene-d8 (Surr)	*106*		*78 - 122*
Dibromofluoromethane (Surr)	*102*		*73 - 120*

Lab Sample ID: LCS 240-640207/6
Matrix: Water
Analysis Batch: 640207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*62 - 137*
4-Bromofluorobenzene (Surr)	*97*		*56 - 136*

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

Lab Sample ID: LCS 240-640207/6
Matrix: Water
Analysis Batch: 640207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	*104*		*78 - 122*
Dibromofluoromethane (Surr)	*102*		*73 - 120*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Lab Sample ID: MB 200-212463/1-A
Matrix: Water
Analysis Batch: 212601

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 212463

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		12/30/24 12:00	01/07/25 11:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	*96*		*46 - 130*	*12/30/24 12:00*	*01/07/25 11:24*	*1*

Lab Sample ID: LCS 200-212463/2-A
Matrix: Water
Analysis Batch: 212601

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 212463

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			2.00	2.19		ug/L		109	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Dioxane-d8 (Surr)	*104*		*46 - 130*

Lab Sample ID: LCSD 200-212463/3-A
Matrix: Water
Analysis Batch: 212601

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 212463

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			2.00	2.07		ug/L		103	70 - 130	6	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Dioxane-d8 (Surr)	*93*		*46 - 130*

QC Association Summary

Client: Tetra Tech GEO
Job ID: 240-216995-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

GC/MS VOA

Analysis Batch: 640207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-216995-1	PW-2R-22	Total/NA	Water	8260D	
MB 240-640207/10	Method Blank	Total/NA	Water	8260D	
LCS 240-640207/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-640207/6	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 212463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-216995-1	PW-2R-22	Total/NA	Water	522	
MB 200-212463/1-A	Method Blank	Total/NA	Water	522	
LCS 200-212463/2-A	Lab Control Sample	Total/NA	Water	522	
LCSD 200-212463/3-A	Lab Control Sample Dup	Total/NA	Water	522	

Analysis Batch: 212601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-216995-1	PW-2R-22	Total/NA	Water	522	212463
MB 200-212463/1-A	Method Blank	Total/NA	Water	522	212463
LCS 200-212463/2-A	Lab Control Sample	Total/NA	Water	522	212463
LCSD 200-212463/3-A	Lab Control Sample Dup	Total/NA	Water	522	212463

Lab Chronicle

Client: Tetra Tech GEO
Job ID: 240-216995-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Client Sample ID: PW-2R-22
Lab Sample ID: 240-216995-1
Date Collected: 12/19/24 11:23
Matrix: Water
Date Received: 12/20/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	640207	HMB	EET CLE	12/30/24 15:51
Total/NA	Prep	522			212463	AP	EET BUR	12/30/24 12:00
Total/NA	Analysis	522		2	212601	A1B	EET BUR	01/07/25 15:02

Laboratory References:

EET BUR = Eurofins Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Tetra Tech GEO
Job ID: 240-216995-1
Project/Site: Ann Arbor Landfill Semi-Annual GW

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Connecticut	State	PH-0806	12-31-26
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-25
New Hampshire	NELAP	225024	09-30-25
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-25
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-25
West Virginia DEP	State	210	12-31-25
Wisconsin	State	399167560	08-31-25

Laboratory: Eurofins Burlington

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2336	02-25-26
Connecticut	State	PH-0751	09-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	05-19-25
Florida	NELAP	E87467	06-30-25
Minnesota	NELAP	050-999-436	12-31-25
New Hampshire	NELAP	2006	12-18-25
New Jersey	NELAP	VT972	06-30-25
New York	NELAP	10391	03-31-25
Pennsylvania	NELAP	68-00489	04-30-25
US Fish & Wildlife	US Federal Programs	058448	07-31-25
USDA	US Federal Programs	525-23-353-27750	12-19-26
Vermont	State	VT4000	02-10-25
Virginia	NELAP	460209	12-14-25
Wisconsin	State	399140830	08-31-25

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone (330) 497-9396 Phone (330) 497-0772

MICHIGAN 190

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: RMF/JMH	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-119054-41599.1
Client Contact: Patti McCall	Phone: 715-214-4381	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: MI	Page: Page 1 of 1
Company: Tetra Tech GEO	PWSID:			Job #:
Address: 1136 Oak Valley Dr. Suite 100	Due Date Requested:			
City: Ann Arbor	TAT Requested (days): Standard			
State, Zip: MI, 48108	Compliance Project: Δ Yes Δ No			
Phone: 734-213-2204(Tel)	PO #: Purchase Order not required			
Email: patti.mccall@tetratech.com	WO #:			
Project Name: Ann Arbor Landfill Semi-Annual GW	Project #: 117-1054033/1.3			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D - VOCs (City of AnnArbor GW List)	1,4-Dioxane (method 522) RMF	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A		
PW-2R-22	12/19/24	11:23	G	Water	N	N	X	X	7	
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						

240-216995 COC

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
RMF	12/19/24 12:30	TT	TT Cold Storage	12/19/24 12:30	TT
TT Cold Storage	12/19/24 14:10	TT		12/19/24 1410	EFTA
	12/19/24 1445	EFTA	MALYSSA LOAR	12.20.24 8Am	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

1/8/2025

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :**
Barberton Facility

Client Tetra Tech GEO Site Name

Cooler unpacked by: MALISSA LOAR

Cooler Received on 12-20-24 Opened on 12-20-24

FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used. Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 17 (CF +0.1 °C) Observed Cooler Temp. 2.9 °C Corrected Cooler Temp. 3.0 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3 Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5 Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7 Did all bottles arrive in good condition (Unbroken)?	Yes	No
8 *Could all bottle labels (ID/Date/Time) be reconciled with the COC?*	Yes	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?		
10 Were correct bottle(s) used for the test(s) indicated?	Yes	No
11 Sufficient quantity received to perform indicated analyses?	Yes	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC450408
14 Were VOAs on the COC?	Yes	No
15 Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	No NA
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes	No
17 Was a LL Hg or Me Hg trip blank present?	Yes	No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. *CHAIN OF CUSTODY & SAMPLE DISCREPANCIES* ☐ *additional next page* | *Samples processed by:*

19 SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired

Sample(s) were received in a broken container

Sample(s) were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory

Time preserved. Preservative(s) added/Lot number(s)

VOA Sample Preservation - Date/Time VOAs Frozen.

12/20/2024

Login Container Summary Report

240-216995

1/8/2025

Temperature readings _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
PW-2R-22	240-216995-A-1	Voa Vial 40ml - Hydrochloric Acid				
PW-2R-22	240-216995-B-1	Voa Vial 40ml - Hydrochloric Acid				
PW-2R-22	240-216995-C-1	Voa Vial 40ml - Hydrochloric Acid				
PW-2R-22	240-216995-D-1	Voa Vial 40ml - unpreserved				
PW-2R-22	240-216995-E-1	Voa Vial 40ml - unpreserved				
PW-2R-22	240-216995-F-1	Voa Vial 40ml - unpreserved				
PW-2R-22	240-216995-G-1	Amber Glass 250mL - hydrochloric acid				

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Brooks, Kris M	1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Kris.Brooks@et.eurofinsus.com	Michigan	Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): N/A	Job #: 240-216995-1
Address: 530 Community Drive, Suite 11,	Due Date Requested: 1/7/2025		Preservation Codes: -
City: South Burlington	TAT Requested (days): N/A		
State, Zip: VT, 05403			
Phone: 802-660-1990(Tel) 802-660-1919(Fax)	PO #: N/A		
Email: N/A	WO #: N/A		
Project Name: Ann Arbor Landfill 2 Year GW & WW Prog.	Project #: 24027566		
Site: N/A	SSOW#: N/A		Other: N/A

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	522/522_CWA_Prep 1,4 Dioxane (GC/MS SIM)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
PW-2R-22 (240-216995-1)	12/19/24	11:23 Eastern	G	Water			X	1	

Note Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested. I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
	12/20/24			12/20/24 10:30	
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Ver: 10/10/2024

Do not lift using this tag.

eurofins | Environment Testing TestAmerica

Part # 159470-434 MTW EXP 06/25

ORIGIN ID:CAKA (330) 312-0176
LANCE HERSHMAN
EUROFINS TESTAMERICA, BARBERTON
180 S VAN BUREN

BARBERTON, OH 44203
UNITED STATES US

SHIP DATE: 20DEC24
ACTWGT: 10.00 LB MAN
CAD: 0792304/CAFE3855

BILL SENDER

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
530 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403
(802) 660-1990
PO: YES

REF: S240-127638

FedEx Express

TRK# 0201 4238 4613 0777

SATURDAY 12:00P
PRIORITY OVERNIGHT

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 240-216995-1

Login Number: 216995
List Number: 2
Creator: Khudaier, Zahraa

List Source: Eurofins Burlington
List Creation: 12/21/24 01:45 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Seal present with no number.
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8ºC
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX C

Groundwater Database

Monitoring Well W-47-89
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 9 2021	October 8 2021	April 8 2022	October 7 2022	April 6 2023	October 6 2023	April 4 2024	October 11 2024
Specific Conductance	uS/cm	0.001	925	1,099	1,081	1,030	1,075	1,025	889	755
pH	s.u.	1-14	6.89	7.02	6.97	6.76	6.89	6.95	7.02	6.98
Temperature	degree C	0.1	13.77	15.4	11.3	14.3	13.1	14.6	13.1	17.2
Oxidation Reduction Potential	mV	1	40	-5.6	-67.2	70.7	-21.1	194.1	43.7	-8.5
Dissolved Oxygen	mg/L	0.01	1.45	0.46	3.97	6.39	0.29	2.70	0.00	0.71
1,4-Dioxane	ug/L	0.2**	**0.30**	**0.23**	0.13 I	<0.20	0.16 I	<0.20	<0.20	<0.20
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1 *+
2-Butanone (MEK)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<1	<1	<5 *_	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (Total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, ug/L = micrograms per liter, mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts,

< = less than current reporting limit, NA = not applicable

Data collected from the most current eight sampling events is represented on this table.

I = Analyte is present at an estimated concentration between the method detection limit and the quantitation limit (Pace).

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

* Reporting limit changed with a change in laboratory completing analysis.

**Reporting limit may vary with dilution, see analytical report for reporting limit.

*_ LCS an/or LCSD is outside acceptance limits, low biased.

*+ LCS and/or LCSD is outside acceptance limits, high biased.

Monitoring Well W-48-89
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 9 2021	October 8 2021	April 8 2022	October 6 2022	April 6 2023	October 6 2023	April 4 2024	October 10 2024
Specific Conductance	uS/cm	0.001	1,177	1,279	1,266	1,269	1,392	1,270	1,077	803
pH	s.u.	1	6.80	7.03	6.90	6.78	6.85	6.90	7.01	7.21
Temperature	degree C	0.1	13.33	14.9	12.8	14.3	12.9	14.6	13.3	18.6
Oxidation Reduction Potential	mV	1	-17	-54.7	-116.9	-48.0	-95.5	123.5	-5.3	79.2
Dissolved Oxygen	mg/L	0.01	1.90	1.82	3.71	1.86	0.29	3.72	0.20	0.62
1,4-Dioxane	ug/L	1/0.2* **	**34.2**	**48.8**	**62.1**	**23.6**	**88.7**	**80.0**	**120**	**67**

Notes:

uS/cm = microsiemens per centimeter, ug/L = micrograms per liter, mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts

Data collected from the most current eight quarters is represented on this table.

*Reporting limit changed with a change in laboratory completing analysis.

**Reporting limit may vary with dilution, see analytical report for reporting limit.

Monitoring Well W-68-90
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 8 2021	October 7 2021	April 7 2022	October 6 2022	April 7 2023	October 6 2023	April 4 2024	October 10 2024
Specific Conductance	uS/cm	0.001	1,433	1,598	1,596	1,624	1,438	1,667	1,402	1,153
pH	s.u.	1	6.90	6.95	6.87	6.76	6.54	6.78	6.92	7.01
Temperature	degree C	0.1	10.44	11.4	9.9	11.2	9.5	11.0	10.3	12.0
Oxidation Reduction Potential	mV	1	-25	-66.5	-132.4	-65.4	-119.2	105.6	-23.6	-77.1
Dissolved Oxygen	mg/L	0.01	0.22	0.00	0.11	0.62	1.31	2.23	0.00	0.51
1,4-Dioxane	ug/L	1/0.2* **	**12.4**	**11.4**	**14.4**	**13.0**	**12.3**	**13**	**13**	**13**

Notes:
uS/cm = microsiemens per centimeter, ug/L = micrograms per liter, mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts
Data collected from the most current eight quarters is represented on this table.
*Reporting limit changed with a change in laboratory completing analysis.
**Reporting limit may vary with dilution, see analytical report for reporting limit.

Monitoring Well W-84-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 7 2021	October 6 2021	June 3 2022	October 6 2022	April 6 2023	October 4 2023	April 5 2024	October 11 2024
Specific Conductance	uS/cm	1	1,447	1,630	1,561	1,476	683	582	501	862
pH	s.u.	1-14	6.83	6.90	6.69	6.74	7.13	6.82	7.14	6.87
Temperature	degree C	0.1	13.82	14.5	12.6	21.9	11.6	16.3	10.8	17.0
Oxidation-Reduction Potential	mV	1	0	-41.2	-33.9	-19.3	-12.1	52.5	114.6	-109.6
Dissolved Oxygen	mg/L	0.01	0.18	0.00	0.09	NR	0.18	2.48	1.90	0.21
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1 *+
2-Butanone (MEK)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	**3.0**	**4.4**	**3.0**	**1.0**	<1	**3.5**	**1.7**	**3.1**
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5 *_	<5	<5 *_	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**1.2**	**1.9**	**1.5**	<1	<1	<1	<1	**1.4**
Xylenes (Total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,2,3- Trimethylbenzene	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:

uS/cm=microsiemens per centimeter; s.u.=standard units, C = Celsius, < = less than current reporting limit, NA = not applicable

NR = measurement not reliable

ug/L=micrograms per liter, mg/L = milligrams per liter, mV=millivolts

Data collected from the most current eight sampling events is represented on this table.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*Reporting limit changed with a change in laboratory completing analysis.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

*+ LCS and/or LCSD is outside acceptance limits, high biased.

Monitoring Well W-85-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 9 2021	October 7 2021	April 6 2022	October 5 2022	April 6 2023	October 6 2023	April 5 2024	October 11** 2024
Specific Conductance	uS/cm	1	1,860	1,531	1,767	1,739	2,074	1,947	1,743	1,396
pH	s.u.	1-14	6.63	6.74	6.61	6.47	6.34	6.49	6.58	6.70
Temperature	degree C	0.1	15.25	18.6	11.4	17.1	9.9	15.4	11.0	14.7
Oxidation-Reduction Potential	mV	1	22	-27.7	-71.5	-39.2	-59.2	168.6	47.7	-23.1
Dissolved Oxygen	mg/L	0.01	0.43	0.05	0.12	0.54	0.22	1.86	0.0	0.28
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	**70**	**72**	**67**	**73**	**79**	**72**	**80**	**65**
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	0.48 J	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	**1.2**	<1	**1.0**	<1	**1.3**	**1.5**	**1.5**	<4
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5 *_	<5	<5 *_	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	**8.1**	**6.5**	**7.4**	**6.8**	**7.7**	**6.8**	**7.6**	**6.3**
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	**1.3**	<1	<1	<1	**4.1**	**3.4**	**1.7**	**6.4**
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**2.2**	<1	**1.4**	**1.6**	**1.4**	<1	**1.5**	<4
Xylenes (Total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,3,5-Trimethylbenzene	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:

uS/cm=microsiemens per centimeter; s.u.=standard units, C = Celsius, < = less than current reporting limit, NA = not applicable

ug/L=micrograms per liter, mg/L = milligrams per liter, mV=millivolts

Data collected from the most current eight quarters is represented on this table.

W-85-92 has elevated reporting limits. Consult laboratory report for these values.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*Reporting limit changed with a change in laboratory completing analysis.

**Reporting limit may vary with dilution, see analytical report for reporting limit.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

Monitoring Well W-87-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 9 2021	October 6 2021	April 7 2022	October 6 2022	April 10 2023	October 5 2023	April 5 2024	October 11 2024
Specific Conductance	uS/cm	1	1,375	1,561	1,460	1,518	1,313	1,526	1,299	1,139
pH	s.u.	1-14	6.95	6.98	7.00	6.80	6.58	6.69	6.97	6.98
Temperature	degree C	0.1	12.13	13.3	11.7	14.1	12.2	13.7	12.1	16.0
Oxidation-Reduction Potential	mV	0.1	-35	-85.9	-135.8	-70.9	-120	68.4	-2.9	-73.1
Dissolved Oxygen	mg/L	0.01	0.29	0.00	1.38	0.59	0.96	1.90	0.37	0.22
1,4-Dioxane	ug/L	0.2**	**13.7**	**17.3**	**14.5**	**28.0**	**22.2*** **	**30**	**30**	**38**
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1 *+
2-Butanone (MEK)	ugL	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-Chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	1	**2.2**	**2.7**	**1.4**	**1.7**	**2.2**	**2.5**	**2.4**	**2.2**
Ethyl benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5 *_	<5	<5 *_	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**17**	**21**	**15**	**19**	**19**	**12**	**14**	**20**
Xylenes(total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, ug/L = micrograms per liter, mg/L = milligrams per liter, C = Celsius, mV = millivolts, s.u. = standard units

< = less than current reporting limit, ND = non-detect, NA = not applicable

Data collected from the most current eight sampling events is represented on this table.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

* Reporting limit changed with a change in laboratory completing analysis.

** Reporting limit may vary with dilution, see analytical report for reporting limit.

*** 1,4-dioxane sample was collected on April 19, 2023.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

*+ LCS and/or LCSD is outside acceptance limits, high biased.

Monitoring Well W-88-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April	October	April	October	April	October	April	October
			7	6	5	5	7	6	2	11
			2021	2021	2022	2022	2023	2023	2024	2024
Specific Conductance	uS/cm	1	1,500	1,093	1,127	1,165	1,430	1,383	1,573	1,261
pH	s.u.	1-14	6.75	7.04	6.84	6.81	6.54	6.41	7.05	6.79
Temperature	degree C	0.1	15.16	14.7	12.4	14.6	11.5	13.1	10.0	17.4
Oxidation-Reduction Potential	mV	1	-9	-51.7	-114.3	-72.8	-95	108.7	2.4	-27.4
Dissolved Oxygen	mg/L	0.01	0.45	0.00	0.09	0.53	1.10	2.14	-0.74	0.23
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1 *+
2-Butanone (MEK)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	**33**	**23**	**26**	**32**	**36**	**35**	**27**	**38**
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	0.54 J	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5 *_	<5	<5	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	**9.6**	**7.3**	**7.4**	**7.4**	**9.0**	**9.9**	**7.8**	**8.2**
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**85**	**100** F1	**68**	**53**	**69**	**65**	**53**	**60**
Xylenes (Total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:

uS/cm=microsiemens per centimeter; s.u.=standard units, C = Celsius, < = less than current reporting limit, ug/L=micrograms per liter, mg/L = milligrams per liter, mV=millivolts, NA = not applicable

Data collected from the most current eight quarters is represented on this table.

J = Analyte is present at an estimated concentration between the method detection limit and the reporting limit.

F1 = MS and/or MSD recovery exceeds control limits.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

W-88-92 has elevated reporting limits. Consult laboratory report for these values.

*Reporting limit changed with a change in laboratory completing analysis.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

*+ LCS and/or LCSD is outside acceptance limits, high biased.

Monitoring Well W-89-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 9 2021	October 6 2021	April 8 2022	October 6 2022	April 6 2023	October 5 2023	April 5 2024	October 10 2024
Specific Conductance	uS/cm	1	1,063	1,023	1,025	1,201	1,252	1,427	1,037	789
pH	s.u.	1.00	6.91	7.13	7.04	6.87	6.67	6.62	6.97	7.13
Temperature	degree C	0.1	12.14	13.7	11.3	14.4	10.7	13.9	10.8	14.2
Oxidation-Reduction Potential	mV	0.1	-58	-133.9	-173.8	-94.4	-134.7	55.3	-42.0	250.8
Dissolved Oxygen	mg/L	0.01	0.18	0.00	0.11	0.58	0.20	1.88	-0.89	2.52
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-Chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane (Chlorodibromomethane)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane(Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone(Methyl Butyl Ketone)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide (Iodomethane)	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-Pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5 *_	<5	<5 *_	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter. mg/L = milligrams per liter. ug/L = micorgrams per liter. s.u. standard units, mV=millivolts, NA = not applicable

C = Celsius, < = less than current reporting limit

Data collected from the most current eight sampling events is represented on this table.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*Reporting limit changed with a change in laboratory completing analysis.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

Monitoring Well W-90-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 9 2021	October 8 2021	April 8 2022	October 6 2022	April 10 2023	October 4 2023	April 3 2024	October 10 2024
Specific Conductance	uS/cm	1	1,164	866	1,228	1,021	959	971	843	683
pH	s.u.	1-14	6.91	7.16	6.99	6.82	6.68	6.86	7.17	7.09
Temperature	degree C	0.1	14.33	15.9	7.1	13.8	12.2	17.6	9.3	14.3
Oxidation-Reduction Potential	mV	0.1	81	61.3	-83.4	88.6	80.8	126.9	125.5	232.1
Dissolved Oxygen	mg/L	0.01	0.46	0.00	0.12	0.73	1.85	2.48	-0.72	0.54
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-Chloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane (Chlorodibromomethane)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide (Iodomethane)	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5 *_	<5	<5	<5 *_
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**3.1**	**3.8**	**6.9**	<1	<1	<1	**1.3**	<1
Xylenes (total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, mg/L = milligrams per liter, ug/L = micrograms per liter, s.u. = standard units, C = Celsius, < = less than current reporting limit,

NA = not applicable

Data collected from the most current eight sampling events is represented on this table.

