



July 22, 2022

Ms. Megan Kuczka
New York State Department of Environmental Conservation
270 Michigan Ave.
Buffalo, NY 14203

Via Email to: megan.kuczka@dec.ny.gov

**Re: 2021 Periodic Review Report
Pfohl Brothers Landfill, Town of Cheektowaga, New York
Site 915043**

Dear Ms. Kuczka:

Enclosed is the Revised 2021 Periodic Review Report for the Pfohl Brothers Landfill in Cheektowaga, New York. URS has revised this report in response to comments received from you via email on May 25, 2022.

If you have any questions on this report, please feel free to contact me.

Sincerely,

URS CORPORATION

A handwritten signature in black ink, reading "Robert J. Murphy".

Robert J. Murphy, P.G.
Project Manager

Enclosures

cc: Patrick Bowen, P.E. – Town of Cheektowaga
File 11172700 (C-1)

**PERIODIC REVIEW REPORT 2021
PFOHL BROTHERS LANDFILL
CHEEKTOWAGA, NY**

Submitted to:

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
270 MICHIGAN AVENUE
BUFFALO, NEW YORK 14203**

Prepared by:

**URS CORPORATION
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Prepared for:

**TOWN OF CHEEKTOWAGA
ENGINEERING DEPARTMENT
275 ALEXANDER AVE
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JULY 2022

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Figure 2-1 Site Plan

ATTACHMENTS

Attachment A January 2021 – June 2021 Semiannual Report and Data Applicability Report
Attachment B July 2021 – December 2021 Semiannual Report and Data Applicability Report
Attachment C IC/EC Certification

1.0 INTRODUCTION

This Periodic Review Report (PRR) is being submitted for the Pfohl Brothers Landfill Site (Site) to document the implementation of, and compliance with, the site-specific site management requirements stated in the Operation and Maintenance (O&M) Plan, which was issued as draft in 2002 and approved as final in 2006. The PRR was prepared using the guidance presented in of Section 6.3(b) of New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER)-10 *Technical Guidance for Site Investigation and Remediation*.

1.1 Background

The Pfohl Brothers Landfill Site (NYSDEC Site No. 915043) is a landfill located on the north and south sides of Aero Drive in the Town of Cheektowaga, New York State, Erie County. The site is located in a commercial area just west of Transit Road. The landfill was operated between 1932 and 1971 receiving household and industrial wastes. The industrial waste included paints, waste solvents, thinners, pine tar pitch, cellulose, rubber, scrap metal and phenolic tars. A Remedial Investigation and Feasibility Study was completed in 1991. The data showed that on-site soils, groundwater, seeps, and sediments were contaminated with volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals. The data did not show any significant off-site impact. A Record of Decision (ROD) was issued in 1992 requiring the landfill to be consolidated and closed. A second ROD was issued in 1994 which stipulated the removal of the northern portion of the site (located immediately south of Interstate 90) from the site description. The ROD also stated that there will be no action in regard to off-site groundwater.

The final remedial design for the site was completed in 2001. The remedial construction consisted of waste consolidation; capping of landfills on either side of Aero Drive; providing leachate collection around these areas; restoring wetlands; and fencing the landfill. Work started in 2001 and was completed in 2002. The consolidated landfill was reduced to approximately 94 acres (liner cap area only), the approximate area of the landfill (liner cap and soil cover) inside the boundary fences is 102.51 acres. Deed restrictions have been filed by the Potentially Responsible Parties (PRPs). The Operation and Maintenance (O&M) Plan was approved in March 2006 and is being implemented by the Town of Cheektowaga.

1.2 Effectiveness of Remedial Program

During 2021, the capping and remedial action remedy continued to successfully prevent exposure of buried waste to health or environmental receptors. Effectiveness has been demonstrated through maintenance of the landfill cap, effective hydraulic control of groundwater beneath the cap, and regular semiannual groundwater sampling.

1.3 Compliance

The management of the site is in compliance with the O&M Plan. Institutional controls in the form of deed restrictions remain in place.

1.4 Recommendations

No changes to the operation, maintenance and monitoring of the site are recommended.

2.0 SITE OVERVIEW

2.1 Site Description

The boundaries of the site are shown on Figure 2-1. The area within the red site boundary outline on Figure 2-1 is approximately 145 acres. The site is located immediately southwest of the Interstate 90 Ramp at Transit Road in the Town of Cheektowaga. The site is bisected by the east/west Aero Drive. Each of the two portions of the landfill are covered with a cap comprised of a gas venting layer, a low permeability synthetic membrane, and a barrier protection fill layer. Surrounding the entire site is a groundwater/leachate collection system consisting of a collection trench that drains into six wet wells. Leachate and groundwater collected in the wet wells is pumped via submersible pumps to a 15-inch sanitary sewer line on the south side of Aero Drive. This sanitary sewer, installed as part of the remedy, connects to the existing 15-inch sanitary sewer on Rein Road south of Aero Drive. The collected groundwater/leachate discharges to the sanitary sewer under a permit from the Buffalo Sewer Authority.

2.2 Chronology

The principal elements of the remedy were consolidation of waste materials, construction of a landfill cap and construction of a perimeter leachate collection system. Construction of the remedy was completed in 2002.

O&M started in 2002 upon completion of construction. These efforts are performed in accordance with the O&M Plan issued as draft in 2002 and approved as final in 2006. Based on the results of the first three years of surface water, sediment and groundwater monitoring, the surface water/sediment sampling was discontinued in 2008, and the list of parameters evaluated during groundwater sampling was reduced in 2006 (limiting the list of VOC, SVOC, and metal parameters) and 2007 (discontinuing dioxin and radionuclide analyses).

3.0 REMEDY PERFORMANCE, EFFECTIVENESS AND PROTECTIVENESS

The principal elements of the O&M are:

- ▶ Groundwater monitoring
- ▶ Effluent monitoring
- ▶ Hydraulic monitoring
- ▶ Wetlands monitoring
- ▶ General physical and mechanical maintenance.

The Town of Cheektowaga submits O&M reports to NYSDEC twice per year reporting on the performance, effectiveness, and protectiveness of each of these elements. The two reports covering the calendar year of 2021 are attached to this PRR. A summary of the findings of performance, effectiveness, and protectiveness for 2021 is presented in the sections below.

3.1 Groundwater Monitoring

As the O&M contractor for the Town of Cheektowaga, URS Corporation (URS) has performed 36 rounds of semiannual groundwater sampling. The most recent sampling was conducted in May and November 2021. Results of this sampling continue to show no impacts to groundwater from the landfill. In brief, no VOCs were detected above Class GA water quality standards. SVOCs were non-detect and/or below Class GA water quality standards with three exceptions during the two events. The SVOC 1,4-dichlorobenzene was detected in well GW-03D at estimated concentrations of 3.7 and 4.1 micrograms per liter (µg/L), slightly exceeding its standard of 3.0 µg/L in May 2021 and November 2021, respectively. The SVOC bis(2-ethylhexyl)phthalate was detected in well GW-07D at an concentration of 22 µg/L, exceeding its standard of 5.0 µg/L in May 2021.

The metals iron, magnesium, manganese, and sodium exceeded Class GA standards in most site wells. Other metals detected above Class GA standards in 2021 were chromium, lead, and nickel in well GW-07D during both sampling events.

No significant changes in metals concentrations were observed when compared to previous analytical results. Results were within the historical range of concentrations observed for these metals. The attached semiannual reports present the 2021 data in tables, graphs, and charts.

3.2 Surface Water/Sediment Sampling

Surface water and sediment sampling was discontinued in 2008 after three years of sampling showed that no site-related contaminants were present in these media. This sampling was eliminated in accordance with the O&M Plan as approved by NYSDEC.