*Reporting limit changed with a change in laboratory completing analysis.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

Monitoring Well W-92-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 8 2021	October 7 2021	April 7 2022	October 7 2022	April 7 2023	October 9 2023	April 4 2024	October 10 2024
Specific Conductance	uS/cm	1	1,180	1,183	1,629	1,809	1,549	1,556	1,850	1,302
pH	s.u.	1-14	7.25	7.29	7.12	6.75	6.68	6.61	7.06	6.97
Temperature	degree C	0.1	15.37	18.6	10.7	14.8	14.1	13.2	11.3	16.4
Oxidation-Reduction Potential	mV	1	45	-0.7	-85.1	-2.5	-13.3	168.9	137.1	37.0
Dissolved Oxygen	mg/L	0.01	0.49	0.00	0.12	0.62	1.05	1.98	NR	0.30
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5 *_	<5	<5	<5 *_
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (Total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:

uS/cm=microsiemens per centimeter, s.u.=standard units, C = Celsius, < = less than current reporting limit, ug/L=micrograms per liter, mg/L = milligrams per liter, mV=millivolts

NA = not applicable, NR = measurement not reliable

Data collected from the most current eight quarters is represented on this table.

*Reporting limit changed with a change in laboratory completing analysis.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

Monitoring Well W-94-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 9 2021	October 8 2021	April 7 2022	October 6 2022	April 6 2023	October 5 2023	April 5 2024	October 11 2024
Specific Conductance	uS/cm	0.001	1,580	1,725	1,637	1,493	1,752	1,537	1,357	1,088
pH	s.u.	1.00	7.46	7.65	7.01	7.18	7.38	7.00	7.08	7.70
Temperature	degree C	0.1	10.81	11.2	10.3	11.7	10.3	11.2	10.3	14.2
Oxidation-Reduction Potential	mV	1	62	-120.1	-173	-98.3	-152.5	42.1	-25.8	-99.3
Dissolved Oxygen	mg/L	0.01	0.29	0.00	0.07	0.63	0.25	2.02	0.00	0.24
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1 *+
2-Butanone (MEK)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5 *_	<5	<5	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (Total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, mg/L = milligrams per liter, ug/L = micrograms per liters, s.u. = standard units, mV=millivolts, C = Celsius, NA = not applicable

Data collected from the most current eight sampling events is represented on this table.

*Reporting limit changed with a change in laboratory completing analysis.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

*+ LCS and/or LCSD is outside acceptance limits, high biased.

Monitoring Well W-96-92
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 8 2021	October 7 2021	April 7 2022	October 7 2022	April 7 2023	October 9 2023	April 4 2024	October 11 2024
Specific Conductance	uS/cm	1	1,404	1,458	2,735	1,527	1,860	1,598	7,608	1,697
pH	s.u.	1-14	8.30	8.83	7.40	7.55	7.13	6.97	7.13	7.27
Temperature	degree C	0.1	14.88	20.71	9.90	13.40	12.1	13.6	11.7	16.8
Oxidation-Reduction Potential	mV	0.1	114	28.7	-48.0	-121.2	-40.5	45.5	-3.1	-101.8
Dissolved Oxygen	mg/L	0.01	0.70	0.00	0.23	1.03	1.05	2.78	NR	0.40
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	**12**
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1 *+
2-Butanone (MEK)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-Chloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane (Chlorodibromomethane)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide (Iodomethane)	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5 *_	<5	<5	<5
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter. mg/L = milligrams per liter. ug/L = micrograms per liter. s.u. = standard units, mV=millivolts.

C = Celsius, < = less than current reporting limit, NA = not applicable, NR = measurement not reliable

Data collected from the most current eight sampling events is represented on this table.

*Reporting limit changed with a change in laboratory completing anlysis.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

*+ LCS and/or LCSD is outside acceptance limits, high biased.

Monitoring Well W-99-93
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 7 2021	October 6 2021	April 8 2022	October 6 2022	April 6 2023	October 4 2023	April 2 2024	October 10 2024
Specific Conductance	uS/cm	1	504	679	614	557	507	558	520	376
pH	s.u.	1-14	7.41	7.43	7.37	7.16	7.47	7.28	7.83	7.50
Temperature	degree C	0.1	13.60	17.5	9.7	15.7	9.2	19.2	8.7	15.6
Oxidation-Reduction Potential	mV	1	98	49.1	3.6	79.4	27.5	99.2	217.7	228
Dissolved Oxygen	mg/L	0.01	2.14	2.96	5.37	2.47	0.87	3.88	2.25	4.99
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon Disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl Ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone (Methyl Butyl Ketone)	ug/L	10/5*	<5	<10	<5	<5	<5	<1	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Iodide (Iodomethane)	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert) butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5 *	<5	<5	<5 *
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (Total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:
uS/cm=microsiemens per centimeter; s.u.=standard units, C = Celsius, ug/L=micrograms per liter, mg/L = milligrams per liter, mV=millivolts, NA = not applicable, NT = not tested
< = less than current reporting limit

Data collected from the most current eight quarters is represented on this table.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.
*Reporting limit changed with a change in laboratory completing analysis.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

Monitoring Well W-100-93
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 9 2021	October 8 2021	April 7 2022	October 6 2022	April 6 2023	October 5 2023	April 5 2024	October 11 2024
Specific Conductance	uS/cm	1	1,080	1,264	1,467	1,505	1,541	1,059	1,255	694
pH	s.u.	1-14	8.12	7.28	7.00	7.54	7.61	7.96	7.21	8.27
Temperature	degree C	0.1	11.51	11.8	10.8	13.2	9.9	15.8	7.5	12.9
Oxidation-Reduction Potential	mV	0.1	149	-114.6	-171.1	-90.9	-132.8	136.0	-49.3	165.5
Dissolved Oxygen	mg/L	0.0	NR	0.00	0.10	11.28	1.11	9.30	NR	0.27
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	**28**
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane(Methyl Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1 *+
2-Butanone (MEK)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-Chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane (Chlorodibromomethan	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1 F1
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1 F2
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone (methyl Butyl Ketone)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide (Iodomethane)	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5 *_	<5	<5	<5 F1
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1 F2
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1 F2
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**4.0**	**6.0**	**4.6**	**2.0**	**1.4**	<1	**3.4**	<1
Xylenes (total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, mg/L = milligrams per liter, ug/L = micrograms per liter, s.u. = standard units, mV=millivolts, C = Celsius, < = less than current reporting limit

NA = not applicable, NR = not reported

Data collected from the most current eight sampling events is represented on this table.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*Reporting limit changed with a change in laboratory completing analysis.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

F1 MS and/or MSD recovery exceeds control limits.

F2 MS/MSD RPD exceeds control limits.

*+ LCS and/or LCSD is outside acceptance limits, high biased.

Monitoring Well W-105-20
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April	October	April	October	April	October	April	October
			8	7	7	7	7	6	4	11
			2021	2021	2022	2022	2023	2023	2024	2024
Specific Conductance	uS/cm	0.001	814	935	905	882	853	977	811	816
pH	s.u.	1-14	7.09	7.25	7.13	6.87	6.79	6.86	7.06	7.02
Temperature	degree C	0.1	12.98	14.6	9.9	11.3	9.5	14.3	9.2	17.9
Oxidation Reduction Potential	mV	1	97	29.9	-40.0	60.4	-24.0	313.6	158.1	139.5
Dissolved Oxygen	mg/L	0.01	1.34	0.00	0.45	1.22	1.74	2.21	0.00	1.21
1,4-Dioxane	ug/L	0.2*	<0.20	<0.20	<0.20	<0.12	<0.12	<0.20	<0.20	<0.20

Notes:
uS/cm = microsiemens per centimeter, ug/L = micrograms per liter,
mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts
< = less than current reporting limit
Well installed July 23, 2020 and first sampled October 8, 2020.
*Reporting limit may vary with dilution, see analytical report for reporting limit.

Monitoring Well W-106-20
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April	October	April	October	April	October	April	October
			8	7	7	7	7	6	4	9
			2021	2021	2022	2022	2023	2023	2024	2024
Specific Conductance	uS/cm	0.001	1,404	1,533	1,472	1,403	1,238	1,369	1,171	971
pH	s.u.	1-14	6.89	7.00	6.86	6.68	6.54	6.82	6.92	6.99
Temperature	degree C	0.1	12.21	15.4	8.1	12.6	9.8	14.5	11.0	14.8
Oxidation Reduction Potential	mV	1	-19	-67.9	-84.7	-46.9	-98.4	105.4	26.5	-58.1
Dissolved Oxygen	mg/L	0.01	0.29	0.00	0.04	0.58	1.03	1.89	NR	0.45
1,4-Dioxane	ug/L	0.2**	**1.8**	**2.2**	**1.9**	**1.9**	**2.1**	**3.9**	**2.3**	**2.9**

Notes:
uS/cm = microsiemens per centimeter, ug/L = micrograms per liter, NR=measurement not reliable
mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts
Well installed July 23, 2020 and first sampled October 8, 2020.
*Well re-sampled for 1,4-dioxane on November 2, 2020.
**Reporting limit may vary with dilution, see analytical report for reporting limit.

Monitoring Well W-107-20
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April	October	April	October	April	October	April	October
			8	7	7	7	19	6	4	9
			2021	2021	2022	2022	2023	2023	2024	2024
Specific Conductance	uS/cm	0.001	1,153	1,294	1,249	1,225	1,105	1,275	1,081	875
pH	s.u.	1-14	6.98	7.08	6.95	6.74	6.50	6.85	6.94	7.00
Temperature	degree C	0.1	11.73	15.7	10.3	13.0	10.6	13.1	11.1	13.5
Oxidation Reduction Potential	mV	1	45	-53.0	-80.2	-18.5	-62.1	286.5	40.4	35.0
Dissolved Oxygen	mg/L	0.01	1.50	0.20	1.09	0.79	1.00	2.53	0.00	0.43
1,4-Dioxane	ug/L	0.2**	<0.20	<0.20	<0.20	<0.12	<0.12	<0.20	<0.20	<0.20

Notes:
uS/cm = microsiemens per centimeter, ug/L = micrograms per liter,
mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts
< = less than current reporting limit
Well installed July 24, 2020 and first sampled October 8, 2020.
**Reporting limit may vary with dilution, see analytical report for reporting limit.

Monitoring Well W-108-20
Groundwater Database: Upper Aquifer
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April	October	April	October	April	October	April	October
			8	7	8	6	10	5	4	10
			2021	2021	2022	2022	2023	2023	2024	2024
Specific Conductance	uS/cm	0.001	791	903	890	883	803	935	788	663
pH	s.u.	1-14	7.06	7.17	7.07	6.95	6.71	6.84	7.21	7.15
Temperature	degree C	0.1	16.90	17.1	11.0	15.8	15.0	15.6	10.8	15.1
Oxidation Reduction Potential	mV	1	97	-103.7	-151.3	-75.2	-126	60.1	-38.7	-86.2
Dissolved Oxygen	mg/L	0.01	4.35	0.00	0.11	0.59	0.84	1.79	NR	0.29
1,4-Dioxane	ug/L	0.2*	<0.20	<0.20	<0.20	<0.12	<0.12	<0.20	**0.22**	<0.20

Notes:
uS/cm = microsiemens per centimeter, ug/L = micrograms per liter,
mg/L = milligrams per liter, s.u. = standard units, C = Celsius, mV = millivolts
< = less than current reporting limit
Well installed August 17, 2020 and first sampled October 8, 2020.
*Reporting limit may vary with dilution, see analytical report for reporting limit.

Purge Well PW-1R-12
Groundwater Database
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 7 2021	October 6 2021	April 6 2022	October 5 2022	April 4 2023	October 4 2023	April 3 2024	October 9 2024
Specific Conductance	uS/cm	0.001	1,550	1,691	1,668	1,602	NR	1,862	1,511	1,191
pH	s.u.	1-14	6.50	6.60	6.61	6.48	6.97	6.64	6.76	6.85
Temperature	degree C	0.1	12.98	12.4	12.2	12.8	13.5	12.9	12.5	13.2
Oxidation Reduction Potential	mV	0.1	-3	-46	-133.9	-86.7	-99.4	-25.2	-6.7	-45.1
Dissolved Oxygen	mg/L	0.01	0.18	0.00	0.22	0.51	NR	6.59	5.94	5.91
1,4-Dioxane	ug/L	0.2**	**185**	**170**	**140**	**202**	**151**	**170**	**240**	**230**
Acetone	ug/L	10/5*	<10	<10	<5	<5	<5	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane (Methyl Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane (Methyl Chloride)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane (Chlorodibromomethane)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane (Methylene Bromide)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
Dichlorodifluormethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	5/1*	**3.2**	**4.7**	**3.4**	**3.0**	**4.7**	**6.3**	**5.4**	**6.5**
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5 *_	<5	<5	<5
Naphthalene	ug/L	1/5*	1.2 J	<1	<5	<5	<5	<1	<1	<1
n-Butylbenzene	ug/L	1	0.34 J	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (Total)	ug/L	3/2*	<3	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, mg/L = milligrams per liter, ug/L = micrograms per liter, s.u. = standard units, mV=millivolts, C = Celsius

NA = not applicable, < = less than reporting limit; NR = Measurement Not Reliable

Data collected from the most current eight sampling events is represented on this table.

J = Analyte is present at an estimated concentration between the method detection limit and the reporting limit.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

PW-1R-12 has elevated reporting limits. Consult laboratory report for these values.

*Reporting limit changed with a change in laboratory completing analysis.

**Reporting limit may vary with dilution, see analytical report for reporting limit.

*_ LCS and/or LCSD is outside acceptance limits, low biased.

Purge Well PW-2R-01/PW-2R-22
Groundwater Database
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	October 7 2020	June 11 2021***	October 6 2021	April 7 2022	June 5 2023*^	October 4 2023	April 3 2024	December 19 2024***
Specific Conductance	uS/cm	1	1,285	1,270	1,389	1,415	1,289	1,369	1,145	2,083
pH	s.u.	1-14	6.68	6.82	6.92	6.80	6.91	7.00	7.05	6.76
Temperature	degree C	0.1	13.83	10.72	13.9	11.0	15.0	14.4	11.6	56.1
Oxidation Reduction Potential	mV	0.1	-8	NR	-53.2	-124.2	-130.5	-6.5	-16.0	176.2
Dissolved Oxygen	mg/L	0.01	0.19	0	0.00	0.23	0.00	9.79	6.18	NR
1,4-Dioxane	ug/L	0.2**	**23.4**	**17.9**	**21.2**	**19.6**	**5.3**	**22**	**22**	**22**
Acetone	ug/L	10/5*	<10	<10	<10	<5	<5	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<1	<20	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone	ug/L	10/5*	<5	<5	<10	<5	<5	<10	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane(Chlorodibromomethane)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2	<2.5	<1	<1	<2.5	<2.5	<2.5
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	5/1*	**1.0**	**1.3**	**1.7**	**1.2**	**4.6**	**2.5**	**1.7**	**1.6**
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<2	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	<1	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	10/5**	<5	<5	<10	<5	<5	<10	<10	<10
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide	ug/L	5/1*	<5	<5	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<1	<10	<5	<5	<10	<10	<10
Methylene Chloride	ug/L	5/1*	<5	<5	<5	<1	<1	<5	<5	<5
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5	<5	<5 *+
Naphthalene	ug/L	1/5*	<5	<5	<1	<5	<5	<1	<1	<1
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**1.1**	**1.2**	**1.7**	<1	**5.2**	**1.7**	**1.4**	**1.4**
Xylenes (Total)	ug/L	3/2*	<3	<3	<2	<2	<2	<2	<2	<2
1,2,3-Trimethylbenzene	ug/L	1/5*	<1	<1	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, mg/L = milligrams per liter, ug/L = micrograms per liter, s.u. = standard units, mV=millivolts, C = Celsius

NA = not applicable, < = less than current reporting limit, NR = Measurement not reliable

Data collected from the most current eight sampling events is represented on this table.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*Reporting limit changed with a change in laboratory completing analysis.

**Reporting limit may vary with dilution, see analytical report for reporting limit.

***PW-2R-01 was not operational during the semi-annual event but was sampled within the same quarter.

PW-2R-01 was inoperable and was not sampled during the 2022 second semi-annual event.

PW-2R-01 was replaced by PW-2R-22 in December 2022.

*^PW-2R-22 was not operational during the semi-annual event but was sampled using a peristaltic pump during the same quarter.

*+ LCS and/or LCSD is outside acceptance limits, high biased.

Purge Well PW-3R-12
Groundwater Database
Ann Arbor Landfill
Ann Arbor, Michigan

Parameter	Units	Reporting Limit	April 7 2021	October 6 2021	April 6 2022	October 5 2022	June 5 2023*^	October 4 2023	April 3 2024	October 9 2024
Specific Conductance	uS/cm	1	2,130	1,680	1,609	1,892	1,929	2,271	1,804	1,789
pH	s.u.	1-14	6.68	6.80	6.70	6.52	6.69	6.70	6.89	6.78
Temperature	degree C	0.1	13.47	14.0	12.5	14.1	16.3	14.1	12.5	16.0
Oxidation Reduction Potential	mV	0.1	-6	-29.9	-106.7	-75.7	-169	2.1	2.2	-35.9
Dissolved Oxygen	mg/L	0.01	0.39	0.00	0.33	0.48	0.02	8.43	6.46	3.33
1,4-Dioxane		0.2**	**183**	**84.0**	**71.1**	**179**	**19.9**	**180**	**220**	**220**
Acetone	ug/L	10/5*	<10	<10	<5	<5	6.1 *+	<10	<10	<10
Acrylonitrile	ug/L	20/4*	<1	<20	<4	<4	<4	<20	<20	<20
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane/Methyl Bromide	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<10	<10
Carbon disulfide	ug/L	1/5*	<1	<5	<5		<5	<5	<5	<5
Carbon tetrachloride	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane(Chlorodibromomethane)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	2.5/1*	<2	<2.5	<1	<1	<1	<2.5	<2.5	<2.5
Dichlorodifluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	1	0.44 J	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	1	**9.0**	**12**	**8.5**	**8.2**	**9.2**	**9.1**	**6.9**	**7.9**
trans-1,2-Dichloroethene	ug/L	1	**2.5**	**2.5**	**2.3**	**2.1**	**2.0**	**2.2**	**2.0**	**2.1**
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl ether	ug/L	1	**6.7**	**4.9**	**3.0**	**4.9**	**1.0**	**9.6**	**7.0**	**8.2**
Ethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane ♦	ug/L	1/NA*	<1	ND	ND	ND	ND	<1	<1	<1
2-Hexanone	ug/L	10/5*	<5	<10	<5	<5	<5	<10	<1	<1
Isopropylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl iodide	ug/L	5/1*	<5	<1	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl ether (MTBE)	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	ug/L	10/5*	<1	<10	<5	<5	<5	<10	<1	<1
Methylene Chloride	ug/L	5/1*	<5	<5	<1	<1	<1	<5	<1	<1
2-Methylnaphthalene	ug/L	5	<5	<5	<5	<5	<5	<5	<1	<1
Naphthalene	ug/L	1/5*	<5	<1	<5	<5	<5	<1	<1	<1
n-Butylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1	<1	<1	<1	<1	5.5	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	1	**51**	**46**	**41**	**42**	**12**	**49**	**39**	**34**
Xylenes (Total)	ug/L	3/2*	<3	<2	<2	<2	<1	<2	<2	<2
1,2,3-Trimethylbenzene		1/5*	<1	<5	<5	<5	<5	<5	<5	<5

Notes:

uS/cm = microsiemens per centimeter, mg/L = milligrams per liter, ug/L = micrograms per liter, s.u. = standard units, mV=millivolts, C = Celsius

NA = not applicable, < = less than current reporting limit

Data collected from the most current eight sampling events is represented on this table.

J = Analyte is present at an estimated concentration between the method detection limit and the reporting limit.

♦ Beginning in October 2021 the hexachloroethane result was determined by measuring against the nearest internal standard and reporting as a tentatively identified compound.

*Reporting limit changed with a change in laboratory completing analysis.

**Reporting limit may vary with dilution, see analytical report for reporting limit.

*+The laboratory control sample (LCS) and LCS duplicate (LCSD) are outside acceptance limits, high biased.

*^PW-3R-12 was not operational during the semi-annual event but was sampled using a peristaltic pump within the same quarter.