3.3 Effluent Monitoring

Effluent monitoring was performed on a quarterly basis during 2021. The permit requires quarterly sampling and analysis of metals (barium, cadmium, chromium, copper, lead, nickel, and zinc) and total suspended solids. The parameter values in the effluent were below the discharge criteria for all quarterly sampling events conducted in 2021. The results of the sampling are reported in the attached semiannual reports.

3.4 Hydraulic Monitoring

Hydraulic monitoring was performed on a quarterly basis during 2021. Hydraulic monitoring is performed through measuring the water elevation in each of the six wet wells and in nine manholes associated with the perimeter collection system and comparing each of these elevations with the groundwater elevations in paired monitoring wells adjacent to each wet well or manhole. Hydraulic control is demonstrated by groundwater levels outside the collection system that are higher than the levels measured in the corresponding wet well or manhole for each measurement date (i.e., a downward vertical hydraulic gradient). The vertical hydraulic gradient was downwards relative to the groundwater collection system for every quarterly measurement taken during 2021. These data demonstrate that the collection system is operating as designed.

3.5 Wetlands Monitoring

The monitoring of wetlands mitigation measures has not been performed as originally planned in the O&M Plan. Initially, the wetlands species planted for mitigation fared poorly due to trampling from geese and deer. Fences were erected in 2004 to keep this wildlife out. Some wetland vegetation was also lost during landfill cap mowing in 2005 when the mowing contractor mowed a greater area than had been specified. The wetland vegetation species were replanted in 2005. However, in the time since construction ended in 2002, the *Phragmites sp.* vegetation that is quite abundant in this area has spread and established itself throughout the areas formerly disturbed during construction. *Phragmites sp.* does not provide robust food source for wildlife but does act to stabilize soil in the interface zone between the landfill and the existing pond and wetlands. As such, monitoring of the planted wetland mitigation species is no longer performed.

3.6 General Physical and Mechanical Maintenance

The Town of Cheektowaga performs general physical and mechanical maintenance of the Site, as needed. Example maintenance items are routine maintenance and replacement of pumps and instrumentation used for groundwater/leachate collection, annual cap mowing, snow plowing, etc. A summary of the general maintenance activities performed during 2021 is provided in the attached semiannual reports.

4.0 IC/EC PLAN COMPLIANCE

There is no formal Institutional Control/Engineering Control (IC/EC) plan for this site. However, there are IC/ECs in place, and they are functioning as intended. These are discussed below.

4.1 Institutional Controls

ICs consist of restrictions on land use for the various parcels that comprise this site. The parcels and their restrictions are listed on the attached Site Management PRR Notice Institutional and Engineering Controls Certification Form (Attachment C). The restrictions address building use, groundwater use, surface water use, and land use. Compliance with these ICs is evaluated by observation to see if any infringing activities are occurring on these parcels. These ICs remain in effect, as certified in Attachment C.

4.2 Engineering Controls

ECs consist of the landfill cap, fencing and access control, collection of the groundwater/leachate, and vapor mitigation. Compliance with these ECs is evaluated at a minimum through inspection of these elements during each semiannual monitoring event. In most cases, inspection is more frequent. For example, collection of the groundwater/leachate is monitored continuously by Town of Cheektowaga personnel and effluent compliance reports are submitted quarterly to the BSA. These ECs remain in effect, as certified in Attachment C.

5.0 OPERATION & MAINTENANCE AND MONITORING PLAN COMPLIANCE

The components of the O&M Plan are discussed above in Section 3.0. Summaries of O&M activities performed during 2021 are provided in the attached semiannual reports. The O&M activities show that the landfill and its groundwater/leachate collection system are operating as intended and receive repairs and maintenance as needed in a timely fashion. Analysis of the groundwater in monitoring wells and the effluent generated by the groundwater/leachate collection system show that no landfill contamination is migrating to these media, and therefore the wastes remain effectively contained.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The remedy at the Pfohl Brothers Landfill Site is operating as designed and remains protective of human health and the environment. No changes to the O&M for this site are recommended.

FIGURES

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ATTACHMENTS

ATTACHMENT A

January 2021 – June 2021

Semiannual Report

And

Data Applicability Report

**SEMIANNUAL REPORT
OPERATION AND MAINTENANCE
JANUARY 2021 TO JUNE 2021
PFOHL BROTHERS LANDFILL
CHEEKTOWAGA, NY**

Submitted to:

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**APRIL
2022**

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APPENDICES

Appendix A	Example Daily Inspection Sheets
Appendix B	Monthly Flow Summaries (January 2021 – June 2021)
Appendix C	Hydraulic Monitoring Tables
Appendix D	Groundwater Purge and Sample Collection Logs
Appendix E	Groundwater Trend Analysis
Appendix F	BSA Permit 19-04-CH016
Appendix G	Discharge Report Summary Tables
Appendix H	Monitoring Well Inspection Logs

1.0 INTRODUCTION

1.1 Background

The Pfohl Brothers Landfill is located on Aero Drive in the Town of Cheektowaga, New York (Figure 1-1). The site is listed as Site No. 915043 on the New York State Department of Environmental Conservation's (NYSDEC's) Registry of Inactive Hazardous Waste Disposal Sites. A Consent Order between NYSDEC and potentially responsible parties (PRPs) for closure of the site was signed in 2001 and remedial construction commenced in 2001. The remedy included consolidation of waste material, capping of the waste disposal and consolidation areas, and encircling the landfill areas with a groundwater collection system to prevent off-site migration. The remedial action was completed in 2002.

Responsibility for implementing the remedy was divided between a "steering committee" of industrial PRPs and the Town of Cheektowaga. The steering committee responsibilities lay generally with the capital construction activities of the remedy including waste consolidation, cap and drainage system installation, etc. The Town of Cheektowaga, which was named as a PRP for disposal of municipal waste at the Pfohl Brothers Landfill when it was operating, is performing the operation and maintenance (O&M) activities at the landfill, pursuant to a settlement agreement between the Town and the steering committee.

1.2 Operation and Maintenance Activities

While construction of the remedy was substantially complete by late 2002, the final O&M Plan which was issued as draft in 2002, was not approved by the NYSDEC until March 10, 2006. However, the Town of Cheektowaga and its consultant (URS Corporation – New York (URS)) assumed most of the operational responsibilities since 2002. This includes a variety of general maintenance activities as outlined in Section 2 and sampling and other monitoring activities outlined in Section 3.

Beginning in 2004, the Town and URS assumed all of the O&M activities described in the O&M Plan. This is the Semiannual Report as called for by Section 3.6 of the O&M Plan.

2.0 GENERAL MAINTENANCE ACTIVITIES

Since completion of construction activities in 2002, personnel from the Town of Cheektowaga Engineering Department have performed general activities to ensure the physical operation of the landfill as intended by the design. The various O&M activities performed by the Town from January through June 2021 included the following actions:

- Recorded the amount of groundwater discharged through the collection system daily. The flow rate displayed by each wet well pump at the time of daily inspection and the total cumulative volume of flow was recorded for each wet well on daily inspection sheets. A few examples of the daily inspection sheet for this reporting period are attached in Appendix A.
- Summarized total cumulative effluent flow rates and volumes on a monthly basis. The monthly totals for the period, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- Shut down the wet well pumps during wet weather flow conditions as necessary at various times throughout the year. Such actions were only taken upon request of the Buffalo Sewer Authority (BSA) during heavy storm events in order to reduce the hydraulic load on the BSA treatment system during such events. Shutdown events are recorded and included with the monthly flow data in Appendix B as previously requested by NYSDEC.
- Cleaned/replaced check valves as necessary at all six (6) wet wells and replaced surge suppressors and fuses as needed for pump station instrumentation equipment.
- Inspected wet wells for excessive corrosion to critical equipment.
- Cleaned upper level equipment and applied corrosion inhibitor fluid.
- Performed bimonthly site/security check, data retrieval, and analysis.
- Surge suppressor rest after numerous power outages.
- Level transmitter faults, fuses and surge protection replaced.
- Removed and reinstalled force main flex pipe at Manhole #20 for inspection due to plugged pipe.