Attachment B: Semi-Annual and Quarterly Gas Monitoring Reports (3rd and 4th Quarter, 2024)

Gas Monitoring Report
Third Quarter 2024

City of Ann Arbor Landfill
Ann Arbor, Michigan

October 21, 2024

TETRA TECH

Gas Monitoring Report
Third Quarter 2024

City of Ann Arbor Landfill
Ann Arbor, Michigan

Prepared for:

Erin Donnelly
Environmental Services Manager
City of Ann Arbor
301 E. Huron Street
Ann Arbor, Michigan 48104

Prepared by:

Tetra Tech
1136 Oak Valley Dr., Suite 100
Ann Arbor MI 48108

October 21, 2024

Alison Rauss
Senior Scientist

Patti J. McCall
Principal Hydrogeologist

TABLE OF CONTENTS

1. INTRODUCTION **1**
2. FIELD MONITORING PROCEDURES **1**
3. GAS MONITORING RESULTSc **2**
4. NORTH SIDE METHANE COLLECTION SYSTEM **2**
5. CONCLUSIONS **3**

TABLES

Table 1 Quarterly Gas Monitoring Locations

Table 2 Gas Monitoring Data - July 11, 2024

Table 3 Gas Monitoring Data - October 4, 2022 through July 11, 2024

FIGURES

Figure 1 Quarterly Gas Monitoring Location Map

Figure 2 Ambient Gas Monitoring Locations

1. INTRODUCTION

Tetra Tech completed the third quarter 2024 gas monitoring survey on July 11, 2024 at the Ann Arbor Landfill (AALF) located in Ann Arbor, Michigan. Gas monitoring was completed in accordance with the following:

- Addendum to Gas Plan Monitoring Revisions dated May 1, 2008;
- The Natural Resources and Environmental Protection Act (NREPA), 1994 Public Act (PA) 451, as amended, and the rules promulgated under Part 115, specifically Rule (R) 299.4433, which specifies Type II landfill explosive gas control and monitoring requirements; and,
- Gas Monitoring Plan Revisions dated June 4, 2021.

During the spring of 2005, a methane collection system was installed along the north side of the AALF to prevent methane from migrating off the landfill property. The system was operational between July 2005 and February 2022, when it was turned off for repairs and has remained off. This is discussed in greater detail in Section 4. Additionally, methane from Phases I and II of the landfill is actively being recovered and converted to energy using a landfill gas recovery system located south of Phase II. This monitoring represents a quarterly event.

2. FIELD MONITORING PROCEDURES

During this quarterly event, gas monitoring was performed at 50 locations associated with the AALF. **Table 1** presents the location, number and name of the monitoring locations, as identified on **Figure 1** and **2**. Storm sewer location R1 was inaccessible by soil erosion and sedimentation control measures from a recent dredging activity nearby.

The percent of carbon dioxide, oxygen, methane, and methane by the lower explosion limit (LEL) were measured using a Landtec Gem Gas Meter. The meter was calibrated prior to use with a standard of known concentrations for methane and carbon dioxide. Barometric pressure readings were obtained from local weather monitoring station after the gas monitoring survey was completed and included on **Table 2**. Gas pressure measurements are not applicable within buildings or utility structures as these monitoring locations are at atmospheric pressure.

3. GAS MONITORING RESULTS

In accordance with the NREPA 1994 PA 451, R 229.4433(1)(b), methane gas shall not be more than 100-percent of the LEL (5-percent methane by volume) at or beyond the property boundary. In addition, the AALF Gas Monitoring Plan requires response actions to be taken when methane is detected in excess of 25-percent of the LEL (1.25-percent methane by volume) in onsite utility structures or buildings. It should be noted that a detection of 0.1-percent methane by volume is considered valid when a concurrent LEL value is recorded. Otherwise, such a reading is attributed to meter drift.

Measurements collected during the quarterly survey are reported on **Table 2**. A summary of methane monitoring for the last eight quarterly surveys is presented on **Table 3**. Review of **Table 3** indicates that methane was detected at GP-2S. The methane detection at GP-2S was 8.4 percent methane by volume. Offsite monitoring locations GP-13-99, GP-14-02 and GP-15-02 located on the north side of Ellsworth Road were measured and were non-detect for methane.

4. NORTH SIDE METHANE COLLECTION SYSTEM

As part of the NSMCS, ten Perimeter Extraction Wells (PEWs) were installed along the south side of Ellsworth Road to prevent methane gas from migrating beyond the AALF property boundary.

Given the age of the landfill, the historical data and the lack of detections within the landfill (except for GP-2S and on rare occasion, GP-2D and locations on exterior of drop of station), the NSMCS may no longer be necessary. It is not unusual for gas monitoring well GP-2S in the landfill to have a methane detection, however the two gas wells across the street (GP-13-99, GP-14-02 and GP-15-02) do not demonstrate migration from GP-2S. The NSMCS has remained off as methane continues to diminish and has not been documented migrating from the landfill.

5. CONCLUSIONS

During this event, methane was detected at GP-2S. Offsite gas sampling demonstrated that the methane is not migrating from the property. To ensure optimal performance of the NSMCS in the event it needs to be restarted, blower skid maintenance will continue

monthly. The NSMCS will remain off unless methane detections indicate that it’s beneficial to restart.

TABLES

TABLE 1

Quarterly Gas Monitoring Locations

Ann Arbor Landfill
Ann Arbor, Michigan

Sampling Locations	Number of Sampling Points	Gas Sampling Location Names as Identified on Corresponding Figures
Sanitary Sewers	2	S1, S3
Storm Sewer Manholes	1	R2
Indoor Locations*	28	MP-1 through MP-8, MP-10, MP-11, MP-14, MP-15, MP-18 through MP-33
Gas Probes	17	GP-1S/1D through GP-5S/5D, GP-7S-98/GP-7D-98, GP-8SR-05/GP-8D-98, GP-13-99, GP-14-02, GP-15-02
Temporary Gas Probes	1	TGP-2
Piezometer	1	P-3U

Notes:

1. *Indoor Locations include: Materials Recovery Facility (MRF), Former Maintenance Building, Ann Arbor Drop-off Station and the Waste Transfer Station.
2. MRF Building locations MP-12, MP-13, MP-16 and MP-17 were abandoned after reconfiguration of the MRF. Monitoring Points MP-30 through MP-33 were added in October 2022.
3. GP-13-99, GP-14-02 and GP-15-02 were monitored during the quarterly event due to the methane detection at GP-2S.
4. Storm sewer manhole R1 was buried in July 2024 by soil erosion and sedimentation control measures from a recent dredging activity nearby.

TABLE 2

Gas Monitoring Data
July 11, 2024
Ann Arbor Landfill
Ann Arbor, Michigan

Monitoring Location	Time		% CO_2	% CH_4	% CH_4 by LEL	% O_2	Landtec Gem Pressure Reading	Barometric Pressure in. Hg
MP-1	11:09	11:10	0	0	0	20.4	NA	29.17
MP-2	11:08	11:09	0	0	0	20.4	NA	29.19
MP-3	11:04	11:05	0	0	0	20.4	NA	29.17
MP-4	11:06	11:07	0	0	0	20.4	NA	29.19
MP-5	11:05	11:06	0	0	0	20.4	NA	29.17
MP-6	12:24	12:25	0	0	0	20.4	NA	29.17
MP-7	12:16	12:17	0	0	0	20.4	NA	29.17
MP-8	12:15	12:16	0	0	0	20.4	NA	29.17
MP-10	12:28	12:29	0	0	0	20.4	NA	29.17
MP-11	10:30	10:31	0	0	0	19.2	NA	29.17
MP-14	10:44	10:45	0	0	0	20.1	NA	29.19
MP-15	10:46	10:47	0	0	0	20.3	NA	29.19
MP-18	12:25	12:26	0	0	0	20.4	NA	29.19
MP-19	12:26	12:27	0	0	0	20.4	NA	29.19
MP-20	12:28	12:29	0	0	0	20.4	NA	29.19
MP-21	12:18	12:19	0	0	0	20.4	NA	29.19
MP-22	12:19	12:20	0	0	0	20.4	NA	29.19
MP-23	12:20	12:21	0	0	0	20.4	NA	29.19
MP-24	12:21	12:22	0	0	0	20.4	NA	29.19
MP-25	12:22	12:23	0	0	0	20.4	NA	29.19
MP-26	12:11	12:12	0	0	0	20.4	NA	29.19
MP-27	12:13	12:14	0	0	0	20.4	NA	29.19
MP-28	12:12	12:13	0	0	0	20.4	NA	29.19
MP-29	12:14	12:15	0	0	0	20.4	NA	29.19
MP-30	10:34	10:35	0	0	0	19.2	NA	29.19
MP-31	10:36	10:37	0	0	0	19.2	NA	29.19
MP-32	10:38	10:39	0	0	0	19.5	NA	29.19
MP-33	10:39	10:40	0	0	0	19.9	NA	29.19
S1 (Sanitary Sewer)	11:03	11:04	0.2	0	0	19.9	NA	29.19
S3	12:31	12:32	0	0	0	20.4	NA	29.19
R1 (Storm Sewer)	NM	NM	NM	NM	NM	NM	NA	NM
R2	12:34	12:35	0	0	0	20.4	NA	29.19
MP (Meter Pit)	13:14	13:15	0	0	0	20.5	NA	29.19
GP-1S	11:17	11:18	6.1	0	0	10.0	0	29.19
GP-1D	11:18	11:19	0.7	0	0	19.6	0	29.19
GP-2S	9:57	9:58	9.1	8.4	>100	5.6	0	29.19
GP-2D	9:59	10:00	0.1	0	0	20.4	0	29.19
GP-3S	10:20	10:21	0	0	0	19.8	0	29.19
GP-3D	10:21	10:22	0	0	0	19.8	0	29.19
GP-4S	10:54	10:55	0.1	0	0	20.1	0	29.19
GP-4D	10:55	10:56	3.2	0	0	18.6	0	29.19
GP-5S	11:52	11:53	3.2	0	0	17.3	0	29.19
GP-5D	11:54	11:55	0	0	0	20.4	0	29.19
GP-7S-98	10:16	10:17	8.6	0	0	12.0	0	29.19
GP-7D-98	10:14	10:15	5.2	0	0	14.5	0	29.19
GP-8SR-05	12:00	12:01	0	0	0	20.5	0	29.19
GP-8D-98	11:57	11:58	0.6	0	0	19.4	0	29.19
GP-13-99	13:41	13:42	3.2	0	0	15.4	0	29.19
GP-14-02	14:14	14:16	0.0	0	0	20.5	0	29.19
GP-15-02	14:16	14:17	0.8	0	0	19.4	0	29.19
TGP-2	11:47	11:48	0.0	0	0	20.5	0	29.19
P-3U	11:33	11:34	0.1	0	0	20.4	0	29.19

Notes:
NA = Not Applicable
NM = Not Measured
% CO_2 = Percent Carbon Dioxide
% CH_4 = Percent Methane by volume
LEL = Lower Explosive Limit
% O_2 = Percent Oxygen
in. Hg = Inches of Mercury
MRF Building locations MP-12, MP-13, MP-16 and MP-17 were abandoned after reconfiguration of the MRF. Monitoring points MP-30 through MP-33 were added in October 2022.
Storm sewer manhole R1 was buried in July 2024 by soil erosion and sedimentation control measures from a recent dredging activity nearby.

TABLE 3

Gas Monitoring Data
October 4, 2022 through July 11, 2024
Ann Arbor Landfill
Ann Arbor, Michigan

Monitoring Location		October 4, 2022		January 10, 2023		April 4, 2023		July 11, 2023		October 5, 2023		January 9, 2024		April 2, 2024		July 11, 2024	
		% Methane by Volume	% of LEL	% Methane by Volume	% of LEL	% Methane by Volume	% of LEL	% Methane by Volume	% of LEL	% Methane by Volume	% of LEL	% Methane by Volume	% of LEL	% Methane by Volume	% of LEL	% Methane by Volume	% of LEL
Atmospheric Pressure		29.33 to 29.36 in Hg		29.07 to 29.09 in Hg		29.05 in Hg		28.99 to 29.03 in Hg		29.14 to 29.16 in Hg		28.66 in Hg		28.66 to 28.77 in Hg		29.17 to 29.19 in Hg	
Maintenance Building	MP-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ann Arbor Drop-off Station Building	MP-7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-18	0	0	**0.6**	**4.0**	0	0	0	0	**4.5**	**80**	**1.0**	**21**	**6.5**	**56**	0	0
	MP-19	0	0	**2.2**	**29**	0	0	0	0	0	0	**3.0**	**59**	**0.9**	**19**	0	0
	MP-20	0	0	**0.6**	**10**	0	0	0	0	**3.0**	**59**	0	0	**0.8**	**16**	0	0
	MP-21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-28	0	0	0	0	0	0	**4.1**	**79**	0	0	0	0	0	0	0	0
	MP-29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Guard House	MP-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MRF Building	MP-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Transfer Station	MP-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sanitary Sewer	S1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S3	0	0	0	0	NM	NM	0	0	0	0	0	0	0	0	0	0
Storm Sewer	R1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NM	NM
	R2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Probe	GP-1S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-1D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-2S	**9.1**	**>100**	**5.4**	**>100**	0	0	**5.9**	**>100**	**31.2**	**>100**	**12.4**	**>100**	**0.3**	**6.0**	**8.4**	**>100**
	GP-2D	0	0	0	0	0	0	0	0	0	0	**0.1**	**2**	0	0	0	0
	GP-3S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-3D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-4S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-4D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-5S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-5D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-7S-98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-7D-98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-8SR-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-8D-98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-13-99	0	0	NM	NM	NM	NM	0	0	0	0	0	0	0	0	0	0
Temporary Gas Probes	TGP-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Piezometer	P-3U	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:
Previous data not shown, available upon request.
% = Percent
LEL = Lower Explosive Limit
in Hg = Inches of Mercury
Shading indicates an action required per the City of Ann Arbor Landfill Gas Monitoring Plan and Addendum.
MRF Building locations MP-12, MP-13, MP-16 and MP-17 were abandoned after reconfiguration of the MRF. Monitoring points MP-30 through MP-33 were added in October 2022.
Storm sewer R1 was buried in July 2024 by soil erosion and sedimentation control measures from a recent dredging activity nearby.

FIGURES



P:\Projects\Ann Arbor\Landfill\GIS\Figures\Gas\Figure 1_Quarterly Gas Monitoring Location Map_July 2023.mxd

SOURCE: 2008 United States Geological Survey Aerial

- Quarterly Gas Monitoring Location (January, July)
- Semi-Annual Gas Monitoring Location
- Slurry Wall*

*Slurry Wall Location Is Approximate.

R1	Storm Sewer Location
S1	Sanitary Sewer Location
GP-1S	Gas Probe Location
TGP-2	Temporary Gas Probe Location
P-3U	Piezometer Location

N

0 250 500 1,000 Feet

TETRA TECH

CHECKED: PJM

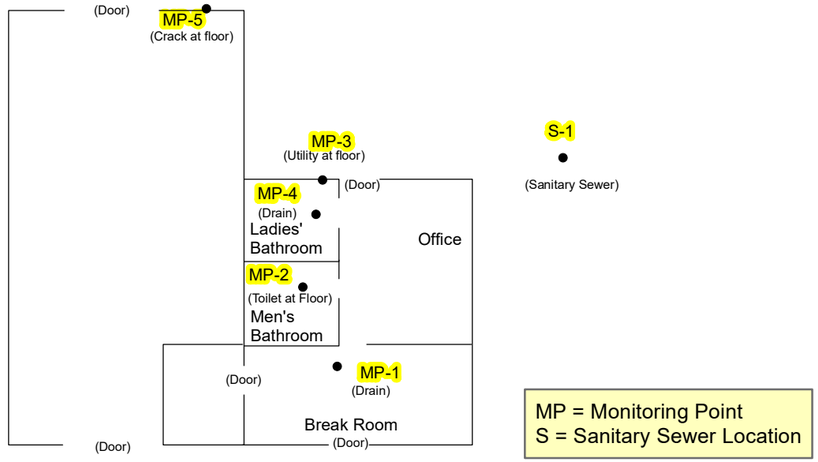
DATE: 7/19/2023

ANN ARBOR LANDFILL
ANN ARBOR, MICHIGAN

QUARTERLY GAS MONITORING LOCATION MAP

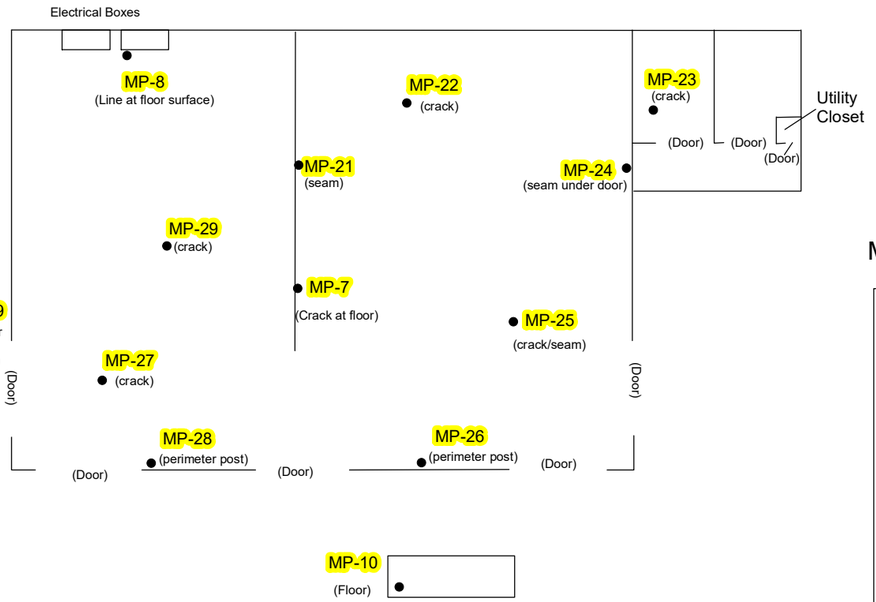
FIGURE
1

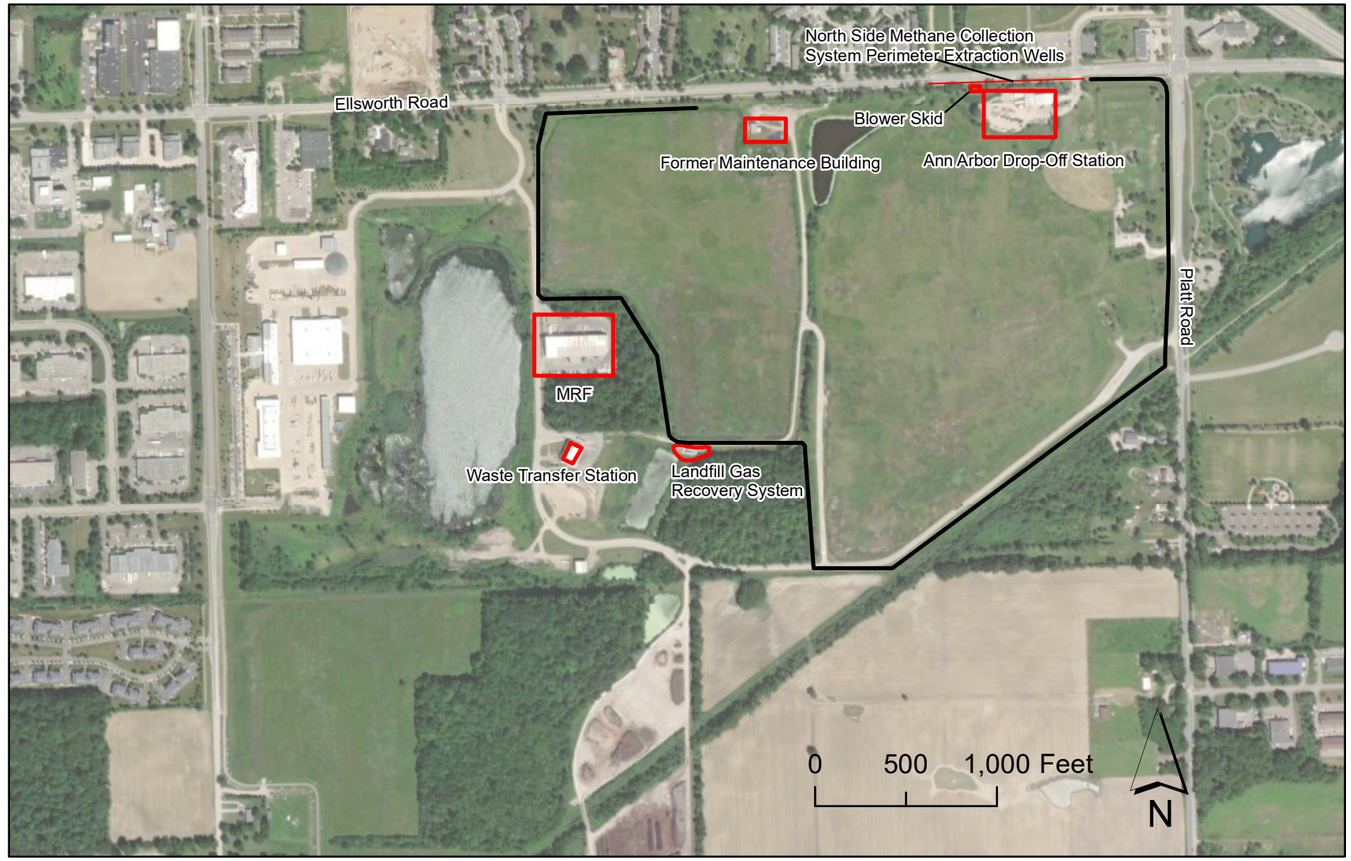
Former Maintenance Building



MP = Monitoring Point
S = Sanitary Sewer Location

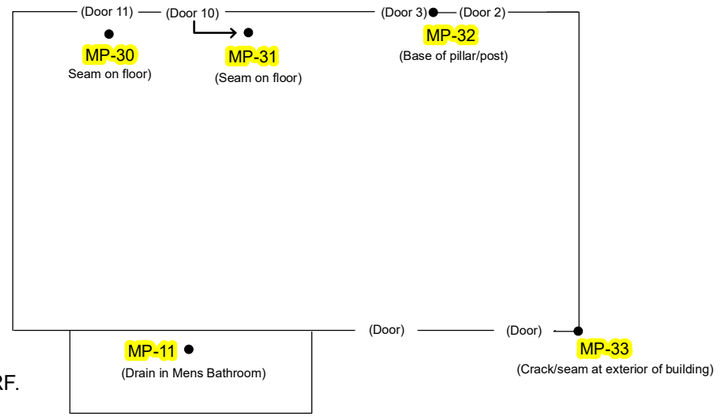
Ann Arbor Drop-Off Station



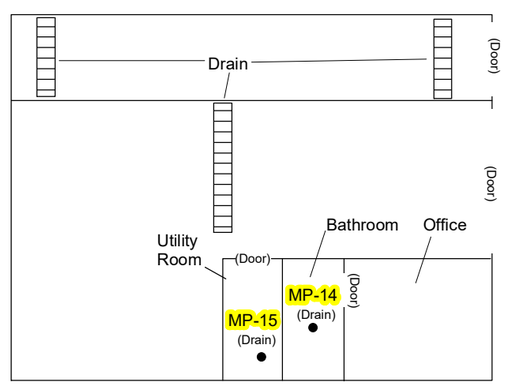


Base Map Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Materials Recovery Facility (MRF) Building



Waste Transfer Station



Notes:
1. MRF Building locations MP-12, MP-13, MP-16 and MP-17 were abandoned after reconfiguration of the MRF. Monitoring Points MP-30 through MP-33 were added in October 2022.

P:\Projects\Ann Arbor\Landfill\GIS\Figures\Gas\Figure 2_Ambient Gas Monitoring Locations_REV2.mxd

TETRA TECH

CHECKED: PJM | DATE: 12/30/2022

ANN ARBOR LANDFILL
ANN ARBOR, MICHIGAN

AMBIENT GAS MONITORING LOCATIONS

FIGURE
2

Gas Monitoring Report
Fourth Quarter 2024

City of Ann Arbor Landfill
Ann Arbor, Michigan

January 6, 2025

TETRA TECH

Gas Monitoring Report
Fourth Quarter 2024

City of Ann Arbor Landfill
Ann Arbor, Michigan

Prepared for:

Erin Donnelly
Environmental Services Manager
City of Ann Arbor
301 E. Huron Street
Ann Arbor, Michigan 48104

Prepared by:

Tetra Tech
1136 Oak Valley Dr., Suite 100
Ann Arbor MI 48108

January 6, 2025

Alison Rauss
Senior Scientist

Patti J. McCall
Principal Hydrogeologist

TABLE OF CONTENTS

1. INTRODUCTION **1**
2. FIELD MONITORING PROCEDURES **1**
3. GAS MONITORING RESULTS **2**
4. NORTH SIDE METHANE COLLECTION SYSTEM **2**
5. CONCLUSIONS **3**

TABLES

Table 1 Semi-Annual Gas Monitoring Locations

Table 2 Gas Monitoring Data - October 8, 2024

Table 3 Gas Monitoring Data - January 10, 2023 through October 8, 2024

FIGURES

Figure 1 Semi-Annual Gas Monitoring Location Map

Figure 2 Ambient Gas Monitoring Locations

1. INTRODUCTION

Tetra Tech completed the fourth quarter 2024 gas monitoring survey on October 8, 2024, at the Ann Arbor Landfill (AALF) located in Ann Arbor, Michigan. Gas monitoring was completed in accordance with the following:

- Addendum to Gas Plan Monitoring Revisions dated May 1, 2008;
- The Natural Resources and Environmental Protection Act (NREPA), 1994 Public Act (PA) 451, as amended, and the rules promulgated under Part 115, specifically Rule (R) 299.4433, which specifies Type II landfill explosive gas control and monitoring requirements; and,
- Gas Monitoring Plan Revisions dated June 4, 2021.

During the spring of 2005, a methane collection system was installed along the north side of the AALF to prevent methane from migrating off the landfill property. The system was operational between July 2005 and February 2022, when it was turned off for repairs and has remained off. This is discussed in greater detail in Section 4. Additionally, methane from Phases I and II of the landfill is actively being recovered and converted to energy using a landfill gas recovery system located south of Phase II. This monitoring represents a semi-annual event.

2. FIELD MONITORING PROCEDURES

During this semi-annual event, gas monitoring was performed at 59 locations associated with the AALF. **Table 1** presents the location, number and name of the monitoring locations, as identified on **Figure 1** and **2**.

The percent of carbon dioxide, oxygen, methane, and methane by the lower explosion limit (LEL) were measured using a Landtec Gem Gas Meter. The meter was calibrated prior to use with a standard of known concentrations for methane and carbon dioxide. Barometric pressure readings were also measured with the Landtec Gem Gas Meter and are reported on **Table 2**. Gas pressure measurements are not applicable within buildings or utility structures as these monitoring locations are at atmospheric pressure.

3. GAS MONITORING RESULTS

In accordance with the NREPA 1994 PA 451, R 229.4433(1)(b), methane gas shall not be more than 100-percent of the LEL (5-percent methane by volume) at or beyond the property boundary. In addition, the AALF Gas Monitoring Plan requires response actions to be taken when methane is detected in excess of 25-percent of the LEL (1.25-percent methane by volume) in onsite utility structures or buildings. It should be noted that a detection of 0.1-percent methane by volume is considered valid when a concurrent LEL value is recorded. Otherwise, such a reading is attributed to meter drift.

Measurements collected during the quarterly survey are reported on **Table 2**. A summary of methane monitoring for the last eight quarterly surveys is presented on **Table 3**. Review of **Table 3** indicates that methane was detected at GP-2S. The methane detection at GP-2S was 39.5 percent methane by volume. Offsite monitoring locations GP-13-99, GP-14-02 and GP-15-02 located on the north side of Ellsworth Road were measured and were non-detect for methane.

4. NORTH SIDE METHANE COLLECTION SYSTEM

As part of the NSMCS, ten Perimeter Extraction Wells (PEWs) were installed along the south side of Ellsworth Road to prevent methane gas from migrating beyond the AALF property boundary.

Given the age of the landfill, the historical data and the lack of detections within the landfill (except for GP-2S and on rare occasion, GP-2D and locations outside the drop of station), the NSMCS may no longer be necessary. It is not unusual for gas monitoring well GP-2S in the landfill to have a methane detection, however the three gas wells across the street (GP-13-99, GP-14-02 and GP-15-02) do not demonstrate migration from GP-2S. The NSMCS has remained off as methane continues to diminish and has not been documented migrating from the landfill.

5. CONCLUSIONS

During this event, methane was detected at GP-2S. Offsite gas sampling demonstrated that the methane is not migrating from the property. To ensure optimal performance of the NSMCS in the event it needs to be restarted, blower skid maintenance will continue

monthly. The NSMCS will remain off unless methane detections indicate that it’s beneficial to restart.

TABLES

TABLE 1

Semi-Annual Gas Sampling Locations

Ann Arbor Landfill
Ann Arbor, Michigan

Sampling Locations	Number of Sampling Points	Gas Sampling Location Names as Identified on Corresponding Figures
Sanitary Sewers	5	S1 through S3, S5 and S6
Storm Sewer Manholes	3	R1, R2 and R6
Indoor Locations	28	MP-1 through MP-8, MP-10, MP-11, MP-14, MP-15, MP-18 through MP-33
Gas Probes	19	GP-1S/1D through GP-5S/5D, GP-6SR-99, GP-7S-98/GP-7D-98 GP-8SR-05/GP-8D-98, GP-13-99, GP-14-02 through GP-16-02
Temporary Gas Probes	2	TGP-1, TGP-2
Piezometer	1	P-3U
Meter Pit	1	MP

Notes:
1. Indoor Locations include: Materials Recovery Facility (MRF), Former Maintenance Building, Ann Arbor Drop Off Center and the Waste Transfer Station.
2. MRF Building locations MP-12, MP-13, MP-16 and MP-17 were abandoned after reconfiguration of the MRF. Monitoring Points MP-30 through MP-33 were added in October 2022.

TABLE 2

Gas Monitoring Data
October 8, 2024
Ann Arbor Landfill
Ann Arbor, Michigan

Monitoring Location	Time		% CO_2	% CH_4	% CH_4 by LEL	% O_2	Landtec Gem Pressure Reading	Barometric Pressure in. Hg
MP-1	10:19	10:20	0	0	0	17.3	NA	29.14
MP-2	10:25	10:26	0	0	0	17.4	NA	29.14
MP-3	10:27	10:28	0	0	0	17.4	NA	29.14
MP-4	10:23	10:24	0	0	0	17.4	NA	29.14
MP-5	10:21	10:22	0	0	0	17.4	NA	29.14
MP-6	11:45	11:46	0	0	0	17.9	NA	29.14
MP-7	11:53	11:54	0	0	0	18.0	NA	29.14
MP-8	11:50	11:51	0	0	0	18.0	NA	29.14
MP-10	11:59	12:00	0	0	0	18.3	NA	29.14
MP-11	9:54	9:55	0	0	0	18.1	NA	29.14
MP-14	10:00	10:01	0	0	0	18.1	NA	29.14
MP-15	9:58	9:59	0	0	0	18.1	NA	29.14
MP-18	11:43	11:44	0	0	0	17.8	NA	29.14
MP-19	11:42	11:43	0	0	0	17.8	NA	29.14
MP-20	11:40	11:41	0	0	0	17.8	NA	29.14
MP-21	11:52	11:53	0	0	0	18.0	NA	29.14
MP-22	11:54	11:55	0	0	0	18.0	NA	29.14
MP-23	11:56	11:57	0	0	0	18.2	NA	29.14
MP-24	11:55	11:56	0	0	0	18.0	NA	29.14
MP-25	11:57	11:58	0	0	0	18.2	NA	29.14
MP-26	11:58	11:59	0	0	0	18.3	NA	29.14
MP-27	11:46	11:47	0	0	0	17.9	NA	29.14
MP-28	11:48	11:49	0	0	0	17.9	NA	29.14
MP-29	11:51	11:52	0	0	0	18.0	NA	29.14
MP-30	9:47	9:48	0	0	0	17.8	NA	29.14
MP-31	9:48	9:49	0	0	0	17.8	NA	29.14
MP-32	9:51	9:52	0	0	0	17.9	NA	29.14
MP-33	9:53	9:54	0	0	0	18.0	NA	29.14
S1 (Sanitary Sewer)	10:17	10:18	1.0	0	0	17.2	NA	29.14
S2	13:00	13:01	0	0	0	17.2	NA	29.14
S3	11:30	11:31	0	0	0	15.4	NA	29.14
S5	12:40	12:41	0.2	0	0	17.8	NA	29.14
S6	12:53	12:54	0	0	0	17.1	NA	29.14
R1 (Storm Sewer)	10:35	10:36	0	0	0	16.6	NA	29.14
R2	11:23	11:24	0	0	0	17.6	NA	29.14
R6	13:14	13:15	0	0	0	17.2	NA	29.14
MP (Meter Pit)	13:01	13:02	0.2	0	0	17.2	NA	29.14
GP-1S	10:37	10:38	29.8	0	0	8.6	-0.01	29.14
GP-1D	10:39	10:40	2.1	0	0	16.1	0.08	29.14
GP-2S	9:20	9:21	37.1	39.5	>100	0.4	0	29.14
GP-2D	9:22	9:23	0.2	0	0	18.2	0	29.14
GP-3S	9:37	9:38	0	0	0	17.8	0.01	29.14
GP-3D	9:35	9:36	0	0	0	17.8	0	29.14
GP-4S	10:08	10:09	0	0	0	17.7	-0.02	29.14
GP-4D	10:10	10:11	3.2	0	0	17.0	-0.02	29.14
GP-5S	11:00	11:01	10.4	0	0	14.1	0	29.14
GP-5D	11:01	11:02	2.4	0	0	16.4	0	29.14
GP-6SR-99	12:41	12:42	9.8	0	0	13.5	0	29.14
GP-7S-98	9:30	9:31	30	0	0	11.5	0.4	29.14
GP-7D-98	9:28	9:29	18.7	0	0	12.5	0.3	29.14
GP-8SR-05	11:19	11:20	0	0	0	17.5	0	29.14
GP-8D-98	11:13	11:14	10.4	0	0	14.4	0	29.14
GP-13-99	12:50	12:51	22.1	0	0	11.4	0	29.14
GP-14-02	13:30	13:31	3.0	0	0	16.5	0	29.14
GP-15-02	13:20	13:21	0	0	0	17.1	-0.1	29.14
GP-16-02	13:03	13:04	23.0	0	0	12.3	-0.2	29.14
TGP-1	12:59	13:00	0	0	0	17.1	0	29.14
TGP-2	11:06	11:07	10.5	0	0	14.6	-0.4	29.14
P-3U	10:53	10:54	0	0	0	17.0	0.01	29.14

Notes:
NA = Not Applicable
NM = Not Measured
% CO_2 = Percent Carbon Dioxide
% CH_4 = Percent Methane by volume
LEL = Lower Explosive Limit
% O_2 = Percent Oxygen
in. Hg = Inches of Mercury

TABLE 3

Gas Monitoring Data
January 10, 2023 through October 8, 2024
Ann Arbor Landfill
Ann Arbor, Michigan

Monitoring Location		January 10, 2023		April 4, 2023		July 11, 2023		October 5, 2023		January 9, 2024		April 2, 2024		July 11, 2024		October 8, 2024	
		% Methane by Volume	% of LEL	% Methane by Volume	% of LEL	% Methane by Volume	% of LEL	% Methane by Volume	% of LEL	% Methane by Volume	% of LEL	% Methane by Volume	% of LEL	% Methane by Volume	% of LEL	% Methane by Volume	% of LEL
Atmospheric Pressure		29.07 to 29.09 in Hg		29.05 in Hg		28.99 to 29.03 in Hg		29.14 to 29.16 in Hg		28.66 in Hg		28.66 to 28.77 in Hg		29.17 to 29.19 in Hg		29.14 in Hg	
Maintenance Building	MP-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ann Arbor Drop-off Station Building	MP-7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-18	**0.6**	**4.0**	0	0	0	0	**4.5**	**80**	**1.0**	**21**	**6.5**	**56**	0	0	0	0
	MP-19	**2.2**	**29**	0	0	0	0	0	0	**3.0**	**59**	**0.9**	**19**	0	0	0	0
	MP-20	**0.6**	**10**	0	0	0	0	**3.0**	**59**	0	0	**0.8**	**16**	0	0	0	0
	MP-21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-28	0	0	0	0	**4.1**	**79**	0	0	0	0	0	0	0	0	0	0
	MP-29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Guard House	MP-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MRF Building	MP-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waste Transfer Station	MP-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MP-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sanitary Sewer	S1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S2	0	0	0	0	NM	NM	NM	NM	NM	NM	0	0	NM	NM	0	0
	S3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S5	0	0	0	0	0	0	0	0	0	0	0	0	NM	NM	0	0
	S6	0	0	0	0	NM	NM	0	0	NM	NM	0	0	NM	NM	0	0
Storm Sewer	R1	0	0	0	0	0	0	0	0	0	0	0	0	NM	NM	0	0
	R2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	R6	0	0	0	0	NM	NM	NM	NM	NM	NM	0	0	NM	NM	0	0
Water Meter Pit Manhole	MP	0	0	0	0	NM	NM	0	0	NM	NM	NM	NM	NM	NM	0	0
Gas Probe	GP-1S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-1D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-2S	**5.4**	**>100**	0	0	**5.9**	**>100**	**31.2**	**>100**	**12.4**	**>100**	**0.3**	**6.0**	**8.4**	**>100**	**39.5**	**>100**
	GP-2D	0	0	0	0	0	0	0	0	**0.1**	**2**	0	0	0	0	0	0
	GP-3S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-3D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-4S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-4D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-5S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-5D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-6SR-99	0	0	0	0	NM	NM	NM	NM	0	0	0	0	NM	NM	0	0
	GP-7S-98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-7D-98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-8SR-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-8D-98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-13-99	NM	NM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-14-02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-15-02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GP-16-02	0	0	0	0	NM	NM	NM	NM	NM	NM	0	0	NM	NM	0	0
Temporary Gas Probes	TGP-1	0	0	0	0	NM	NM	NM	NM	NM	NM	0	0	NM	NM	0	0
	TGP-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Piezometer	P-3U	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:
Previous data not shown, available upon request.
% = Percent
LEL = Lower Explosive Limit
in Hg = Inches of Mercury
Shading indicates an action required per the City of Ann Arbor Landfill Gas Monitoring Plan and Addendum.
Storm sewer R1 was buried in July 2024 by soil erosion and sedimentation control measures from a recent dredging activity nearby.

FIGURES



P:\Projects\Ann Arbor\Landfill\GIS\Figures\Gas\Figure 1_Semi-Annual Gas Monitoring Location Map.mxd

SOURCE: 2008 United States Geological Survey Aerial

Semi-Annual Gas Monitoring Location (April and October)

Slurry Wall*

R1	Storm Sewer Location
S1	Sanitary Sewer Location
GP-1S	Gas Probe Location
TGP-1	Temporary Gas Probe Location
P-3U	Piezometer Location
MP	Meter Pit

N

0 225 450 900 Feet

*Slurry Wall Location Is Approximate.

TETRA TECH

CHECKED: PJM

DATE: 09/27/2021

ANN ARBOR LANDFILL
ANN ARBOR, MICHIGAN

SEMI-ANNUAL GAS MONITORING LOCATION MAP

FIGURE

1

Attachment C: GHG Reports (2023)

e-GGRT Reporting Year Comparison Report
Carbon Dioxide Equivalent (CO2e) Quantities

Facility: ANN ARBOR SLF PHASE I & II

Address: 4150 PLATT RD
ANN ARBOR, MI 48108

GHGRP ID: 525100

IMPORTANT: This report presents data from the latest certified annual reports for the last six reporting years (2018 to 2023).

	RY2018 v1	RY2019 v2	RY2020 v1	RY2021 v1	RY2022 v1	RY2023 v1
	mtons CO2e	mtons CO2e	mtons CO2e	mtons CO2e	mtons CO2e	mtons CO2e
Direct emissions in CO2e (C-II, SS-TT)	19,940.5	20,231.0	18,417.5	31,016.3	21,436.5	29,610.8
Biogenic CO2 emissions (C-II, SS-TT)	0.0	0.0	0.0	0.0	0.0	0.0
CO2 received for injection (UU)	N/A	N/A	N/A	N/A	N/A	N/A
CO2 sequestered (RR)	N/A	N/A	N/A	N/A	N/A	N/A
CO2e from products supplied (LL-QQ)* **	0.0	0.0	0.0	0.0	0.0	0.0

*Negative numbers may result from the quantity of exports exceeding the quantity of imports.

**In some cases the CO2e quantity from a supplier may be Confidential Business Information (CBI) and will not be published.

e-GGRT Reporting Year Comparison Report
Metric Tons of Greenhouse Gases by Subpart

Facility: ANN ARBOR SLF PHASE I & II

Address: 4150 PLATT RD
ANN ARBOR, MI 48108

GHGRP ID: 525100

IMPORTANT: This report presents data from the latest certified annual reports

for the last six reporting years (2018 to 2023).

	RY2018 v1	RY2019 v2	RY2020 v1	RY2021 v1	RY2022 v1	RY2023 v1
	mtons	mtons	mtons	mtons	mtons	mtons
Subpart HH						
Methane	797.62	809.24	736.7	1,240.65	857.46	1,184.43

Attachment D: Quarterly Wastewater Sampling Report (4th Quarter, 2024)

Wastewater Monitoring Report
Fourth Quarter 2024

Industrial User Permit No. 20240615

City of Ann Arbor Landfill
Ann Arbor, Michigan

January 27, 2025

TETRA TECH

Wastewater Monitoring Report
Fourth Quarter 2024

Industrial User Permit No. 20240615

City of Ann Arbor Landfill
Ann Arbor, Michigan

Prepared for:

Paul Matthews
Interim Manager, Public Works
City of Ann Arbor
Wheeler Service Center
4251 Stone School Road
Ann Arbor, Michigan 48108

Prepared by:

Tetra Tech
1136 Oak Valley Drive, Suite 100
Ann Arbor, Michigan 48108

January 27, 2025

TETRA TECH

TABLE OF CONTENTS

1. INTRODUCTION.....1

2. PURGE WELL SAMPLE COLLECTION.....1

3. ANALYTICAL RESULTS.....1

4. DISCHARGE VOLUMES.....2

5. MAINTENANCE.....4

6. REPORT CERTIFICATION.....6

TABLES

Table 1 Wastewater Laboratory Analytical Results

Table 2 Discharge Readings and Flow Rates

Table 3 Quarterly Discharge Volume

Table 4 Average Daily Discharge Volume

FIGURES

Figure 1 Wastewater Sampling Location Map

APPENDICES

Appendix A Wastewater Sampling Records

Appendix B Laboratory Analytical Results – Eurofins

Appendix C Laboratory Analytical Results – City of Ann Arbor Environmental Services Laboratory

1. INTRODUCTION

June 15, 2024 is the effective date for Industrial User Permit (IUP) 20240615. The IUP allows discharge from the Ann Arbor Landfill (AALF) into the City of Ann Arbor sanitary sewer system, through June 1, 2029. IUP 20240615 identifies five wastewater discharge locations, Outfalls 001, 003, 004, 005 and 006. These outfall locations are identified on **Figure 1** and are as follows:

Outfall 001: Groundwater Purge Well PW-1R-12
Outfall 003: Leachate Discharge from Manhole MH-A
Outfall 004: Leachate Discharge from Manhole MH-B
Outfall 005: Groundwater Purge Well PW-2R-22
(replaced PW-2R-01 in December 2022)
Outfall 006: Groundwater Purge Well PW-3R-12

Purge Wells PW-1R-12 and PW-3R-12 are sampled quarterly. The three remaining outfalls (PW-2R-22, MH-A and MH-B) will only be sampled if requested, when each calculated discharge rate exceeds the permit conditions identified in the IUP. Tetra Tech will notify the City of Ann Arbor Wastewater Treatment Plant Operator, who will determine if sampling is needed. In October 2024, Tetra Tech personnel collected water samples from purge wells PW-1R-12 and PW-3R-12. This sampling survey represents a quarterly event for the AALF.