- Replaced faulty 1 ½ horsepower sewage pump in wet well WW-5.
- Sun Environmental performed water jetting service to reduce and remove iron deposits in force main. This debris was inhibiting flow in the area of wet well WW-5.
- GHD resolved ongoing wet well WW-2 flow signal disparities.
- Replaced faulty UPS unit
- Removed heavy discarded debris from facility control entrance road.
- Removed roadside (litter) debris and cleaned illegal dumping on north and south sides of Aero Drive.
- Plowed snow to access the Control Building when necessary.

3.0 MONITORING ACTIVITIES

The Town of Cheektowaga retained URS to perform monitoring activities as outlined in Section 3.1 of the O&M Plan. During the period of January 2004 through the present, groundwater hydraulic monitoring (Section 3.1.1.2 of the O&M Plan) and effluent monitoring (Section 3.1.4 of the O&M Plan) was performed on a quarterly basis. Semi-annual groundwater quality monitoring (Section 3.1.1.3 of the O&M Plan) was performed during this reporting period (i.e, January through June 2021). A summary of the monitoring activities is presented in the following subsections. Hydraulic and groundwater sampling locations are shown on Figure 3-1.

3.1 Groundwater Hydraulic Monitoring

Groundwater and surface water elevations were monitored on a quarterly basis at all locations listed in Table 3.1 of the O&M Plan. The hydraulic monitoring data tables showing groundwater elevations are presented in Appendix C. In Appendix C, Table C-1 lists the measured elevations and Table C-2 provides a comparison of the measured levels in the wells and corresponding manholes/wet wells.

The data presented in Appendix C indicate that groundwater levels outside the collection system were higher than the levels measured in the corresponding wet well or manhole for each measurement date. This demonstrates that the collection system is operating as designed.

3.2 Groundwater Quality Monitoring

This semi-annual round of groundwater sampling was conducted between May 19 and 21, 2021. Overburden and bedrock wells listed in Table 3.2 of the O&M Plan were purged and sampled using dedicated/disposable equipment. Figure 3-1 shows the well locations. Low flow sampling techniques were used with the exceptions noted below.

Passive diffusion bags (PDBs) were placed in three monitoring wells with low recharge rates (GW-04S, GW-07S, and GW-07D) on March 26, 2021. The PDBs were removed from the wells during the May 2021 sampling event, and the water was poured into the appropriate sample containers for analysis of volatile organic compounds (VOCs). Following removal of the PDBs, the three wells were purged dry. Field water quality parameters (i.e., pH, specific conductivity, temperature, dissolved oxygen, oxidation reduction potential, and turbidity) were measured during

the purging process. The other required analytical parameters (i.e., semivolatile organic compounds [SVOCs] and metals) were collected after water levels recovered (the next day for monitoring wells GW-07D and GW-07S and later the same day for monitoring well GW-04S).

Purge logs and sampling summary sheets with water quality measurements are provided in Appendix D. Following collection, the samples were packed with ice in coolers and transported under chain-of-custody control to Eurofins TestAmerica Laboratories of Amherst, New York.

The groundwater samples were analyzed for the VOCs, SVOCs, and metals listed in Table 3.2 of the O&M Plan as revised in accordance with Table 3-6 in the Semiannual Report dated September 2007 (January through June 2007) and as approved by the December 6, 2006 and November 29, 2007 correspondence from the NYSDEC authorizing a reduction in the parameters list (included as Table 3-1 in this report).

Laboratory Report

The groundwater analytical data package was prepared by Eurofins TestAmerica in accordance with NYSDEC Category A deliverable requirements. A limited data review was performed by a URS chemist in accordance with the following United States Environmental Protection Agency (USEPA) guidelines:

- *Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B & 8260C, SOP HW-24, Rev. 4, October 2014;*
- *Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8270D, SOP HW-22, Rev. 5, December 2010;*
- *ICP-AES Data Validation, SOP HW-3a, Rev. 1, September 2016; and*
- *Mercury and Cyanide Data Validation, SOP HW-3c, Rev. 1, September 2016.*

Qualifications applied to the data include “J” (estimated concentration) and “U” (not detected).

URS prepared a Data Applicability Report (DAR) following the guidelines provided in NYSDEC Division of Environmental Remediation (DER-10) *Technical Guidance for Site*

Investigation and Remediation, Appendix 2B, dated May 2010. The DAR dated June 2021 is submitted separately from this report.

Results

Table 3-2 of this report presents the groundwater sample results compared with NYSDEC Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Class GA water quality standards.

No VOCs were detected at concentrations above the Class GA water quality standards at any location. Two SVOCs, 1,4-dichlorobenzene and bis(2-ethylhexyl)phthalate, were detected at a concentration above their Class GA water quality standards. 1,4-Dichlorobenzene was present in well GW-03D at an estimated concentration of 3.7 micrograms per liter ($\mu\text{g/L}$), slightly exceeding its water quality standard of 3.0 $\mu\text{g/L}$. Bis(2-ethylhexyl)phthalate was present in well GW-07D at an concentration of 22 $\mu\text{g/L}$, exceeding its water quality standard of 5.0 $\mu\text{g/L}$.

The metals iron, magnesium, manganese, and sodium exceeded Class GA standards in most site wells. The sample from well GW-07D also had concentrations of chromium, lead, and nickel exceeding their respective Class GA standards.

Comparison to Historical Results

Organics

Results are consistent with historical results; there have been very few and infrequent detections of most VOCs/SVOCs. 1,4-Dichlorobenzene has frequently been detected in GW-03D, with estimated concentrations ranging from 2.4 to 4.2 $\mu\text{g/L}$ over the last five years. The last time bis(2-ethylhexyl)phthalate was detected at a concentration exceeding its water quality standard in GW-07D was November 2018.

Metals

No significant changes in metals concentrations were observed when compared to previous analytical results. The concentrations of iron, magnesium, manganese, and sodium in most site wells were similar to the concentrations found during previous sampling events.

Sodium concentrations were generally elevated in bedrock wells (GW-01D, GW-03D, GW-08D, and GW-26D) and shallow wells adjacent to roads (GW-01S). The sodium concentrations were also elevated in wells GW-03S and GW-08SR. The higher sodium concentrations in the bedrock wells may be attributed to the bedrock composition and the elevated concentrations in the shallow wells may be the result of seasonal road de-icing activities.

Trend Analysis

Organics

There is an insufficient number and frequency of detections to define trends.