2. PURGE WELL SAMPLE COLLECTION

Two purge well samples, PW-1R-12 and PW-3R-12, were analyzed in the field for pH, temperature, specific conductance, oxidation reduction potential (ORP) and dissolved oxygen. A record of the field sampling information from October 9, 2024, is provided in **Appendix A**.

3. ANALYTICAL RESULTS

Laboratory analytical results provided by Eurofins and City of Ann Arbor Environmental Services Laboratory are located in **Appendix B** and **Appendix C** respectively. Analytical results for the two outfalls are summarized in the database tables provided in **Table 1**.

Analytical results for wastewater samples collected during the fourth quarter are generally consistent with historical data. The 1,4-dioxane concentration reported in PW-1R-12 remained the same as the July 2024 sampling and is at a concentration consistent with historical data. The 1,4-dioxane concentration detected in PW-3R-12 this quarter increased slightly from the July 2024 sampling but is also consistent with historical data.

Consistent with historical trends, vinyl chloride is not detected in PW-1R-12. The vinyl chloride concentration in PW-3R-12 increased slightly from the July 2024 sampling and remains at a concentration consistent with recent trends.

Phosphorus previously not detected, had a change in reporting limit from 50 micrograms/liter (ug/L) to 20 ug/L in April 2024. As a result, PW-1R-12 has a detection reported.

4. DISCHARGE VOLUMES

Static water level measurements are recorded for the purge wells at the beginning of each month to ensure the well screens are not being exposed. Water levels for the fourth quarter 2024 were maintained at or above the well screen for PW-1R-12 and PW-3R-12, but not PW-2R-22. Purge well PW-2R-22 was off during the October and November monthly visits. The power to PW-2R-22 was restored on November 11, 2024. On December 2, 2024, the PW-2R-22 water level was below the top of the well screen level. Tetra Tech personnel were not able to adjust the flow at the well due to a broken valve in the meter pit. Additional details on the maintenance issues are discussed in Section 5.

Flow meter readings from all five outfalls are recorded monthly and the static water levels are measured at each purge well. The purge well flow readings are obtained from the City of Ann Arbor’s Automated Meter Reading (AMR) system prior to field work. The AMR records water discharge via satellite, which is used to calculate the discharge volumes and flow rates. AMR values from the City of Ann Arbor’s AquaHawk AMR system were used for purge wells when available. AMR readings were available for purge well PW-2R-

22 during the fourth quarter of 2024. AMR readings were not available for purge wells PW-1R-12 and PW-3R-12 during the fourth quarter of 2024.

The PW-3R-12 AMR readings stopped advancing after March 25, 2024. The PW-3R-12 discharge calculations for the fourth quarter of 2024 through October 2024 are interpolated based on the calculated flow using the March 1 to March 24, 2024 AMR readings. The discharge calculations for November and December 2024 were interpolated from the December 2024 and January 2025 flow rates displayed on the meter installed in November 2024. The new meter in PW-3R-12 requires programming to connect to the Aquahawk system, which is anticipated to be completed in the first quarter 2025.

The PW-1R-12 AMR readings stopped advancing after May 7, 2024. The PW-1R-12 discharge calculations for the fourth quarter of 2024 are interpolated based on the calculated flow using the April 3 to May 7, 2024 AMR readings. The meter in PW-1R-12 requires replacement.

An estimate of the discharge rate is calculated, and flow adjustments are made as necessary in the field. A record of the discharge meter readings, monthly discharge from each outfall and permitted discharge limits are included on **Table 2.** The estimated discharge volume for each month of the quarter is presented on **Table 3**. Average daily discharge volumes, in gallons per day, for each outfall are provided on **Table 4**.

The flow rates for this quarter at each purge well are as follows:

- PW-1R-12: Interpolated 15.13 gallons per minute (gpm)
- PW-2R-22: Range 0 to 16.88 gpm
- PW-3R-12: Interpolated 18.59 to 33.72 gpm

The target flow rates for PW-1R-12, PW-2R-22 and PW-3R-12 are 20 gpm, 10 gpm and 50 gpm, respectively. The target flow rate for PW-2R-22 is lower than the minimum rate (17.5 gpm) required for potential sampling as identified in the IUP.

Currently, AMR is not available for MH-A or MH-B. Tetra Tech will continue to visit each manhole monthly to record the discharge volumes. If there is no discharge in a given month, the pump will be manually turned on at MH-A and MH-B to ensure each is operational.

5. MAINTENANCE

Every month muriatic acid is added to each of the three maintenance wells surrounding each purge well, provided the purge well is operational. The purpose is to decrease formation of iron bacteria between routine rehabilitation events that fouls the well screen and soil formation. One gallon of muriatic acid was added to all maintenance wells surrounding PW-1R-12 in October, November and December of this quarter. One gallon of muriatic acid was added to all maintenance wells surrounding PW-2R-22 in December of this quarter. Two gallons of muriatic acid were added to all maintenance wells surrounding PW-3R-12 in October, November and December of this quarter.

On September 10, 2024, Tetra Tech personnel were decreasing the flow for PW-2R-22 and the flow valve bent. Since the flow could no longer be adjusted with the valve, the power to the well was turned off and the pipe wrench was missing.

On October 9, 2024, Tetra Tech personnel had difficulty turning the PW-2R-22 sample valve that is used to obtain monthly pressure readings and sample the well during the semi-annual groundwater sampling events. On November 11, 2024, Stearns personnel visited the landfill and instructed Tetra Tech personnel on how to use a pipe wrench on the portion of the valve remaining to change the flow. The power to PW-2R-22 was restored on November 11, 2024.

On December 19, 2024, Tetra Tech personnel observed sounds indicative of an exposed screen at PW-2R-22. Because the valve to adjust the flow is within a confined space, and the well was turned off until Stearns personnel could resolve the flow issue. PW-2R-22 remained off for the remainder of the fourth quarter.

The PW-3R-12 meter was replaced with a MAG meter by Stearns on November 12, 2024. Although the meter was replaced, the mag meter has not been programmed to communicate with the City of Ann Arbor's AquaHawk AMR system. This will be completed in the first quarter of 2025.

The PW-1R-12 meter requires replacement. Replacing the PW-1R-12 meter with a MAG meter requires additional work and costs to install, including installing a new manhole and replacing a portion of the discharge piping with two-inch piping. The PW-1R-12 meter may instead be replaced with a traditional meter. Options for replacing this meter are still being determined for PW-1R-12.

Tetra Tech will continue monthly site visits to the purge wells to ensure that target flow rates are maintained and that the well screens are not exposed due to excessive drawdown.

6. REPORT CERTIFICATION

The following certification is required by Part III, Section C of Permit 20240615:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Paul Matthews
Interim Manager, City of Ann Arbor Public Works

TABLES

Table 1 (Page 1 of 2)

Wastewater Laboratory Analytical Results - PW-1R-12 (Outfall 001)

City of Ann Arbor Industrial User Permit 20240615
Ann Arbor, Michigan

Parameters	Units	Reporting Limit	Daily Limit[2]	January 11 2023	April 4 2023*^	July 12 2023	October 4 2023	January 10 2024	April 3 2024^*	July 9 2024	October 9 2024
Field											
pH	S.U.	1-14	5.0 min - 10.0 max	7.00	6.97	6.78	6.64	7.19	6.76	7.01	6.85
Specific Conductivity	µS	1	NS	1,896	NR	1,284	1,862	1,739	1,511	1,529	1,191
Temperature	C	0.1	NS	12.80	13.50	15.3	12.9	12.1	12.5	12.7	13.2
Dissolved Oxygen	mg/L	0.1	NS	5.36	NR	2.30	6.59	4.58	5.94	4.51	5.91
ORP	mV	-(whole value)	NS	-47.2	-99.4	145.7	-25.2	-60.0	-6.7	-54.1	-45.1
ANALYTE											
1,4-Dioxane (#)	ug/L	(#)	Report	180	177	85	170	200	180	160	160
Chemical Oxygen Demand	ug/L	(#)	NS	NT	36,000	NT	NT	NT	33,000	NT	NT
Ammonia (#)	ug/L	(#)	40,000	15,100	12,600	6,050	13,300	12,350	10,000	10,950	12,100
Cyanide, Total	ug/L	(#)	NS	NT	<5.0	NT	NT	NT	<5.0	NT	NT
Cyanide, Available	ug/L	(#)	NS	NT	<2.0	NT	NT	NT	<2.0 F1	NT	NT
Total Phenols	ug/L	(#)	NS	NT	<10	NT	NT	NT	<10	NT	NT
Total Dissolved Solids	ug/L	(#)	NS	NT	1,040,000	NT	NT	NT	1,052,000	NT	NT
Total Suspended Solids (#)	ug/L	(#)	NS	NT	14,000	NT	NT	NT	13,000	NT	NT
Phosphorus (P)	ug/L	(#)	NS	NT	<50	NT	NT	NT	30	28.5	24.2
Total Kjeldahl Nitrogen (TKN)	ug/L	(#)	NS	NT	13,000	NT	NT	NT	15,000	NT	NT
Oil and Grease (HEM) (#)	ug/L	(#)	NS	NT	<4,800	NT	NT	NT	<4,800	NT	NT
Nonpolar Oil and Grease (SGT-HEM) (#)	ug/L	(#)	NS	NT	<4,800	NT	NT	NT	<4,800	NT	NT
Biochemical Oxygen Demand	ug/L	(#)	NS	NT	<2,000	NT	NT	NT	<2,000	NT	NT
TOTAL METAL ANALYSIS[(a)]											
Antimony	ug/L	(#)	NS	NT	<10	NT	NT	NT	<10	NT	NT
Arsenic	ug/L	(#)	Report	NT	<10	NT	NT	NT	<10	NT	NT
Beryllium	ug/L	(#)	NS	NT	<5.0	NT	NT	NT	<5.0	NT	NT
Cadmium	ug/L	(#)	NS	NT	<2.0	NT	NT	NT	<2.0	NT	NT
Chromium	ug/L	(#)	NS	NT	<5.0	NT	NT	NT	<5.0	NT	NT
Copper	ug/L	(#)	4,000	NT	<25	NT	NT	NT	<25	NT	NT
Lead	ug/L	(#)	500	NT	<5.0	NT	NT	NT	<5.0	NT	NT
Mercury	ug/L	(#)	NS	NT	<0.2	NT	NT	NT	<0.2	NT	NT
Molybdenum	ug/L	(#)	Report	NT	<40	NT	NT	NT	<40	NT	NT
Nickel	ug/L	(#)	3,000	NT	<40	NT	NT	NT	<40	NT	NT
Selenium	ug/L	(#)	Report	NT	<15	NT	NT	NT	<15	NT	NT
Silver	ug/L	(#)	NS	NT	<5.0	NT	NT	NT	<5.0	NT	NT
Thallium	ug/L	(#)	NS	NT	<10	NT	NT	NT	<10	NT	NT
Zinc	ug/L	(#)	3,000	NT	<50	NT	NT	NT	<50	NT	NT
VOLATILE ORGANIC COMPOUNDS[(a)]											
Vinyl chloride	ug/L	(#)	Report	<5.0	<5.0	<5.0	<1.0	<5.0	<5.0	<5.0	<5.0
SEMIVOLATILE COMPOUNDS[(a)] (#)											
DIOXIN SCREEN[(a)]											
2,3,7,8 -TCDD	ng/uL	(#)	NL	NT	NEG HH3	NT	NT	NT	NEG	NT	NT
PCB/PESTICIDE ANALYSIS[(a)] (#)											
PER- AND POLYFLUOROALKYL SUBSTANCES											
Perfluorooctanoic acid (PFOA)	ng/L	(#)	Report	NT	3.7	NT	NT	NT	<1.7	NT	NT
Perfluorooctane sulfonate (PFOS)	ng/L	(#)	Report	NT	<1.7	NT	NT	NT	<1.7	NT	NT
TENTATIVELY IDENTIFIED COMPOUNDS											
Methane, dibromofluoro-	ug/L	(#)	NA	NT	44 TJN	NT	NT	NT	47 TJN	NT	NT
Nonane, 3-methyl-5-propyl-	ug/L	(#)	NA	NT	NT	NT	NT	NT	17 TJN	NT	NT
Tetradecane	ug/L	(#)	NA	NT	NT	NT	NT	NT	13 TJN	NT	NT
Decane, 3-methyl-	ug/L	(#)	NA	NT	NT	NT	NT	NT	11 TJN	NT	NT

Notes:
Highlighted results indicate detection above the laboratory reporting limit
S.U. = standard units
µS = microsiemens
C = degrees Celcius
mg/L = milligram per liter
mV = millivolt
ug/L = microgram per liter
ng/L = nanogram per liter
NR = Not Reliable
NA = Not Applicable
NL = No daily limit in permit
NS = Daily Limit not specified on Industrial User Permit 20240615
NT = Not Tested
T = Result is a tentatively identified compound (TIC) and an estimated value
N = Presumptive evidence of material.
F1 = MS and/or MSD recovery exceeds control limits
H = Sample was prepped or analyzed beyond the specified holding time
H3 = Sample was received and analyzed past holding time
J = Indicates an estimated value
NEG = Negative for presence
(a) = All other VOCs, SVOCs, dioxin screen, PCBs, metals and pesticides analyzed, as required per Permit number 20240615 (effective July 15, 2024 - June 1, 2029) are below the current reporting limits.
(#) See analytical report for reporting limit and dilution factor.
[2]Daily limit values are in micrograms per liter with the exception of pH (standard units).
*^ BOD was sampled on June 5, 2023.
^*PW-3R-12 ammonia, phosphorous and biochemical oxygen demand was sampled on April 9, 2024 due a lab hold time error with the April 3, 2024 sample.

Table 1 (Page 2 of 2)

Wastewater Laboratory Analytical Results - PW-3R-12 (Outfall 006)

City of Ann Arbor Landfill Industrial User Permit 20240615
Ann Arbor, Michigan

Parameters	Units	Reporting Limit	Daily Limit[2]	January 11 2023	June 5 2023*^	July 12 2023	October 4 2023	February 5 2024^^	April 3 2024^*	July 9 2024	October 9 2024
FIELD											
pH	S.U.	1-14	5.0 min - 10.0 max	6.97	6.69	6.58	6.70	6.87	6.89	6.79	6.78
Specific Conductivity	µS	1	NS	2,287	1,929	2,106	2,271	2,072	1,804	2,013	1,789
Temperature	C	0.1	NS	13.30	16.30	14.0	14.1	13.0	12.5	13.7	16.0
Dissolved Oxygen	mg/L	0.1	NS	3.00	0.02	2.93	8.43	4.04	6.46	1.87	3.33
ORP	mV	-(whole value)	NS	-28.1	-169.0	-30.1	2.1	-53.1	7.2	-53.1	-35.9
ANALYTE											
1,4-Dioxane (#)	ug/L	(#)	Report	157	20	170	180	150	210	190	200
Chemical Oxygen Demand	ug/L	(#)	NS	NT	22,000	NT	NT	NT	30,000	NT	NT
Ammonia (#)	ug/L	(#)	40,000	23,700	2,000	24,900	23,250	17,080	15,900	20,900	28,100
Cyanide, Total	ug/L	(#)	1,000	NT	<5.0	NT	NT	NT	<5.0	NT	NT
Cyanide, Available	ug/L	(#)	NS	NT	<5.0	NT	NT	NT	<2.0	NT	NT
Total Phenols	ug/L	(#)	NS	NT	<10	NT	NT	NT	<10	NT	NT
Total Dissolved Solids	ug/L	(#)	NS	NT	1,140,000	NT	NT	NT	1,206,000	NT	NT
Total Suspended Solids (#)	ug/L	(#)	250,000	NT	10,000	NT	NT	NT	6,000	NT	NT
Phosphorus (P)	ug/L	(#)	NS	NT	<50	NT	NT	NT	30	NT	NT
Total Kjeldahl Nitrogen (TKN)	ug/L	(#)	NS	NT	2,900	NT	NT	NT	23,000	NT	NT
Oil and Grease (HEM) (#)	ug/L	(#)	NS	NT	<4,700	NT	NT	NT	<4,700	NT	NT
Nonpolar Oil and Grease (SGT-HEM) (#)	ug/L	(#)	NS	NT	<4,700	NT	NT	NT	<4,700	NT	NT
Biochemical Oxygen Demand	ug/L	(#)	NS	NT	<2,000	NT	NT	NT	<2,000	NT	NT
TOTAL METAL ANALYSIS											
Antimony	ug/L	(#)	NS	NT	<10	NT	NT	NT	<10	NT	NT
Arsenic	ug/L	(#)	Report	NT	<10	NT	NT	NT	<10	NT	NT
Beryllium	ug/L	(#)	NS	NT	<5.0	NT	NT	NT	<5.0	NT	NT
Cadmium	ug/L	(#)	1,000	NT	<2.0	NT	NT	NT	<2.0	NT	NT
Chromium	ug/L	(#)	NS	NT	<5.0	NT	NT	NT	<5.0	NT	NT
Copper	ug/L	(#)	NS	NT	<25	NT	NT	NT	<25	NT	NT
Lead	ug/L	(#)	500	NT	<5.0	NT	NT	NT	<5.0	NT	NT
Mercury	ug/L	(#)	NS	NT	<0.2	NT	NT	NT	<0.2	NT	NT
Molybdenum	ug/L	(#)	Report	NT	<40	NT	NT	NT	<40	NT	NT
Nickel	ug/L	(#)	3,000	NT	<40	NT	NT	NT	<40	NT	NT
Selenium	ug/L	(#)	Report	NT	<15	NT	NT	NT	<15	NT	NT
Silver	ug/L	(#)	NS	NT	<5.0	NT	NT	NT	<5.0	NT	NT
Thallium	ug/L	(#)	NS	NT	<10	NT	NT	NT	<10	NT	NT
Zinc	ug/L	(#)	3,000	NT	<50	NT	NT	NT	<50	NT	NT
VOLATILE ORGANIC COMPOUNDS[(a)]											
Toluene	ug/L	(#)	NS	NT	5.5	NT	NT	NT	<5.0	NT	NT
trans-1-2-Dichloroethene	ug/L	(#)	NS	NT	2.3	NT	NT	NT	<5.0	NT	NT
Vinyl chloride	ug/L	(#)	Report	28	12	32	49	37	37	28	32
SEMIVOLATILE COMPOUNDS[(a)] (#)											
DIOXIN SCREEN[(a)]											
2,3,7,8 -TCDD	ng/uL	(#)	NL	NT	NEG	NT	NT	NT	NEG	NT	NT
PCB/PESTICIDE ANALYSIS[(a)] (#)											
PER- AND POLYFLUOROALKYL SUBSTANCES											
Perfluorooctanoic acid (PFOA)	ng/L	(#)	Report	NT	2.8	NT	NT	NT	10	NT	NT
Perfluorooctane sulfonate (PFOS)	ng/L	(#)	Report	NT	<1.7	NT	NT	NT	<1.7	NT	NT
TENTATIVELY IDENTIFIED COMPOUNDS											
Methane, dibromofluoro-	NA	(#)	NA	NT	8.9 TJN	NT	NT	NT	NT	NT	NT
Ethene, 1,2-dichloro-, (Z)-	NA	(#)	NA	NT	6.0 TJN	NT	NT	NT	NT	NT	NT
1-Hexanol, 2-ethyl-	NA	(#)	NA	NT	220 TJN	NT	NT	NT	NT	NT	NT
Unknown	NA	(#)	NA	NT	9.4 TJ	NT	NT	NT	NT	NT	NT
Unknown	NA	(#)	NA	NT	11 TJ	NT	NT	NT	NT	NT	NT

Notes:
Highlighted results indicate detection above the laboratory reporting limit.
S.U. = standard units
µS = microsiemens
C = degrees Celcius
mV = millivolts
mg/L = milligram per liter
ug/L = microgram per liter
ng/uL = nanograms per microliter
NA = Not Applicable
NL = No daily limit in permit
NS = Daily Limit not specified on Industrial User Permit 20240615
NT = Not Tested
T = Result is a tentatively identified compound (TIC) and an estimated value
J = Indicates an estimated value
N = Presumptive evidence of material.
NEG = Negative for presence
(a) = All other VOCs, SVOCs, dioxin screen, PCBs, metals and pesticides analyzed, as required per Permit number 20240615 (effective July 15, 2024 - June 1, 2029) are below the current reporting limits.
(#) See analytical report for reporting limit and dilution factor.
[2]Daily limit values are in micrograms per liter with the exception of pH (standard units).
*^PW-3R-12 was not operational during the semi-annual event but was sampled using a peristaltic pump within the same quarter.
^^PW-3R-12 was not operational during the semi-annual event but was sampled within the same quarter once well was operational.
^*PW-3R-12 ammonia, phosphorous and biochemical oxygen demand was sampled on April 9, 2024 due a lab hold time error with the April 3, 2024 sample. Available cyanide was sampled on April 9, 2023 due to a preservative error with the April 3, 2024 sample.