Metals

A trend analysis of groundwater parameters that routinely exceed Class GA groundwater standards was performed and is presented graphically in Figures E-1 through E-19 of Appendix E. A review of the trend analysis indicated that no significant changes or trends in concentrations of any of the parameters exceeding groundwater standards have occurred over the semi-annual sampling events. The Mann-Kendall Nonparametric Test for Trend was used to determine the trends summarized below (“--” indicates no discernable trend):

Figure	Monitoring Well	Parameters Routinely Exceeding Groundwater Standards and Trend			
		Iron	Magnesium	Manganese	Sodium
E-1	GW-01D	--	--	--	Upward
E-2	GW-01S	Downward	--	Upward	Downward
E-3	GW-03D	Downward	Downward	Downward	Downward
E-4	GW-03S	Downward	Upward	Downward	Upward
E-5	GW-04D	Downward	Upward	Downward	Upward
E-6	GW-04S	--	Upward	Downward	--
E-7	GW-07D	--	Upward	Upward	--
E-8	GW-07S	Downward	Upward	Downward	Upward
E-9	GW-08D	Downward	Downward	Downward	--
E-10	GW-08SR	Downward	Upward	--	--
E-11	GW-26D	Downward	Downward	Downward	Upward
E-12	GW-28S	Downward	Downward	Downward	Downward
E-13	GW-29S	--	--	--	Downward

Figure	Monitoring Well	Parameters Routinely Exceeding Groundwater Standards and Trend			
		Iron	Magnesium	Manganese	Sodium
E-14	GW-30S	Downward (with seasonal variation)	Downward (with seasonal variation)	Downward (with seasonal variation)	Downward (with seasonal variation)
E-15	GW-31S	Upward	Downward	Downward	Downward
E-16	GW-32S	Downward	Downward	Upward	Downward (with seasonal variation)
E-17	GW-33S	Downward	Downward	Downward	Downward
E-18	GW-34S	Downward	Downward	Seasonal Variation	Downward
E-19	GW-35S	Downward	Downward	Downward	Downward

3.3 Groundwater Discharge Monitoring

Two quarterly sampling events (March 2021 and June 2021) of the groundwater collection system discharge were completed since the previous Semiannual Report. The sampling was performed in accordance with the requirements of Discharge Permit No. 19-04-CH016 between the BSA and the Town of Cheektowaga. The permit requires quarterly sampling and analysis of metals (barium, cadmium, chromium, copper, lead, nickel, and zinc) and total suspended solids. A copy of the permit, which shows the monitoring parameters and associated discharge limits, is included as Appendix F.

During the sampling events in March 2021 and June 2021, each regulated parameter was below the limits set by the permits. Copies of the data summary tables that were included with the monitoring reports submitted to the BSA are included as Appendix G.

3.4 Monitoring Well Inspections

During the May 2021 groundwater sampling event, a well inspection was performed. All wells appeared to be in good condition with the exception of previously existing minor damage to the risers on monitoring wells GW-07D, GW-01S, and GW-01D. The wells are still functional. The monitoring well inspection logs may be found in Appendix H.

4.0 SUMMARY AND RECOMMENDATIONS

General Maintenance: The Town of Cheektowaga will continue to maintain mechanical equipment at the landfill on an as-needed basis and operate the groundwater collection and discharge system as designed. The Town will also continue regular inspections, mow the cap once per year, and plow snow to access the Control Building, as necessary.

Groundwater Hydraulic Monitoring: Hydraulic monitoring has been performed on a quarterly basis in conjunction with the discharge monitoring. Water level measurement data demonstrates that the collection trench water levels are largely maintained at lower elevations than monitoring points outside the landfill system, as designed. Continued quarterly monitoring is recommended.

Groundwater Quality Monitoring: Groundwater sample results indicate that only low levels of SVOCs and metals are present. Similar concentrations of most parameters were found during previous sampling events. The next round of groundwater sampling will be conducted in November 2021. Low flow sampling techniques will be used. Passive diffusion bags will be used again for VOC analyses at the three wells (GW-04S, GW-07S, and GW-07D) that go dry when using low flow sampling techniques.

Groundwater Discharge Monitoring: Groundwater discharges remain within permit limits. Continued quarterly monitoring is recommended.

TABLES

TABLE 3-1

APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

GROUNDWATER SAMPLING SUMMARY

OPERATION AND MAINTENANCE PLAN

PFOHL BROTHERS LANDFILL SITE, CHEEKTOWAGA, NEW YORK

LOCATIONS

GW-1D/1S
GW- 3D/3S
GW- 4D/4S
GW- 7D/7S
GW- 8D/8S(R)
GW- 26D/35S
GW- 28S
GW- 29S
GW- 30S
GW- 31S
GW- 32S
GW- 33S
GW- 34S

FREQUENCY

semi-annually for overburden and bedrock groundwater

PARAMETERS

<i>Field</i>	pH conductivity temperature turbidity
<i>VOCs</i>	Acetone Benzene 1,2-Dichloroethene (total) 1,1,2-Trichloroethane Vinyl chloride
<i>SVOCs</i>	Phenol 1,3-Dichlorobenzene 1,4-Dichlorobenzene bis(2-Ethylhexyl)phthalate

TABLE 3-1 (continued)

APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

**GROUNDWATER SAMPLING SUMMARY
OPERATION AND MAINTENANCE PLAN
PFOHL BROTHERS LANDFILL SITE, CHEEKTOWAGA, NEW YORK**

PARAMETERS (cont'd)

<i>Metals</i>	Antimony
	Arsenic
	Barium
	Cadmium
	Chromium
	Copper
	Iron
	Lead
	Magnesium
	Manganese
	Mercury
	Nickel
	Silver
	Sodium
	Zinc

TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2021

Location ID			GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID			GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/19/21	05/19/21	05/20/21	05/20/21	05/19/21
Parameter	Units	*					
Volatile Organic Compounds							
Acetone	UG/L	50					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3			2.8 J		
1,4-Dichlorobenzene	UG/L	3			3.7 J		
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.088	0.17	0.081	0.086	0.091
Cadmium	MG/L	0.005	0.00051 J	0.00051 J		0.0011	0.00051 J
Chromium	MG/L	0.05	0.010			0.0074	0.0012 J
Copper	MG/L	0.2					
Iron	MG/L	0.3	1.0	5.9	1.0	0.16	0.071
Lead	MG/L	0.025					
Magnesium	MG/L	35	37.2	20.3	16.4	76.9	74.3
Manganese	MG/L	0.3	0.036	0.93	0.24	0.099	0.019
Nickel	MG/L	0.1	0.036		0.0040 J	0.051	
Sodium	MG/L	20	125	172	183	119	97.5
Zinc	MG/L	2	0.016		0.0021 J	0.0099 J	0.017

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

Flags assigned during chemistry validation are shown.



Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed.

Only Detected Results Reported.

TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2021

Location ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/19/21	05/19/21	05/20/21	05/19/21	05/20/21
Parameter	Units	*					
Volatile Organic Compounds							
Acetone	UG/L	50		14	NA		NA
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3		NA		NA	
1,4-Dichlorobenzene	UG/L	3		NA		NA	
bis(2-Ethylhexyl)phthalate	UG/L	5		NA	22	NA	
Metals							
Arsenic	MG/L	0.025		NA		NA	
Barium	MG/L	1	0.10	NA	0.12	NA	0.46
Cadmium	MG/L	0.005	0.00056 J	NA	0.0031	NA	
Chromium	MG/L	0.05	0.0040	NA	0.98	NA	0.0014 J
Copper	MG/L	0.2	0.0020 J	NA	0.056	NA	
Iron	MG/L	0.3	0.95	NA	11.5	NA	0.10
Lead	MG/L	0.025		NA	0.18	NA	
Magnesium	MG/L	35	27.8	NA	38.3	NA	46.8
Manganese	MG/L	0.3	0.056	NA	0.17	NA	0.074
Nickel	MG/L	0.1	0.0034 J	NA	0.43	NA	0.0080 J
Sodium	MG/L	20	29.3	NA	85.2	NA	63.6
Zinc	MG/L	2	0.0046 J	NA	0.088	NA	0.0045 J

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

Flags assigned during chemistry validation are shown.



Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

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Only Detected Results Reported.

TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2021

Location ID			GW-08D	GW-08SR	GW-26D	GW-26D	GW-28S
Sample ID			GW-08D	GW-08SR	FD-052021	GW-26D	GW-28S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/20/21	05/20/21	05/20/21	05/20/21	05/21/21
Parameter	Units	*			Field Duplicate (1-1)		
Volatile Organic Compounds							
Acetone	UG/L	50					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.069	0.099	0.10	0.10	0.075
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05	0.038	0.0015 J			
Copper	MG/L	0.2	0.0028 J				0.0025 J
Iron	MG/L	0.3	0.50	7.9	2.0	1.8	0.11
Lead	MG/L	0.025					
Magnesium	MG/L	35	16.8	47.3	14.7	14.6	25.0
Manganese	MG/L	0.3	0.0085	0.59	0.32	0.31	0.81
Nickel	MG/L	0.1	0.011	0.0013 J			
Sodium	MG/L	20	203	160	296	293	8.3
Zinc	MG/L	2	0.010	0.0018 J			0.0020 J

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

Flags assigned during chemistry validation are shown.



Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed.

Only Detected Results Reported.

TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2021

Location ID			GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID			GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/21/21	05/21/21	05/21/21	05/21/21	05/21/21
Parameter	Units	*					
Volatile Organic Compounds							
Acetone	UG/L	50					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Arsenic	MG/L	0.025	0.020				
Barium	MG/L	1	0.18	0.14	0.085	0.053	0.044
Cadmium	MG/L	0.005	0.00052 J				
Chromium	MG/L	0.05					
Copper	MG/L	0.2					
Iron	MG/L	0.3	12.5	8.4	4.3	0.023 J	0.027 J
Lead	MG/L	0.025	0.0030 J				
Magnesium	MG/L	35	62.7	31.2	25.0	27.7	24.2
Manganese	MG/L	0.3	0.59	1.1	0.65	0.37	0.044
Nickel	MG/L	0.1					
Sodium	MG/L	20	9.4	104	2.4	2.7	2.1
Zinc	MG/L	2		0.26	0.0027 J	0.0030 J	

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the arachnids.

Flags assigned during chemistry validation are shown.



Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed.

Only Detected Results Reported.

TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2021

Location ID			GW-34S	GW-35S
Sample ID			GW-34S	GW-35S
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			05/20/21	05/20/21
Parameter	Units	*		
Volatile Organic Compounds				
Acetone	UG/L	50		
Semivolatile Organic Compounds				
1,3-Dichlorobenzene	UG/L	3		
1,4-Dichlorobenzene	UG/L	3		
bis(2-Ethylhexyl)phthalate	UG/L	5		
Metals				
Arsenic	MG/L	0.025		
Barium	MG/L	1	0.15	0.089
Cadmium	MG/L	0.005		
Chromium	MG/L	0.05		
Copper	MG/L	0.2		
Iron	MG/L	0.3	0.096	0.057
Lead	MG/L	0.025		
Magnesium	MG/L	35	37.6	22.9
Manganese	MG/L	0.3	0.66	0.16
Nickel	MG/L	0.1	0.0041 J	
Sodium	MG/L	20	23.2	2.8
Zinc	MG/L	2		0.0023 J

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

Flags assigned during chemistry validation are shown.



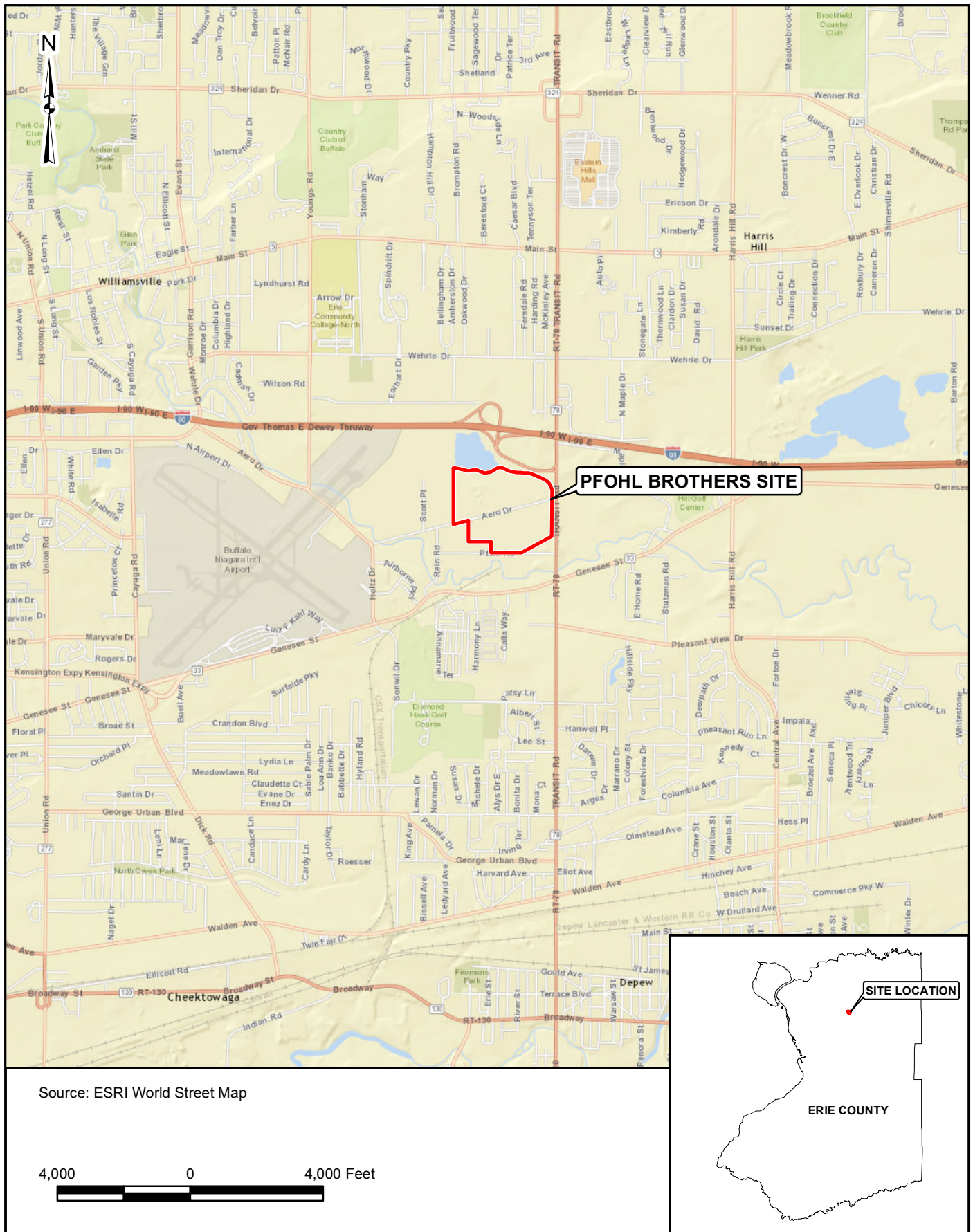
Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed.

Only Detected Results Reported.

FIGURES



J:\Projects\11172700.00000\GIS\ARCMAP\Site Plan.mxd 4/9/2020



APPENDIX A

EXAMPLE DAILY INSPECTION SHEETS

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 2/4/21
Time _____

Weather conditions clear/cold
Read by: _____

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	<u>99.0</u>	<u>0</u>	<u>-1</u>	<u>2792</u>
WW-2	<u>4.7</u>	<u>0</u>	<u>22359</u>	<u>215</u>
WW-1	<u>4.0</u>	<u>0</u>	<u>306052</u>	<u>7947</u>
WW-6	<u>6.5</u>	<u>0</u>	<u>3160256</u>	<u>19848</u>
WW-4	<u>7.3</u>	<u>29.4</u>	<u>1326717</u>	<u>9534</u>
WW-5	<u>7.4</u> <u>2.7</u>	<u>-2.7</u>	<u>1162691</u>	<u>6289</u>

Flow Totalizer at Meter chamber

6103147

Heat Trace

Outside temp T = 39
Current A = 1.9

Set point SP = 40

Surge Suppressor events 285

Motor Control Center

Volts 2180 volts
Amps 6 amps

Which WW was running?