Table 2 (Page 1 of 2)

Discharge Readings and Flow Rates

City of Ann Arbor Industrial User Permit 20240615
Ann Arbor, Michigan

	Meter Location					
	PW-1R-12			PW-3R-12		
Date	Meter Reading (ft^3)	Total Discharge (gal)	Discharge Rate (gpm)	Meter Reading (ft^3)	Total Discharge (gal)	Discharge Rate (gpm)
1/1/2024	*4,361*	*748,000*	*16.76*	*8,360*	*0*	*0.00*
1/10/2024	4,681	*987,360*	17.14	8,360	*0*	0.00
2/1/2024	*5,484*	*840,004*	*18.82*	*9,822*	*1,093,576*	*24.50*
2/5/2024	5,631	710,600	13.71	10,093	1,296,284	25.01
3/1/2024	*6,558*	*803,352*	*19.24*	*11,758*	*1,448,128*	*34.68*
3/4/2024	6,669	776,424	19.26	11,955	1,392,776	34.54
4/1/2024	*7,592*	*773,432*	*17.33*	*NA*	*1,505,261*	*33.72*
4/3/2024	7,654	736,780	17.06	NA	1,456,704	33.72
5/1/2024	*8,483*	*666,468*	*15.43*	*NA*	*1,456,704*	*33.72*
5/7/2024	8,644	740,520	15.13	NA	1,602,374	33.72
6/1/2024	*NA*	*675,403*	*15.13*	*NA*	*1,432,426*	*32.09*
6/3/2024	NA	588,254	15.13	NA	1,141,085	29.35
7/1/2024	*NA*	*479,318*	*11.10*	*NA*	*1,277,044*	*29.56*
7/9/2024	NA	610,042	11.77	NA	1,665,498	32.13
8/1/2024	*NA*	*675,403*	*15.13*	*NA*	*1,505,261*	*33.72*
8/5/2024	NA	588,254	15.13	NA	1,311,034	33.72
9/1/2024	*NA*	*675,403*	*15.13*	*NA*	*1,505,261*	*33.72*
9/3/2024	NA	631,829	15.13	NA	1,408,147	33.72
10/1/2024	*NA*	*653,616*	*15.13*	*NA*	*1,456,704*	*33.72*
10/9/2024	NA	784,339	15.13	NA	1,748,045	33.72
11/1/2024	*NA*	*675,403*	*15.13*	*NA*	*1,505,261*	*33.72*
11/4/2024	NA	566,467	15.13	NA	1,262,477	33.72
12/1/2024	NA	*653,616*	*15.13*	*NA*	*1,161,533*	*18.59*
12/2/2024	NA	610,042	15.13	NA	*1,048,464*	*24.27*
1/1/2025	*NA*	*675,403*	*15.13*	*NA*	*1,024,042*	*22.94*
1/8/2025	NA	806,126	15.13	NA	1,222,243	22.94

Notes:
ft^3 = cubic feet of water

gal = gallons

gpm = gallons per minute

NA = not available

Italics indicate estimated values for the previous month's discharge used on Table 3.

City of Ann Arbor Automated Meter Readings (AMR) were obtained using the City's AquaHawk tool.

AMR readings were used for PW-1R-12 and PW-3R-12 during the first quarter of 2024.

On December 1, 2023 the PW-3R-12 manhole was observed to have standing water and the cleanout had water flowing from the top. The well was turned off and remained off for the remainder of the fourth quarter of 2023 until the discharge line could be jet rodded on January 11, 2024; and the power restored.

The PW-3R-12 AMR readings stopped advancing after March 25, 2024. The calculations for April 2024 through October 2024 are interpolated based on the calculated flow using the March 1, 2024 to March 24, 2024 AMR readings during periods the well was operational.

PW-1R-12 AMR readings stopped advancing after May 7, 2024. The calculations for May 2024 through December 2024 are interpolated based on the calculated flow using the April 3, 2024 to May 7, 2024 AMR readings during periods the well was operational.

Well rehabilitation tasks were completed on PW-1R-12 and PW-3R-12 during the second quarter of 2024. PW-1R-12 was turned off from June 10 through June 18, 2024 for well rehabilitation and maintenance. The PW-1R-12 control box and pump were replaced during this time. PW-3R-12 was turned off from May 29 through June 4, 2024 for well rehabilitation.

The meter at PW-1R-12 needs to be replaced. Replacement for the PW-1R-12 meter is being determined. The discharge numbers are extrapolated from the most recent discharge rate before the meter stopped working.

The PW-3R-12 meter was replaced in November 2024, however AMR readings were not available for this meter during the fourth quarter of 2024. Prior to the meter replacement, discharge numbers were extrapolated from the most recent discharge rate before the meter stopped working. The November and December 2024 adischarge numbers were extrapolated based on the flow rate reading on the new meter.

Discharge Readings and Flow Rates

City of Ann Arbor Industrial User Permit 20240615
Ann Arbor, Michigan

Meter Location									
	MH-A			MH-B			PW-2R-01/PW-2R-22		
Discharge Limit	<100 gpd			<100 gpd			< 25,000 gpd for previous quarter average		
Date	Meter Reading (hr)	Total Discharge (gal)	Monthly Discharge Rate (gpm)	Meter Reading (hr)	Total Discharge (gal)	Monthly Discharge Rate (gpm)	Meter Reading (ft^3)	Total Discharge (gal)	Discharge Rate (gpm)
1/1/2024	*97.26*	*172*	*0.0039*	*1,495.65*	*1,544*	*0.03*	*3,586*	*532,576*	*11.93*
1/10/2024	97.34	222	0.0039	1,496.40	1,992	0.03	3,794	*688,160*	11.95
2/1/2024	*97.71*	*272*	*0.0061*	*1,498.76*	*1,864*	*0.04*	*4,297*	*531,828*	*11.91*
2/5/2024	97.77	258	0.0051	1,499.14	1,644	0.04	4,388	444,312	8.57
3/1/2024	*97.99*	*170*	*0.0041*	*1,501.27*	*1,503*	*0.04*	*4,961*	*496,672*	*11.89*
3/4/2024	98.02	150	0.0037	1,501.52	1,428	0.04	5,030	480,216	11.91
4/1/2024	*98.18*	*114*	*0.0025*	*1,504.18*	*1,746*	*0.04*	*5,670*	*530,332*	*11.88*
4/3/2024	98.20	108	0.0025	1,504.46	1,764	0.04	5,715	*512,380*	11.86
5/1/2024	*98.67*	*295*	*0.0068*	*1,506.84*	*1,599*	*0.04*	6,352	*510,136*	*11.81*
5/7/2024	98.78	348	0.0073	1,507.37	1,746	0.04	6,537	614,856	12.56
6/1/2024	*99.05*	*224*	*0.0050*	*1,509.65*	*1,684*	*0.04*	*7,058*	*528,088*	*11.83*
6/3/2024	99.07	174	0.0045	1,509.83	1,476	0.04	7,098	419,628	10.79
7/1/2024	*99.09*	*27*	*0.0006*	*1,512.17*	*1,514*	*0.04*	*7,375*	*237,116*	*5.49*
7/9/2024	99.10	18	0.0003	1,512.84	1,806	0.03	7,463	273,020	5.27
8/1/2024	*99.11*	*9*	*0.0002*	*1,514.90*	*1,638*	*0.04*	*8,798*	*1,064,404*	*23.84*
8/5/2024	99.11	6	0.0002	1,515.26	1,452	0.04	8,849	1,036,728	26.66
9/1/2024	*99.11*	*1*	*0.0000*	*1,517.42*	*1,511*	*0.03*	*10,080*	*958,936*	*21.48*
9/3/2024	99.11	0	0.0000	1,517.58	1,392	0.03	10,171	988,856	23.68
10/1/2024	*99.12*	*5*	*0.0001*	*1,519.69*	*1,361*	*0.03*	*10,469*	*290,972*	*6.74*
10/9/2024	99.12	6	0.0001	1,520.29	1,626	0.03	10,469	222,904	4.30
11/1/2024	*99.13*	*7*	*0.0001*	*1,522.45*	*1,656*	*0.04*	*10,469*	*0*	*0.00*
11/4/2024	99.13	6	0.0002	1,522.73	1,464	0.04	10,469	0	0.00
12/1/2024	*99.14*	*6*	*0.0001*	*1,524.95*	*1,500*	*0.03*	*11,344*	*654,500*	*15.15*
12/2/2024	99.14	6	0.0001	1,525.03	1,380	0.03	11,379	680,680	16.88
1/1/2025	*99.15*	*5*	*0.0001*	*1,526.98*	*1,222*	*0.03*	*12,072*	*544,544*	*12.20*
1/8/2025	99.15	6	0.0001	1,527.44	1,446	0.03	12,072	544,544	10.22

Notes:
hr = hour
gal = gallons
gpm = gallons per minute
gpd = gallons per day
na = not applicable; meter reading was not obtained
NM = not measured
Italics indicate estimated values for the previous month's discharge used on Table 3.
If discharge limits are exceeded for a given location, the City of Ann Arbor Wastewater Treatment Plant will be notified and sampling may be required.
Discharge limits were not exceeded for MH-A, MH-B or PW-2R-22 during this quarter.
Meter reading data is collected from the City of Ann Arbor's Automated Meter Reading (AMR) system when the data is available for PW-2R-22.
AMR readings were used for PW-2R-22 for the first, second, third and fourth quarter of 2024.
Well rehabilitation tasks were completed on PW-2R-22 during the second quarter of 2024. PW-2R-22 was turned off from June 5 through June 7, 2024 for well rehabilitation.
On September 10, 2024 the PW-2R-22 flow valve bent while adjusting flow. Since the flow could no longer be adjusted with the valve, the power to the well was turned off.
Stearns Drilling personnel visited PW-2R-22 on November 11, 2024. PW-2R-22 was turned on and the flow rate was adjusted. Due to a dropping water level and a
In the third quarter 2024 report, the MH-B reading for October 9, 2024 was reported as 1,540.29. This value was determined to be an error and was changed to 1,520.29 in the fourth quarter 2024 report. The originally reported October reading did not make sense with subsequent month readings.

Table 3

Quarterly Discharge Volume

City of Ann Arbor Industrial User Permit 20240615
Ann Arbor, Michigan

Estimated Total Discharge Volume (gallons)					
	October 2024	**November 2024**	**December 2024**	**Quarterly Total**	**Average Total Monthly**
PW-1R-12	675,403	653,616	675,403	2,004,422	668,141
PW-2R-01/PW-2R-22	0	654,500	544,544	1,199,044	399,681
PW-3R-12	1,505,261	1,161,533	1,024,042	3,690,835	1,230,278
MH-A	7	6	5	18	6
MH-B	1,656	1,500	1,222	4,378	1,459
Total Discharge	2,182,327	2,471,155	2,245,216	6,898,698	2,299,566

Notes:

City of Ann Arbor Automated Meter Readings (AMR) were used to calculate PW-2R-22 discharge volumes this quarter.

The PW-3R-12 AMR readings stopped advancing after March 25, 2024. The calculations for April 2024 through October 2024 are interpolated based on the calculated flow using the March 1, 2024 to March 24, 2024 AMR readings during periods the well was operational.

PW-1R-12 AMR readings stopped advancing after May 7, 2024. The calculations for May 2024 through December 2024 are interpolated based on the calculated flow using the April 3, 2024 to May 7, 2024 AMR readings during periods the well was operational.

On September 10, 2024 the PW-2R-22 flow valve bent while adjusting flow. Since the flow could no longer be adjusted with the valve, the power to the well was turned off. On November 11, 2024 PW-2R-22 was turned on and the flow rate was adjusted. Due to a dropping water level and a potentially exposed screen, PW-2R-22 was turned off on December 19, 2024. The flow adjustment issue will be resolved in the first quarter of 2025.

The meter at PW-1R-12 needs to be replaced. Replacement for the PW-1R-12 meter is being determined. The discharge numbers are extrapolated from the most recent discharge rate before the meter stopped working.

The PW-3R-12 meter was replaced in November 2024, however AMR readings were not available for this meter during the fourth quarter of 2024. Prior to the meter replacement, discharge numbers were extrapolated from the most recent discharge rate before the meter stopped working. The November and December 2024 discharge numbers were extrapolated based on the flow rate reading on the new meter.

Table 4

Average Daily Discharge Volume

City of Ann Arbor Industrial User Permit 20240615
Ann Arbor, Michigan

Average Daily Discharge Volume (gallons/day)						
	Discharge Limit (gpd)	**October 2024**	**November 2024**	**December 2024**	**Quarterly Total**	**Average Total Monthly**
PW-1R-12	NA	21,787	21,787	21,787	65,362	21,787
PW-2R-01/PW-2R-22	25,000	0	21,817	17,566	39,383	13,128
PW-3R-12	NA	48,557	38,718	33,034	120,308	40,103
MH-A	10,000	0.2	0.2	0.2	0.6	0.2
MH-B	10,000	53	50	39	143	48
Total Discharge		70,398	82,372	72,426	225,196	75,065

Notes:

gpd = gallons per day

NA = not applicable

City of Ann Arbor Automated Meter Readings (AMR) were used to calculate PW-2R-22 discharge volumes this quarter.

The PW-3R-12 AMR readings stopped advancing after March 25, 2024. The calculations for April 2024 through October 2024 are interpolated based on the calculated flow using the March 1, 2024 to March 24, 2024 AMR readings during periods the well was operational.

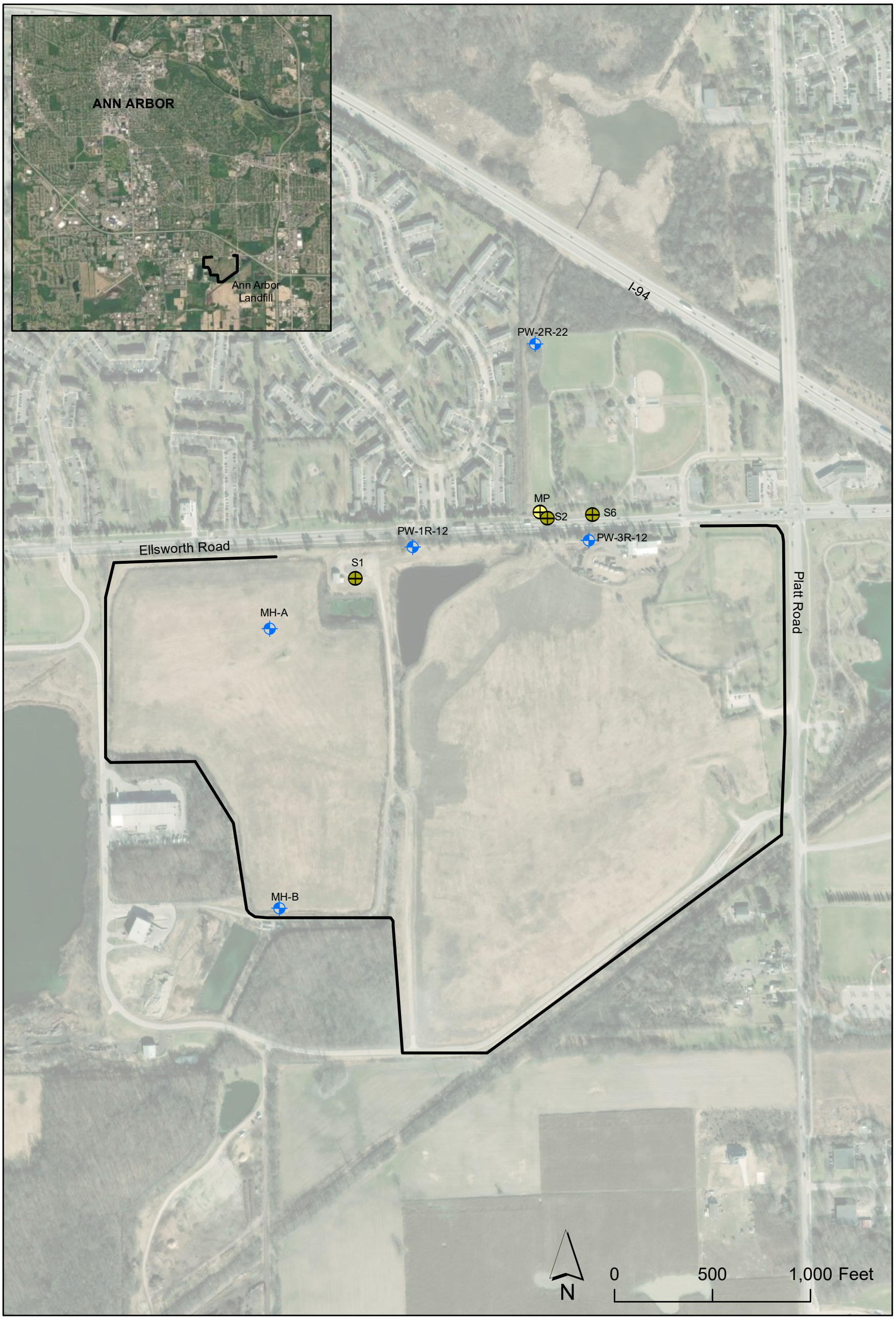
PW-1R-12 AMR readings stopped advancing after May 7, 2024. The calculations for May 2024 through December 2024 are interpolated based on the calculated flow using the April 3, 2024 to May 7, 2024 AMR readings during periods the well was operational.

On September 10, 2024 the PW-2R-22 flow valve bent while adjusting flow. Since the flow could no longer be adjusted with the valve, the power to the well was turned off. On November 11, 2024 PW-2R-22 was turned on and the flow rate was adjusted. Due to a dropping water level and a potentially exposed screen, PW-2R-22 was turned off on December 19, 2024. The flow adjustment issue will be resolved in the first quarter of 2025.

The meter at PW-1R-12 needs to be replaced. Replacement for the PW-1R-12 meter is being determined. The discharge numbers are extrapolated from the most recent discharge rate before the meter stopped working.

The PW-3R-12 meter was replaced in November 2024, however AMR readings were not available for this meter during the fourth quarter of 2024. Prior to the meter replacement, discharge numbers were extrapolated from the most recent discharge rate before the meter stopped working. The November and December 2024 discharge numbers were extrapolated based on the flow rate reading on the new meter.

FIGURES



P:\Projects\Ann Arbor\Landfill\GIS\Figures\Water\WasteWater\WasteWater_rev3.mxd

SOURCE: 2008 United States Geological Survey Aerial

- Outfall Location
- Sanitary Sewer
- Meter Pit (MP) for PW-2R-01
- Slurry Wall*

MH-A Manhole Location
PW-1R-12 Purge Well Location

Notes:
1. MH-A, MH-B and PW-1R-12 discharge to SI.
2. PW-2R-01/PW-2R-22 discharges to S2.
3. PW-3R-12 discharges west of S6.
4. PW-1R-12 and PW-3R-12 meters are located adjacent to their wellhead.
5. *Slurry wall location is approximate.

TETRA TECH

CHECKED: PJM | DATE: 10/21/2024

ANN ARBOR LANDFILL
ANN ARBOR, MICHIGAN

WASTEWATER SAMPLING LOCATION MAP

FIGURE 1

APPENDICES

APPENDIX A

Wastewater Sampling Records

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: large box, north of retention pond **SAMPLE:** PW-1R-12

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/3.2

Personnel: RMF | JMH **Weather:** sunny, 55°F **Date:** 10/9/24

Sampling Equipment: Dedicated pump system

Previous Water Level (ft.): 35.49 **Initial Depth to Water (ft.):** 23.75

Total Depth of Well (ft.): 38.00 **Time Sampled:** 10:15

Water Volume in Well (gal.): nm **Purge Volume Prior to Sampling (gal.):** 5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: WW: Q - 1,4 dioxane, Ammonia, VC (Jan, July & Oct), A - annual list (April)

GW: SA - VOCs & 1,4 dioxane (April & Oct)

Comments: Water was clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/3/24										
NA	35.49	12.50	6.76	1.511	ms/cm	-6.7	5.94	2.21	5.0	
9:49	23.75	13.5	6.76	1.190		-38	3.91	3.12	2.5	
9:53	24.76	13.2	6.85	1.200		-38.5	6.26	9.46	2.75	
9:56	25.50	13.2	6.78	1.192		-39.5	4.69	2.93	3.5	
9:59	25.55	13.1	6.88	1.204		-43.5	6.52	5.30	3.75	
10:02	25.55	13.2	6.86	1.199		-43.3	5.55	5.41	4.00	
10:05	25.55	13.2	6.85	1.191		-45.1	5.91	2.11	4.25	

1,4-dioxane sample bottle (Eurofins)

pH paper reading:	Did you add aditional preservative to 1,4-dioxane bottle? (circle one) Y / N	If Y (yes), approximate quantity added:

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Well diameter gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

Vol=pi(r)2*h 1 liter = .264 gallons 1 liter = 61.02 inches 1 gallon = 231 inches 1 inch = 2.54 cm

Tetra Tech
1136 Oak Valley Dr., Suite 100, Ann Arbor, MI 48108 (734) 665-6000

WATER QUALITY DATA SHEET

SAMPLE LOCATION: large box, north of retention pond **SAMPLE:** PW-3R-12

Client: City of Ann Arbor **Project Name:** Ann Arbor Landfill **Project No.:** 117-1054033/3.2

Personnel: RMF / JMH **Weather:** sunny, 40°F **Date:** 10/9/24

Sampling Equipment: Dedicated pump system

Previous Water Level (ft.): 28.32 **Initial Depth to Water (ft.):** 28.43

Total Depth of Well (ft.): 36.00 **Time Sampled:** 12:45

Water Volume in Well (gal.): nm **Purge Volume Prior to Sampling (gal.):** 5

Disposal Method for Purged Water: Sanitary Sewer

Parameters: WW: Q - 1,4-dioxane, Ammonia, VC (Jan, July & Oct), A - annual list (Apr)

GW: SA - VOCs & 1,4 dioxane (April & Oct)

Comments: Water clear

Time	Depth to H20 (FT)	Temp (C)	pH (S.U.)	Specific Conductance Value	Specific Conductance Units	Redox (mV)	O_2 (mg/l)	Turb (NTU)	Vol. removed (gal.)	Notes
		Parameter Stabilization Ranges								
		3%	±0.1	3%		±10 mV	10%	10%		
Previous Reading: 4/3/24										
9:50	28.32	12.50	6.89	1.804	mS/cm	7.2	6.46	1.21	5.0	
11:35	28.43	16.1	6.80	1.817		-61.0	4.32	2.72	0.25	
11:38	28.43	15.3	6.79	1.747		-49.5	3.71	1.30	0.5	
11:41	28.43	15.5	6.76	1.764		-39.2	3.10	1.48	0.75	
11:44		16.3	6.78	1.799		-36.4	3.36	1.40	1	
11:47		16.0	6.78	1.759	mS/cm	-35.9	3.33	1.26	1.25	

1,4-dioxane sample bottle (Eurofins)

pH paper reading:	Did you add aditional preservative to 1,4-dioxane bottle? (circle one) Y / N	If Y (yes), approximate quantity added:

All measurements to Nearest Hundredth of a Foot (0.01 feet).