1 2 3 4 5 6

Filter

Checked

Changed

Comments and/or Current Conditions

Ran WW-3 on hand

WW-5 Fault - investigate today!
* Discharge Hose needs replacing ASAP.

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date

4/24/21

Weather conditions

Clear

Time

0806

Read by:

JWN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	1416	2793
WW-2	4.2	0	22543	216
WW-1	4.0	0	442398	8002
WW-6	6.1	0	4444505	20292
WW-4	8.2	24.1	2390031	10146
WW-5	8.0	15.0	1128075	6290

Flow Totalizer at Meter chamber

Heat Trace

Outside temp T = 52

Set point SP = 40

Current A =

Surge Suppressor events

326

Motor Control Center

Volts 480 volts

Which WW was running?

Amps 9 amps

1 2 3 4 5 6

Filter

Checked

Changed

Comments and/or Current Conditions

Reset items ✓ WW-2 surge sup.
All seems well ✓
Reset WW-5 Runtime = new pump

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 5/21/21
Time 0715

Weather conditions 65-75°F CLOUDY
Read by: RM/Accom

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	<u>9.9</u>	<u>0.0</u>	<u>1416</u>	<u>2793</u>
WW-2	<u>4.7</u>	<u>0.0</u>	<u>22604</u>	<u>216</u>
WW-1	<u>4.6</u>	<u>0.0</u>	<u>442398</u>	<u>8002</u>
WW-6	<u>7.3</u>	<u>41.0</u>	<u>4775412</u>	<u>20418</u>
WW-4	<u>6.8</u>	<u>0.0</u>	<u>2529379</u>	<u>10252</u>
WW-5	<u>6.6</u>	<u>0.0</u>	<u>1380537</u>	<u>90</u>

Flow Totalizer at Meter chamber 40.0 9385762

Heat Trace

Outside temp T = 82°
Current A = 0.0

Set point SP = 40

Surge Suppressor events 333

Motor Control Center

Volts 485 volts
Amps 5 amps

Which WW was running?

1 2 3 4 5 6

Filter **Checked** **Changed**

Comments and/or Current Conditions

Accommodate for GW SAMPLING

WW-2 + WW-3 IN ALARM

APPENDIX B

MONTHLY FLOW SUMMARIES
JANUARY 2021 – JUNE 2021

Direct Discharge Flow Data

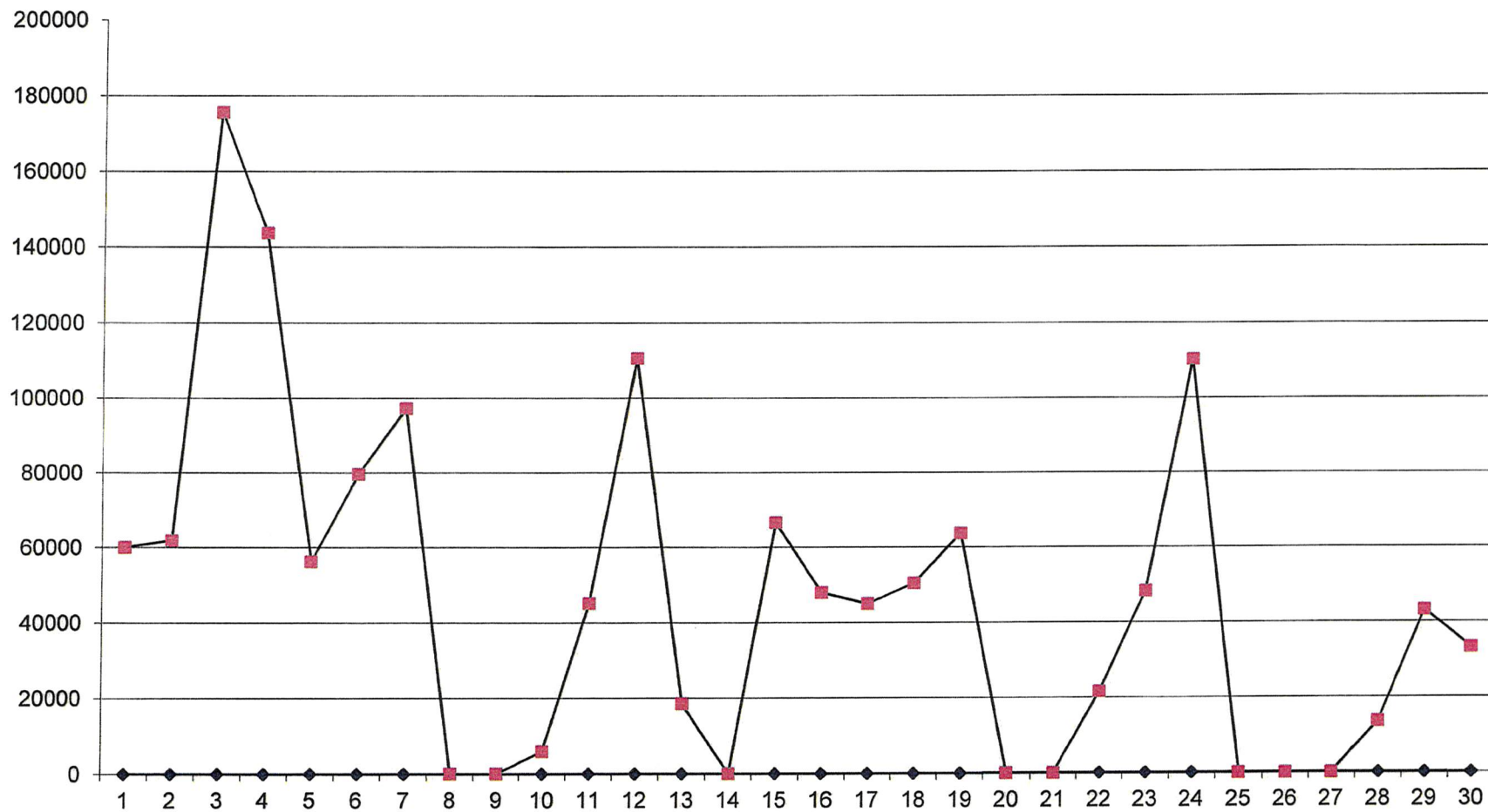
12/31/2020

4,597,342

0

Jan-21	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		4,657,443	60,101	14:14 enable 22:44 inhibit
2		4,719,368	61,924	15:21 enable
3		4,895,048	175,680	
4		5,038,750	143,702	
5		5,095,038	56,288	
6		5,174,733	79,694	
7		5,271,956	97,223	
8		5,271,956	0	
9		5,271,956	0	
10		5,277,847	5,890	
11		5,323,009	45,162	
12		5,433,489	110,480	
13		5,451,956	18,466	
14		5,451,956	0	
15		5,518,630	66,674	
16		5,566,584	47,954	
17		5,611,609	45,025	
18		5,662,048	50,438	
19		5,725,776	63,728	
20		5,725,776	0	
21		5,725,776	0	
22		5,747,330	21,554	
23		5,795,644	48,314	
24		5,905,799	110,155	
25		5,905,799	0	
26		5,905,799	0	
27		5,905,799	0	
28		5,919,338	13,538	
29		5,962,538	43,200	
30		5,995,778	33,240	
31		5,995,778	0	
		1,398,436	1,398,430	

January
2021



Direct Discharge Flow Data

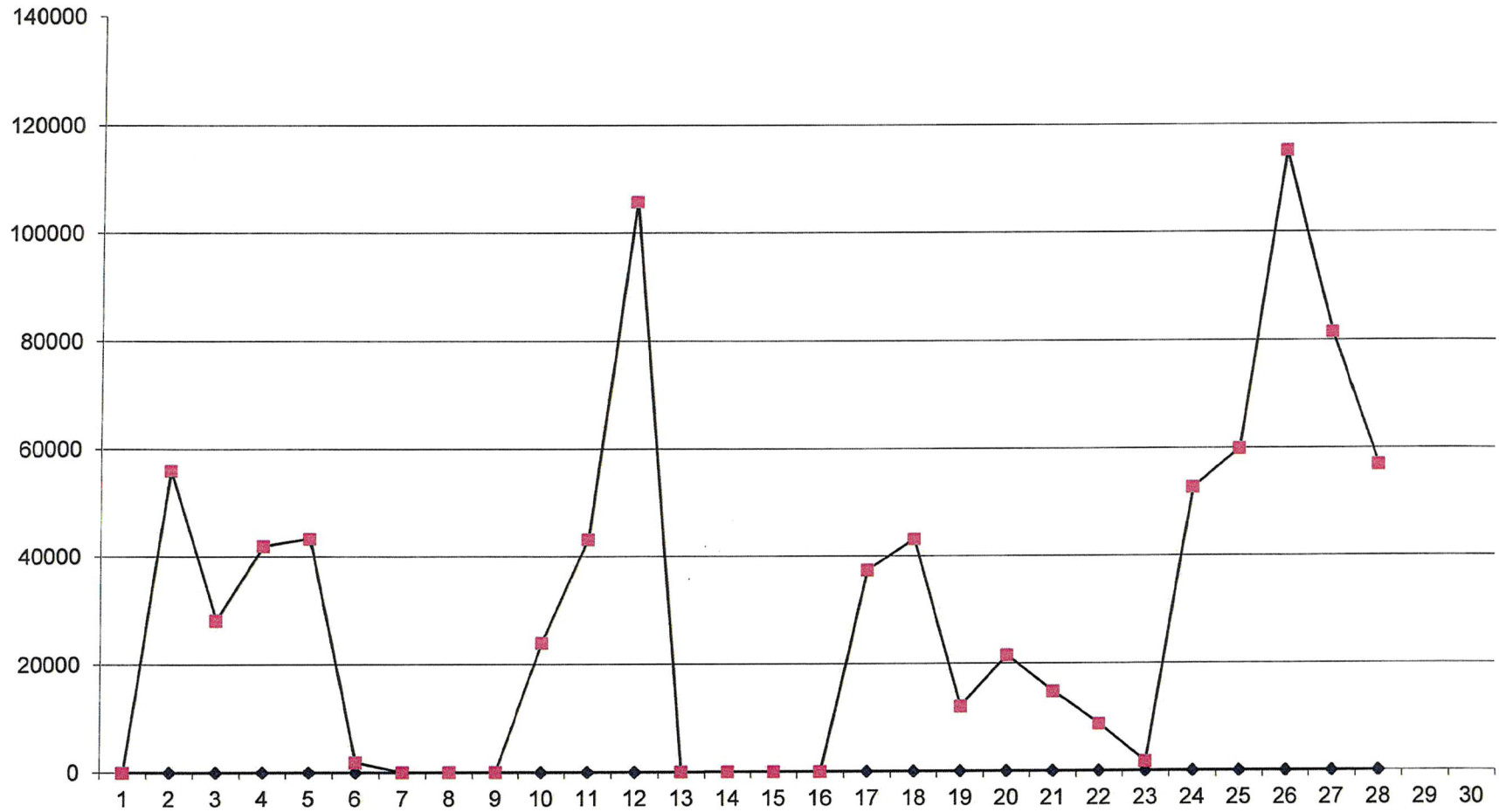
1/31/2021

5,995,778

0

Feb-21	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		5,995,778	0	
2		6,051,893	56,115	
3		6,080,069	28,176	
4		6,122,021	41,952	
5		6,165,355	43,334	
6		6,167,155	1,800	
7		6,167,155	0	
8		6,167,155	0	
9		6,167,155	0	
10		6,191,136	23,981	
11		6,234,336	43,200	
12		6,340,128	105,792	
13		6,340,128	0	
14		6,340,128	0	
15		6,340,128	0	
16		6,340,128	0	
17		6,377,531	37,403	
18		6,420,731	43,200	
19		6,432,769	12,037	
20		6,454,330	21,561	
21		6,469,111	14,780	
22		6,477,865	8,754	
23		6,479,574	1,709	
24		6,532,392	52,818	21:30 inhibit
25		6,592,368	59,976	11:14 enable
26		6,707,568	115,200	
27		6,789,081	81,513	
28		6,846,114	57,033	
		850,336	850,334	