Vol=pi(r)2*h 1 liter = .264 gallons 1 gallon = 231 inches³
1 liter = 61.02 inches³ 1 inch = 2.54 cm

Well diameter gallon per ft:

1/8 inch	3/16 inch	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1 inch	2 inch	4 inch
0.0006	0.0014	0.0025	0.0057	0.0102	0.0159	0.0229	0.0408	0.1632	0.6528

APPENDIX B

Laboratory Analytical Results
Eurofins

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Alison Rauss
Tetra Tech GEO
1136 Oak Valley Dr.
Suite 100
Ann Arbor, Michigan 48108

Generated 10/29/2024 2:11:33 PM

JOB DESCRIPTION

Ann Arbor Landfill Quarterly WW

JOB NUMBER

240-212857-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
10/29/2024 2:11:33 PM

Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Method Summary 6
Sample Summary 7
Detection Summary 8
Client Sample Results 9
Surrogate Summary 12
QC Sample Results 13
QC Association Summary 16
Lab Chronicle 17
Certification Summary 18
Chain of Custody 19

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 240-212857-1 — Eurofins Cleveland

Job Narrative
240-212857-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/11/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°C.

GC/MS VOA
Method 624.1_PREC: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): TRIP BLANK (240-212857-3).

Method 8260D_SIM: Batch not being reported with MS/MSD due to sample possible containing carry over

Method 8260D_SIM: Batch not being reported with MS/MSD due to parent sample needing re-analyzed at a lower dilution

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Tetra Tech GEO
Job ID: 240-212857-1
Project/Site: Ann Arbor Landfill Quarterly WW

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CLE
8260D SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CLE
5030C	Purge and Trap	SW846	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Tetra Tech GEO
Job ID: 240-212857-1
Project/Site: Ann Arbor Landfill Quarterly WW

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-212857-1	PW-1R-12	Water	10/09/24 10:15	10/11/24 08:00
240-212857-2	PW-3R-12	Water	10/09/24 12:45	10/11/24 08:00
240-212857-3	TRIP BLANK	Water	10/09/24 00:00	10/11/24 08:00

Detection Summary

Client: Tetra Tech GEO
Job ID: 240-212857-1
Project/Site: Ann Arbor Landfill Quarterly WW

Client Sample ID: PW-1R-12 — Lab Sample ID: 240-212857-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	160		20		ug/L	10		8260D SIM	Total/NA

Client Sample ID: PW-3R-12 — Lab Sample ID: 240-212857-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	32		5.0		ug/L	1		624.1	Total/NA
1,4-Dioxane	200		10		ug/L	5		8260D SIM	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-212857-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Quarterly WW

Job ID: 240-212857-1

Client Sample ID: PW-1R-12

Date Collected: 10/09/24 10:15
Date Received: 10/11/24 08:00

Lab Sample ID: 240-212857-1

Matrix: Water

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		5.0		ug/L			10/15/24 20:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*10/15/24 20:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*62 - 137*		*10/15/24 20:54*	*1*
Toluene-d8 (Surr)	*106*		*78 - 122*		*10/15/24 20:54*	*1*

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**160**		20		ug/L			10/23/24 13:46	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*68 - 127*		*10/23/24 13:46*	*10*

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Quarterly WW

Job ID: 240-212857-1

Client Sample ID: PW-3R-12
Date Collected: 10/09/24 12:45
Date Received: 10/11/24 08:00

Lab Sample ID: 240-212857-2
Matrix: Water

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	32		5.0		ug/L			10/15/24 21:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*56 - 136*		*10/15/24 21:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*62 - 137*		*10/15/24 21:17*	*1*
Toluene-d8 (Surr)	*106*		*78 - 122*		*10/15/24 21:17*	*1*

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	200		10		ug/L			10/23/24 14:09	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*68 - 127*		*10/23/24 14:09*	*5*

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-212857-3
Date Collected: 10/09/24 00:00
Matrix: Water
Date Received: 10/11/24 08:00

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		5.0		ug/L			10/15/24 21:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*10/15/24 21:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*		*10/15/24 21:41*	*1*
Toluene-d8 (Surr)	*105*		*78 - 122*		*10/15/24 21:41*	*1*

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		2.0		ug/L			10/22/24 11:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*68 - 127*		*10/22/24 11:04*	*1*

Surrogate Summary

Client: Tetra Tech GEO
Project/Site: Ann Arbor Landfill Quarterly WW

Job ID: 240-212857-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	DCA	TOL
Lab Sample ID	Client Sample ID	(56-136)	(62-137)	(78-122)
240-212857-1	PW-1R-12	94	101	106
240-212857-1 MS	PW-1R-12	95	94	108
240-212857-1 MSD	PW-1R-12	94	94	107
240-212857-2	PW-3R-12	92	101	106
240-212857-3	TRIP BLANK	94	100	105
LCS 240-630829/5	Lab Control Sample	95	94	108
MB 240-630829/9	Method Blank	94	100	108

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260D SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(68-127)
240-212857-1	PW-1R-12	100
240-212857-2	PW-3R-12	96
240-212857-3	TRIP BLANK	102
LCS 240-631791/4	Lab Control Sample	101
LCS 240-632008/4	Lab Control Sample	95
MB 240-631791/6	Method Blank	107
MB 240-632008/6	Method Blank	91

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(10-150)
MRL 240-631791/5	Lab Control Sample	109
MRL 240-632008/5	Lab Control Sample	100

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-630829/9
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 630829

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		1.0		ug/L			10/15/24 14:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*10/15/24 14:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*		*10/15/24 14:09*	*1*
Toluene-d8 (Surr)	*108*		*78 - 122*		*10/15/24 14:09*	*1*

Lab Sample ID: LCS 240-630829/5
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 630829

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Vinyl chloride			20.0	17.9		ug/L		89	5 - 195		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*
Toluene-d8 (Surr)	*108*		*78 - 122*

Lab Sample ID: 240-212857-1 MS
Client Sample ID: PW-1R-12
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 630829

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Vinyl chloride	ND		100	81.4		ug/L		81	0 - 251		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*
Toluene-d8 (Surr)	*108*		*78 - 122*

Lab Sample ID: 240-212857-1 MSD
Client Sample ID: PW-1R-12
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 630829

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Vinyl chloride	ND		100	86.9		ug/L		87	0 - 251	7	66

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*
Toluene-d8 (Surr)	*107*		*78 - 122*

Method: 8260D SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-631791/6
Matrix: Water
Analysis Batch: 631791

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		2.0		ug/L			10/22/24 09:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*68 - 127*		*10/22/24 09:53*	*1*

Lab Sample ID: LCS 240-631791/4
Matrix: Water
Analysis Batch: 631791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			10.0	8.56		ug/L		86	75 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*68 - 127*

Lab Sample ID: MRL 240-631791/5
Matrix: Water
Analysis Batch: 631791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			0.00200	0.00215		ng/uL		108	10 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*109*		*10 - 150*

Lab Sample ID: MB 240-632008/6
Matrix: Water
Analysis Batch: 632008

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		2.0		ug/L			10/23/24 11:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*68 - 127*		*10/23/24 11:25*	*1*

Lab Sample ID: LCS 240-632008/4
Matrix: Water
Analysis Batch: 632008

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			10.0	8.53		ug/L		85	75 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*68 - 127*

Method: 8260D SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MRL 240-632008/5
Matrix: Water
Analysis Batch: 632008

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			0.00200	0.00236		ng/uL		118	10 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*10 - 150*

QC Association Summary

Client: Tetra Tech GEO
Job ID: 240-212857-1
Project/Site: Ann Arbor Landfill Quarterly WW

GC/MS VOA

Analysis Batch: 630829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-212857-1	PW-1R-12	Total/NA	Water	624.1	
240-212857-2	PW-3R-12	Total/NA	Water	624.1	
240-212857-3	TRIP BLANK	Total/NA	Water	624.1	
MB 240-630829/9	Method Blank	Total/NA	Water	624.1	
LCS 240-630829/5	Lab Control Sample	Total/NA	Water	624.1	
240-212857-1 MS	PW-1R-12	Total/NA	Water	624.1	
240-212857-1 MSD	PW-1R-12	Total/NA	Water	624.1	

Analysis Batch: 631791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-212857-3	TRIP BLANK	Total/NA	Water	8260D SIM	
MB 240-631791/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-631791/4	Lab Control Sample	Total/NA	Water	8260D SIM	
MRL 240-631791/5	Lab Control Sample	Total/NA	Water	8260D SIM	

Analysis Batch: 632008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-212857-1	PW-1R-12	Total/NA	Water	8260D SIM	
240-212857-2	PW-3R-12	Total/NA	Water	8260D SIM	
MB 240-632008/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-632008/4	Lab Control Sample	Total/NA	Water	8260D SIM	
MRL 240-632008/5	Lab Control Sample	Total/NA	Water	8260D SIM	

Lab Chronicle

Client: Tetra Tech GEO
Job ID: 240-212857-1
Project/Site: Ann Arbor Landfill Quarterly WW

Client Sample ID: PW-1R-12
Lab Sample ID: 240-212857-1
Date Collected: 10/09/24 10:15
Matrix: Water
Date Received: 10/11/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	624.1		1	630829	HMB	EET CLE	10/15/24 20:54
Total/NA	Analysis	8260D SIM		10	632008	MS	EET CLE	10/23/24 13:46

Client Sample ID: PW-3R-12
Lab Sample ID: 240-212857-2
Date Collected: 10/09/24 12:45
Matrix: Water
Date Received: 10/11/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	624.1		1	630829	HMB	EET CLE	10/15/24 21:17
Total/NA	Analysis	8260D SIM		5	632008	MS	EET CLE	10/23/24 14:09

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-212857-3
Date Collected: 10/09/24 00:00
Matrix: Water
Date Received: 10/11/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	624.1		1	630829	HMB	EET CLE	10/15/24 21:41
Total/NA	Analysis	8260D SIM		1	631791	MS	EET CLE	10/22/24 11:04

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Tetra Tech GEO
Job ID: 240-212857-1
Project/Site: Ann Arbor Landfill Quarterly WW

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Connecticut	State	PH-0806	12-31-26
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Hampshire	NELAP	225024	09-30-25
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-25
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-25
West Virginia DEP	State	210	12-31-24

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler: RMF / JMH	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-124719-42565.1
Client Contact: Patti McCall	Phone: 715-214-4381	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: Tetra Tech GEO	PWSID:			Job #:
Address: 1136 Oak Valley Dr. Suite 100	Due Date Requested:			
City: Ann Arbor	TAT Requested (days):			
State, Zip: MI, 48108	Compliance Project: Δ Yes Δ No			
Phone: 734-213-2204(Tel)	PO #: Purchase Order not required			
Email: patti.mccall@tetratech.com	WO #: 117-1054033 / 3.2 3.3 Tvm			
Project Name: Ann Arbor Landfill Quartrely Wastewater	Project #: 24027566			
Site:	SSOW#:			

Analysis Requested

Preservation Codes: A - HCL

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	624.1_PREC - VOCs (Vinyl Chloride)	8260D_SIM - VOC-SIM 1,4-dioxane	Total Number of containers	Special Instructions/Note:
Preservation Code:							A	A		
PW-1R-12	10/9/24	10:15	G	Water	N	N	X	X	6	
PW-3R-12	10/9/24	12:45	G	Water	N	N	X	X	6	
Trip Blank				Water			X	X	4	
~~Trip Blank~~ Tvm										
~~Trip Blank~~ Tvm										
~~Trip Blank~~ Tvm										

240-212857 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	10/9/24 18:00	ET	ET Cold Storage	10/9/24 18:00	ET
2	ET Cold Storage	10/10/24 14:00	ET	[signature]	10/10/24 1400	ETA
3	[signature]	10/10/24 1405	ETA	[signature]	10/11/24 8:00	Evo

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client Tetra Tech Site Name _____ Cooler unpacked by: TF

Cooler Received on 10/11/24 Opened on 10/11/24

FedEx: 1st Grd Exp UPS FAS (Waypoint) Client Drop Off Eurofins Courier Other _____

Receipt After-hours Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used. Bubble Wrap (Foam) Plastic Bag None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 17 (CF +0.1 °C) Observed Cooler Temp. 3.0 °C Corrected Cooler Temp. 3.1 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	Yes	No (NA)
3 Shippers' packing slip attached to the cooler(s)?	Yes	(No)
4. Did custody papers accompany the sample(s)?	(Yes)	No
5 Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6 Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes)	No
7 Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?	(Y)	N
10 Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11 Sufficient quantity received to perform indicated analyses?	(Yes)	No
12 Are these work share samples and all listed on the COC?	Yes	(No)
If yes, Questions 13-17 have been checked at the originating laboratory		
13 Were all preserved sample(s) at the correct pH upon receipt?	Yes	No (NA) pH Strip Lot# HC447997
14 Were VOAs on the COC?	(Yes)	No
15 Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	(Yes)	No NA
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # QC1306LL	(Yes)	No
17 Was a LL Hg or Me Hg trip blank present? _____	Yes	(No)

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container

Sample(s) trip blank were received with bubble >6 mm in diameter (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory

Time preserved. _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen. _____

10/11/2024

Login Container Summary Report

240-212857

10/29/2024

Temperature readings _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
PW-1R-12	240-212857-A-1	Voa Vial 40ml - Hydrochloric Acid				
PW-1R-12	240-212857-B-1	Voa Vial 40ml - Hydrochloric Acid				
PW-1R-12	240-212857-C-1	Voa Vial 40ml - Hydrochloric Acid				
PW-1R-12	240-212857-D-1	Voa Vial 40ml - Hydrochloric Acid				
PW-1R-12	240-212857-E-1	Voa Vial 40ml - Hydrochloric Acid				
PW-1R-12	240-212857-F-1	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-212857-A-2	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-212857-B-2	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-212857-C-2	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-212857-D-2	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-212857-E-2	Voa Vial 40ml - Hydrochloric Acid				
PW-3R-12	240-212857-F-2	Voa Vial 40ml - Hydrochloric Acid				
TRIP BLANK	240-212857-A-3	Voa Vial 40ml - Hydrochloric Acid				
TRIP BLANK	240-212857-B-3	Voa Vial 40ml - Hydrochloric Acid				
TRIP BLANK	240-212857-C-3	Voa Vial 40ml - Hydrochloric Acid				
TRIP BLANK	240-212857-D-3	Voa Vial 40ml - Hydrochloric Acid				

APPENDIX C

Laboratory Analytical Results
City of Ann Arbor Environmental Services Laboratory

Environmental Services Laboratory
919 Sunset Road
Ann Arbor MI 48103-2924

734.994.6426 phone
734.994.0151 fax

Laboratory Report

Report Date: 10/21/24

Dear Ms. Rauss,

The following report contains the analytical results for the samples you have submitted to our laboratory.

Unless otherwise noted in this report, all testing met Quality Control requirements, was performed within allowable hold times, and met all other applicable laboratory specifications.

Thank you for this opportunity to serve you. If you have any questions regarding this report, please feel free to contact us.

Respectfully,

Amanda Carl
Temporary Environmental Laboratory Supervisor

This report may not be reproduced, except in full, without written approval from Ann Arbor Environmental Laboratory Services.

Environmental Services Laboratory
919 Sunset Road
Ann Arbor MI 48103-2924

734.994.6426 phone
734.994.0151 fax

Sample Analysis Report

Report Date: 10/21/24

Client Sample Information
Ms. Alison Rauss
Tetra Tech
710 Avis Drive Suite 100
Ann Arbor, MI
48108
Alison.Rauss@tetratech.com

Sample Information				
Sample Name	***Date/Time Sampled***	***Received***	***Analysis type***	***Lab Sample ID***
PW-1R-12	10/09/24 10:15am	10/09/24 13:41	Standard	AL22195

Results					
Analyte	***Level Detected***	***Reporting Limit***	***Units***	***Qualifiers/Comments***	***Analysis Date***
Ammonia as N SM 4500-NH3 D-11	12.10	0.5	mg/L		10/10/24
Total Phosphorus as P SM 4500-P E	0.0242	0.02	mg/L		10/10/24

Environmental Services Laboratory
919 Sunset Road
Ann Arbor MI 48103-2924

734.994.6426 phone
734.994.0151 fax

Sample Analysis Report

Report Date: 10/21/24

Client Sample Information
Ms. Alison Rauss
Tetra Tech
710 Avis Drive Suite 100
Ann Arbor, MI
48108
Alison.Rauss@tetratech.com

Sample Information				
Sample Name	***Date/Time Sampled***	***Received***	***Analysis type***	***Lab Sample ID***
PW-3R-12	10/09/24 12:45	10/09/24 12:41	Standard	AL22196

Results					
Analyte	***Level Detected***	***Reporting Limit***	***Units***	***Qualifiers/Comments***	***Analysis Date***
Ammonia as N SM 4500-NH3 D-11	28.1	0.5	mg/L		10/10/24
Total Phosphorus as P SM 4500-P E	Not sampled	0.02	mg/L		

Ann Arbor Environmental Services Laboratory

919 Sunset Road
Ann Arbor, MI 48103
734-794-6426

CHAIN OF CUSTODY

Client Name: TetraTech	Phone: 734-213-4069
Address: 710 Avis Drive, Suite 100 Ann Arbor, MI 48108	Fax: 734-213-5008
	Email: PattiMcCall@tetratech.com

Sample Description	Sampled Date	Sampled Time	Preservative	Grab/ Comp	Analyses Requested: Ammonia	TSS	TDS	BOD	Phosphorus	Remarks
PW-1R-12	10/9/24	10:15	—	G	X				X	AL22195
PW-3R-12	10/9/24	12:45	—	G	X					AL22196

Signature	Print
Sample Collected By: Rachel Fischer	Sample Collected By: RMF Rachel Fischer

Signature	Date	Time
Sample Relinquished By: Rachel Fischer	10/9/24	13:41
Sample Received By:	10/9/24	1341
Sample Relinquished By:		
Sample Received By:		

Attachment E: Bioaugmentation Pilot Report (2012)

TETRA TECH

August 16, 2012

Larry Bean
MDEQ-Jackson District Office
301 E. Louis Glick Hwy.
Jackson, MI 49201-1556

RE: Bioremediation Pilot Test – City of Ann Arbor Landfill
4150 Platt Road, Ann Arbor, Michigan 48108
Facility Number 399487

Dear Mr. Bean:

On behalf of the City of Ann Arbor, Tetra Tech GEO has completed a bioremediation pilot test at Southeast Area Park located on the north side of Ellsworth Road. A vinyl chloride plume in the groundwater migrated from the Ann Arbor Landfill to Southeast Area Park sometime during the active life of the landfill. The vinyl chloride plume has maintained a relatively similar shape and has shown decreasing concentrations over the last decade using pump and treat methods. However, vinyl chloride concentrations remain above applicable cleanup criteria. City personnel were interested in determining if a more sustainable approach to remediation could reduce the vinyl chloride mass in less time than the use of a pump and treat method.

A pilot test was conducted near monitoring well W-87-92 in Southeast Area Park, where the highest concentration of vinyl chloride in groundwater has been detected. The objective of the pilot test was to determine if amending the aquifer with electron donor could enhance the biological breakdown of vinyl chloride. The electron donor selected for this project was an emulsified vegetable oil (EVO) that was composed of 55% soybean oil, 18% sugar-like additive emulsifiers and 27% water. The EVO serves as a substrate (or food source) to stimulate the existing bacteria in the ground. Once active, the microorganisms respire the vinyl chloride, breaking it down into ethene (a harmless byproduct), thereby remediating the vinyl chloride plume.

In April 2010, Tetra Tech GEO staff collected groundwater samples from four wells at the Southeast Area Park to determine if the *Dehalococcoides* (Dhc) genus of bacteria were present. The Dhc bacteria are a group of halorespiring bacteria that use halogenated compounds (in this case vinyl chloride) as a source of energy. Laboratory results (**Attachment A**) indicated that the Dhc genus was present in small quantities in the groundwater. Additional parameters analyzed included total organic carbon, methane, ethane, ethene, nitrate, sulfate, chemical oxygen demand, alkalinity and total and dissolved iron and manganese. Although present, it was apparent from the groundwater chemistry that the Dhc population was either too small to complete the reductive dechlorination or that the bacteria did not have a substrate to survive on.

Tetra Tech
710 Avis Drive, Ann Arbor, MI 48108
Tel 734.665.6000 Fax 734.213.3003 www.tetratech.com

The following sections describe the bioremediation pilot test completed and the preliminary results.

BIOREMEDIATION PILOT TEST

The Michigan Department of Environmental Quality (MDEQ) Resource Management Division approved the pilot test in a letter dated November 22, 2011 (**Attachment B**) including injection of EVO and bioaugmentation. On November 28, 2011 seven injection wells (IW-01-11 through IW-07-11) and one observation well (OW-34-11) were installed in Southeast Area Park using direct push technology. The location of the wells is depicted on **Attachment C** and encompass approximately 1,800 square feet. In addition to monitoring well W-87-92 having the highest detected concentration of vinyl chloride in the park, the pilot test area was also chosen to verify the capture zone influence of PW-1R-01 and PW-3R-01 in this area of the park. Modeling completed and reported in the *Capture Zone Analysis and Conceptual Site Model Update for the Ann Arbor Landfill* dated March 10, 2009 determined that monitoring well W-87-92 was near the capture zone extent of both PW-1R-01 and PW-3R-01. Groundwater flow determined by groundwater elevations could verify the model. The location of observation well OW-34-11 was chosen based on the model indicating that it was outside of the capture zone influence and therefore potentially outside of the influence of the bioremediation pilot test.

The injection wells and the observation well were advanced approximately twenty-five feet below ground surface (bgs) and were installed with 10 foot polyvinyl chloride (PVC) 10-slot screens. Each well was finished with a flush mount well cover. Continuous soil sampling was completed at IW-01-11, IW-05-11 and OW-34-11. Lithology, occurrence of water and well construction information were recorded on soil boring logs included in **Attachment D**.

Groundwater was encountered at approximately 15 feet bgs. Soil samples were collected at approximately 14 feet bgs from OW-34-11 and IW-01-11. This depth was chosen to verify that soil is not impacted with vinyl chloride. Laboratory analytical results (**Attachment E**) indicate that volatile organic compounds (VOCs) were not detected in either soil sample.

On November 29, 2011 approximately 220 gallons of EVO was successfully injected into the aquifer. The EVO was mixed with municipal water to create a 5% solution, which was then injected. Dosatron liquid dispensers were used to mix the EVO with the municipal water, for a total solution volume of approximately 4,700 gallons. Following the injection of EVO solution, approximately 19,000 gallons of municipal water were flushed through the same wells. Two injection wells (IW-04-11 and IW-05-11) received a smaller dose due to site conditions. Injection well IW-05-11 was under water during the day of injections, potentially causing back pressure on the dosatron and the formation at IW-04-11 could not take the dose. A table summarizing the injection quantities by injection well is included in **Attachment F**.

On April 27, 2012, Dhc containing bacteria culture was added to the aquifer through the seven injection wells in order to augment the existing population and increase the breakdown of the remaining vinyl chloride. Tetra Tech GEO personnel injected nitrogen into each well to displace

all oxygen and ensure live delivery of the bacteria to the aquifer. Following the nitrogen addition, 1 to 2 liters of the bacterial culture supplied by SiREM Laboratory was injected into the well screen interval of IW-01-11 through IW-07-11.

GAS MONITORING

Gas monitoring was performed in the area surrounding the injections to ensure that the bioremediation pilot test did not produce methane concentrations greater than the action levels outlined under the Natural Resources and Environmental Protection Act, 1994 Public Act 451, as amended, and the rules promulgated under Part 115, specifically Rule 299.4433. The methane concentrations in the Southeast Area Park concession building, nearby storm and sanitary sewers and OW-34-11 were monitored once a week between December 8, 2011 and January 4, 2012. Review of the data (**Appendix G**) indicates that methane was detected at 0.1% in OW-34-11 on December 20, 2011. No other methane concentrations were detected. The Southeast Area Park Concession Building and nearby sewers will continue to be monitored in accordance with the City of Ann Arbor's *Addendum to the Gas Plan Monitoring Revisions* dated May 1, 2008 for the municipal landfill.

GROUNDWATER SAMPLING

Groundwater sampling was completed using low flow groundwater sampling techniques. Groundwater from each well was purged until a stabilized water level and stabilized field parameters were achieved. Observation well OW-34-11 was sampled using a peristaltic pump and W-87-92 was sampled using its dedicated well wizard micropurge pump. Field parameters, including pH, specific conductance, temperature, oxidation-reduction potential (ORP) and dissolved oxygen readings were recorded. Dissolved metal samples were field filtered with a 0.45 micron filter.

The groundwater samples were placed directly into clean laboratory provided containers. All samples were placed into ice-packed coolers. Upon completion of all sampling activities, the 1,4-dioxane sample containers were delivered to Ann Arbor Technical Services, Inc. (ATS) of Ann Arbor. Samples for genetic testing and dissolved hydrocarbon gases were shipped to SiREM Laboratory of Guelph, Ontario. A courier from Test America Laboratories, Inc. (Test America) delivered the remaining groundwater samples to Test America for appropriate analysis. All samples were handled under the proper chain-of-custody procedures.

Observation well OW-34-11 and existing monitoring well W-87-92 were sampled for arsenic, iron, manganese and 1,4-dioxane before and after the pilot test as requested by the MDEQ on November 28, 2011, December 14, 2011 and January 3, 2012. The results are included on tables provided in **Attachment A**. Monitoring well W-87-92 is included in the Hydrogeologic Monitoring Plan (HMP) for the Ann Arbor Landfill and is sampled quarterly for VOCs. Therefore, following the injections, W-87-92 was not sampled for VOCs until the next quarterly sampling event in January.

Both W-87-92 and IW-03-11 were monitored in February 2012 for dissolved hydrocarbon gasses (methane, ethane and ethene). Dissolved hydrocarbon gasses are biological byproducts detected in groundwater following electron donor amendments. The presence of ethene would confirm that the pilot test is successful. After augmenting the aquifer with Dhc containing culture, groundwater samples were collected in June 2012 from W-87-92 and OW-34-11. These groundwater samples were submitted for laboratory analysis of VOCs, total organic carbon and dissolved hydrocarbon gases. Samples were also collected to determine the presence of Dhc bacteria. Results of all groundwater analyses are discussed in the next section.

GROUNDWATER ANALYSIS

The laboratory analytical reports are provided in **Attachment E** and summaries of the data are provided in **Attachment A** with comparison data to MDEQ Residential Part 201 Criteria, where applicable. Review of the analytical data indicates several promising lines of evidence for a successful pilot test.

The ORP values recorded continue to indicate a reduced environment. The iron, manganese and arsenic concentrations in both wells have increased since the injections, indicating reducing conditions.

Dissolved methane was detected in water at 3.2 (W-87-92) and 0.08 (IW-03-11) milligrams per liter (mg/L) in February 2012. Ethene and ethane were below the reporting limit of 0.01 mg/L in both samples. Low levels of ethene may be due to relatively low initial levels of vinyl chloride. Sampling completed in June 2012 (two months after the bioaugmentation), indicates that methane increased to 24 mg/L in W-87-92 and was detectable at 1.7 mg/L in OW-34-11. Ethene was detectable in W-87-92 for the first time, indicating that complete reductive dechlorination of the vinyl chloride compound is occurring.

Review of the genetic data indicates that while a population of Dhc was not present in groundwater collected from W-87-92 in April 2010, 5×10^5 cells per liter were present at the end of June 2012. This is an order of magnitude lower than what is recommended for a viable population, indicating that the microbial population may be struggling to survive on the low concentration of vinyl chloride. As expected, the Dhc microbial concentration is even lower in OW-34-11 where vinyl chloride has not been detected; and ethene was not detected above the reporting limit.

Vinyl chloride concentrations in W-87-92 decreased from 48 micrograms per liter (ug/L) in October 2011 to 8.2 ug/L in July 2012. This concentration of vinyl chloride in W-87-92 is the lowest it has been since 2001. A trend chart for vinyl chloride in W-87-92 from July 1996 to July 2012 is included in **Attachment H**.

Groundwater contours for February and April 2012 in the Southeast Area Park are provided in **Attachment J**. Monitoring well W-87-92 appears to be located at the edge of influence for the pumping radii of PW-1R-01 and PW-3R-01. Observation well OW-34-11 appears to be outside

of the capture zone for both extraction wells. Localized groundwater flow in February indicates a radial mound at injection well IW-04-11 flowing toward all other well locations. In April 2012, a depression has formed just east of IW-04-11 at IW-02-11. During February and April, PW-3R-01 was pumping lower than the target flow rate due to maintenance needs. Once repaired, the flow rate will be increased, a round of static water levels will be completed and an updated groundwater elevation contour map will be prepared.

CONCLUSIONS

Preliminary results of the pilot test indicate:

1. Laboratory results for soil samples collected during well installations verified that soil in the pilot test area of the Southeast Area Park is not impacted by VOCs.
2. The ORP values continue to indicate a reducing environment.
3. The iron, manganese and arsenic concentrations in both wells have increased since the injections, indicating further reducing conditions are present.
4. Methane was not detected in the airspace of the floor drains at the Southeast Area Park Concession Building and nearby sewers four weeks after injections.
5. Dissolved methane was detected in the groundwater analyzed in June 2012.
6. Ethene was present in the groundwater in June 2012.
7. Dhc was not present or minimally present at locations analyzed in April 2010 and increased by June 2012.
8. Laboratory results for groundwater monitoring events indicate a reduction in vinyl chloride in W-87-92. The concentration of vinyl chloride in W-87-92 was 48 ug/L in October 2011 prior to the injections and 8.2 ug/L in July 2012.

SCHEDULE

The monitoring wells in the Southeast Area Park will continue to be monitored to evaluate the effectiveness of the pilot test.

- Quarterly monitoring of VOCs and ORP measurements in the Southeast Area Park in accordance with the HMP for the Ann Arbor Landfill will continue.
- OW-34-11 and W-87-92 will be monitored quarterly for VOCs.
- Dissolved hydrocarbon gasses will be analyzed before the end of 2012 to determine whether the Dhc population is continuing to respire vinyl chloride.
- Following repairs of the extraction wells, an updated groundwater elevation contour map will be constructed and the groundwater flow will be evaluated.

At this time, the technology is not anticipated to be applied full-scale. Additional information is required to determine the success of the pilot test and the feasibility of implementation. Please contact us if you have any questions.

Sincerely,

Alison Rauss
Project Scientist

Patti J. McCall
Senior Geologist

Attachment A: Groundwater Analytical Data
Attachment B: Bioremediation Pilot Test MDEQ Approval Letter
Attachment C: Site Location Map
Attachment D: Soil Boring Logs
Attachment E: Laboratory Analytical Reports (provided electronically on CD)
Attachment F: Injection Volumes
Attachment G: Gas Monitoring Data
Attachment H: W-87-92 Vinyl Chloride Concentration Trend Chart
Attachment I: Groundwater Elevation Contour Map – February 1 and April 27, 2012

cc: Matt Naud, Environmental Coordinator, City of Ann Arbor
Anne Warrow, Project Manager, City of Ann Arbor
Steve Blayer, Senior Environmental Engineer, MDEQ

P:\ P:\Projects\Ann Arbor\Landfill\Remediation Options\Bioremediation Pilot Test\Letter Report\2012_08_16_Pilot Test Letter Report.doc

Attachment F: Annual Maintenance Report (2024)

July 12, 2024

Transmitted Electronically

Ms. Erin Donnelly
Environmental Services Manager
City of Ann Arbor
301 E. Huron St.
Ann Arbor, Michigan 48104

Re: Ann Arbor Landfill
2023-2024 Maintenance Activity Summary

Dear Ms. Donnelly:

Personnel from Tetra Tech, Inc. (Tetra Tech) completed or coordinated the completion of various maintenance activities at the Ann Arbor Landfill (AALF). Routine maintenance activities related to existing monitoring wells included inspection of well caps, locks, bolts, cutting of PVC well casing due to frost heave and well labeling. Non-routine maintenance tasks related to the landfill cap, purge wells, leachate collection manholes, and the north side methane collection system (NSMCS) completed between July 1, 2023 and June 30, 2024 are discussed below.

General Well Maintenance

February through March 2024

On February 19, 2024, Terra Probe replaced the damaged flush mount well cover and concrete pad at W-88-92. This well was resurveyed by City of Ann Arbor surveyors in March 2024.

Purge Well Maintenance

July 2023 through June 2024

Tetra Tech personnel added muriatic acid to the maintenance wells surrounding the purge wells during scheduled monthly wastewater readings when the corresponding purge well was operable. The routine addition of muriatic acid helps prevent biofouling of the well screen and surrounding formation.

Tetra Tech personnel added one gallon of muriatic acid to each of the three maintenance wells that surround purge wells PW-1R-12 in August 2023 through May 2024. Tetra Tech personnel added one gallon of muriatic acid to each of the three maintenance wells that surround purge wells PW-2R-22 in August 2023 through June 2024. Tetra Tech personnel added two gallons of muriatic acid to each of the three maintenance wells that surround purge well PW-3R-12 in July 2023 through November 2023 and February 2024 through May 2024.

July and August 2023
Stearns Drilling (Stearns) was onsite to complete repairs to the purge wells and MH-B from July 17 through August 1, 2023.

- PW-1R was repaired and the meter wiring was replaced due to plants growing through the wiring. The well was operational on July 20, 2023. Area storms knocked out the power on July 27, 2023, but the well was again operational later that day.
- PW-2R-22 had electrical repairs completed, including installing a breaker, repairing the control box and replacing the underground wiring. The well was operational on July 20, 2023, however area storms knocked out the power on July 27, 2023. A new electrical part was required, and the well was operational on July 31, 2023.
- PW-3R-12 had the discharge line repaired between the meter and the cleanout.
- The check valve was replaced at MH-B. The floats in the well were also cleaned and reset on August 1, 2023.

December 2023
On December 1, 2023, Tetra Tech personnel observed that the PW-3R-12 manhole had standing water and the cleanout had water flowing from the top. The well was turned off until the discharge line from the cleanout to the sanitary line could be jet rodded to improve the flow rate.

January 2024
On January 11, 2024, Michigan Power Rodding jet rodded the PW-3R-12 discharge line and the pump was turned back on and operational the same day.

April 2024
On April 3, 2024, Tetra Tech personnel observed that the PW-3R-12 meter was not advancing. The groundwater could be heard discharging from the well, indicating that the pump was operating but the meter was not. The City of Ann Arbor's AquaHawk Automated Meter Readings (AMR) readings indicated that the meter stopped advancing after March 25, 2024. City of Ann Arbor personnel were contacted about the meter issue and confirmed the meter was not working.

May 2024
In May 2024, Tetra Tech personnel observed that The City of Ann Arbor's AquaHawk AMR readings for PW-1R-12 stopped advancing after May 7, 2024. On May 17, 2024, Tetra Tech personnel observed that groundwater could be heard discharging from the well, indicating that the pump was operating but the meter was not. City of Ann Arbor personnel were contacted about the PW-1R-12 meter issue. Based on the issues with the existing meters, Tetra Tech personnel asked about replacing the broken PW-1R-12 and PW-3R-12 meters with MAG meters. The City of Ann Arbor personnel agreed this would be a good option but did not have this type of meter at the City. Replacement meters are on order.

May and June 2024
Stearns was onsite to complete rehabilitation on the well screen, discharge line and surrounding formation of the three purge wells from May 29 through June 18, 2024.

- PW-1R-12 was shut down for rehabilitation tasks on June 10, 2024. The well was restarted on June 18, 2024.
- PW-2R-22 was shut down for rehabilitation tasks on June 5, 2024. The well was restarted on June 7, 2024.

- PW-3R-12 was shut down for rehabilitation tasks on May 29, 2024. The well was restarted on June 4, 2024.

During well rehabilitation tasks at PW-1R-12 the control box and pump were also replaced. The control box was shorting out due to ants chewing through the lines.

Purge Well Telemetry

July 2023 through June 2024

The purge well monthly flow readings are obtained from the City of Ann Arbor's AMR system prior to field work. The AMR records water discharge via satellite, which is used to calculate the discharge volumes and flow rates. Purge well PW-1R-12 AMR readings were available July 2023 through April 2024. AMR readings were not available for PW-1R-12 from May 2024 through the end of the second quarter of 2024. The PW-1R-12 AMR readings stopped advancing after May 7, 2024. As described above the well pump was operational, however the meter was not. The PW-1R-12 calculations for May and June 2024 are interpolated based on the calculated flow using the April 3, 2024 to May 7, 2024 AMR readings during the portions of the months that the well was operational. PW-1R-12 was shut down for rehabilitation tasks on June 10, 2024. The well was restarted on June 18, 2024.

Purge well PW-2R-22 AMR readings were available September 2023 through March 2024. AMR readings were not available for PW-2R-22 from July through August 2023. Calculations for PW-2R-12 for July and August 2023 assumed a flow of 12 gallons per minute (gpm) during July and August 2023 when the pump was operational.

Purge well PW-3R-12 AMR readings were available August 2023 through February 2024. AMR readings were not available for PW-3R-23 for July 2023 and April 2024 through the end of the second quarter of 2024. Calculations for PW-3R-12 in July 2023 assume a flow of 36.71 gpm based on the June 2023 calculated flow. The PW-3R-12 AMR readings stopped advancing after March 25, 2024. As described above the pump was operational, however the meter was not. The PW-3R-12 calculations for April through June 2024 are interpolated based on the calculated flow using the March 1, 2024 to March 24, 2024 AMR readings during the portions of the months that the well was operational. PW-3R-12 was shut down for rehabilitation tasks on May 29 and restarted on June 4, 2024.

The meters in PW-1R-12 and PW-3R-12 are anticipated to be replaced during the third quarter of 2024.

Manholes

November 2023 through March 2024

On November 6, 2023, Tetra Tech personnel observed that the MH-B discharge pump was left running in the manual override for the pump. The meter was likely running since October 26, 2023. On November 6, 2023 the meter was again turned back to auto, allowing the pump to discharge only when it reaches the float level. Due to the high leachate levels observed in the manhole in early 2023, additionally, visits throughout the fourth quarter 2023 and first quarter 2024 were completed to discharge leachate for a specified duration.

North Side Methane Collection System (NSMCS)

The NSMCS was turned off in April 2022 and has remained off to determine if there are any methane detections at the landfill or across Ellsworth Road. Given the age of the landfill and the reduced methane generation, it is likely that the NSMCS is no longer needed. Gas monitoring for the landfill and offsite locations has continued through 2023 and 2024 to obtain temporal and seasonal data, in accordance with the Addendum to Gas Plan Monitoring Revisions dated May 1, 2008 and Gas Monitoring Plan Revisions dated June 4, 2021.

It has been a pleasure to be of service to the City of Ann Arbor. If you have any questions, please contact us.

Sincerely,

Alison Rauss
Senior Project Scientist

Patti McCall
Principal Hydrogeologist

cc: Alison Heatley

Attachment G: Landfill Inspection Report Template

Monthly Maintenance Inspection Tasks
Ann Arbor Landfill

Instructions:
Complete inspections during monthly landfill field events.
Place Xs in appropriate locations.
Provide explanations where noted as required and if any new issues are observed.

Staff: _____

Date(s): _____

Location	Locked?	Labeled?	Concrete Condition?		Comments: Need explanation if concrete condition marked poor (cracked, etc.) Note any other (new) maintenance issues observed
			Good	Poor	
Purge Wells					
PW-1R-12					
PW-1R-12 acid wells					
PW-2R-22					
PW-2R-22 acid wellls					
PW-3R-12					
PW-3R-12 acid wells					
Manholes					
MH-A					
MH-B					

Location	Any notable (new) conditions?		Comments: Need explanation if concrete condition marked poor (cracked, etc.)
	Yes	No	
Landfill Gas to Energy (LGTE) System (previously called Aria System)			

Location	Locked?	Fence Condition		Skid Condition		Comments: Need explanation if fence condition or skid condition marked poor Note any other (new) maintenance issues observed
		Good	Poor	Good	Poor	
North Side Methane Collection System (NSMCS)						

Location	Standing water present?		If standing water present - bubbling?		Comments: Need explanation if either condition marked yes Note any other (new) maintenance issues observed
	Yes	No	Yes	No	
West Side of Phase I					

Location	Free of Dead Animals?		Comment: Provide explanation if marked no Note any other (new) maintenance issues observed
	Yes	No	
Ponds			
NW Corner of Phase I			
NE Corner of Phase II			

Monthly Maintenance Inspection Tasks
Ann Arbor Landfill

Instructions:
Complete inspections during monthly landfill field events.
Place Xs in appropriate locations.
Provide explanations where noted as required and if any new issues are observed.

Staff: _____

Date(s): _____

***Bring copy of landfill map and mark up observation locations as necessary.**

***Take photos of any new maintenance issues.**

***Attach separate sheet(s) if necessary**

Location	Any notable (new) conditions?		Comments: Need explanation if marked yes (new potential leachate outbreak areas, rills, etc.)
	Yes	No	
Phase I			
Additional Phase I Observations:			

Location	Any notable (new) conditions?		Comments: Need explanation if marked yes (new potential leachate outbreak areas, rills, etc.)
	Yes	No	
Phase II			
Additional Observations:			