February
2021

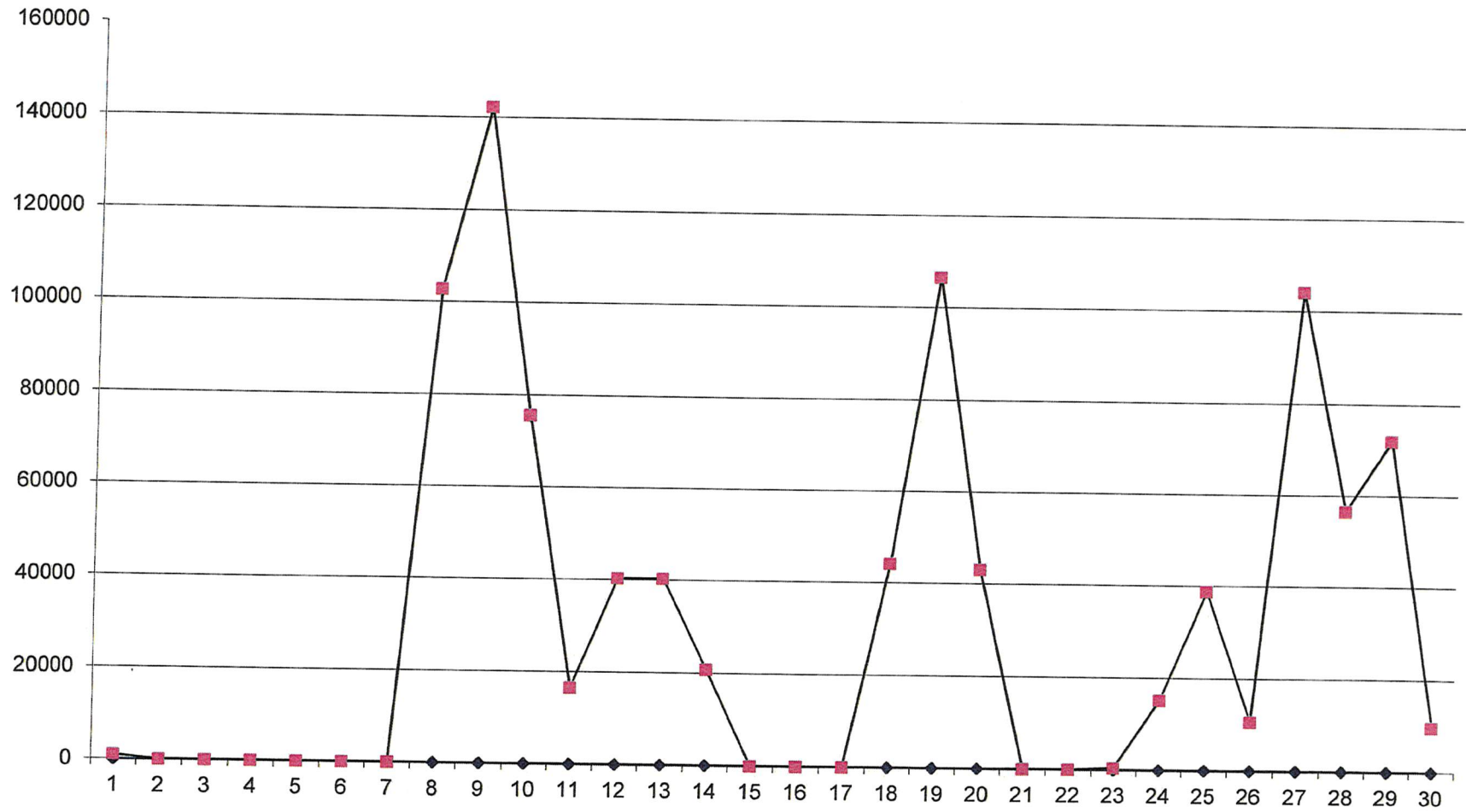


Direct Discharge Flow Data

2/38/2021

		6,846,114	57,033	
Mar-21	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		6,847,073	958	19:54 inhibit
2		6,847,073	0	
3		6,847,073	0	
4		6,847,073	0	
5		6,847,073	0	
6		6,847,073	0	
7		6,847,073	0	
8		6,949,841	102,768	07:46 enable
9		7,092,055	142,214	
10		7,167,722	75,666	23:31 inhibit
11		7,184,307	16,585	14:05 enable
12		7,224,632	40,324	
13		7,264,953	40,321	
14		7,285,722	20,769	
15		7,285,722	0	
16		7,285,722	0	
17		7,285,722	0	
18		7,329,974	44,252	
19		7,436,534	106,560	
20		7,479,648	43,114	
21		7,479,648	0	
22		7,479,648	0	
23		7,480,081	433	
24		7,495,276	15,195	
25		7,534,056	38,780	23:03 inhibit
26		7,544,733	10,677	22:00 enable
27		7,648,953	104,220	
28		7,705,557	56,604	14:53 inhibit 21:08 enable
29		7,777,557	72,000	
30		7,787,370	9,812	
31		7,787,370	0	
		941,256	941,252	

March
2021



Direct Discharge Flow Data

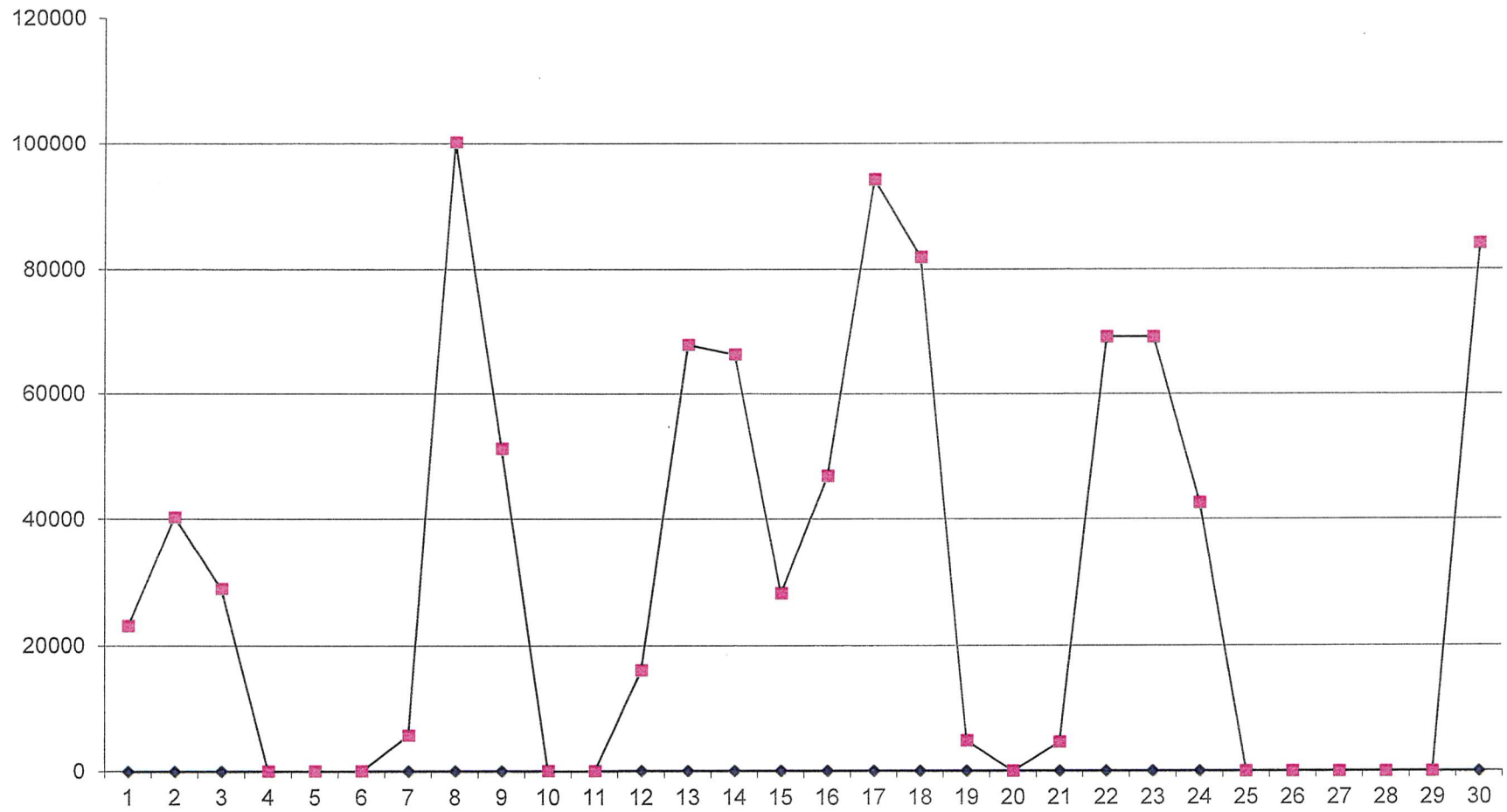
3/31/2021

7,787,370

0

Apr-21	Time; 11:58pm unless otherwise stated	7810536	Daily Total Discharge (Gallons)	Notes
1		7,810,536	23,166	
2		7,850,856	40,320	
3		7,879,843	28,987	
4		7,879,843	0	
5		7,879,843	0	
6		7,879,843	0	
7		7,885,513	5,670	
8		7,985,638	100,125	
9		8,036,866	51,228	
10		8,036,866	0	
11		8,036,866	0	09:53 inhibit
12		8,052,877	16,011	18:31 enable
13		8,120,651	67,773	
14		8,186,891	66,240	
15		8,215,098	28,207	
16		8,261,946	46,848	
17		8,356,102	94,155	
18		8,437,963	81,861	
19		8,442,789	4,826	
20		8,442,789	0	
21		8,447,372	4,583	
22		8,516,492	69,120	
23		8,585,612	69,120	
24		8,628,271	42,659	
25		8,628,271	0	
26		8,628,271	0	23:33 inhibit
27		8,628,271	0	08:24 enable
28		8,628,271	0	
29		8,628,271	0	15:23 inhibit
30		8,712,370	84,099	
		925,000	924,998	

April
2021



Direct Discharge Flow Data

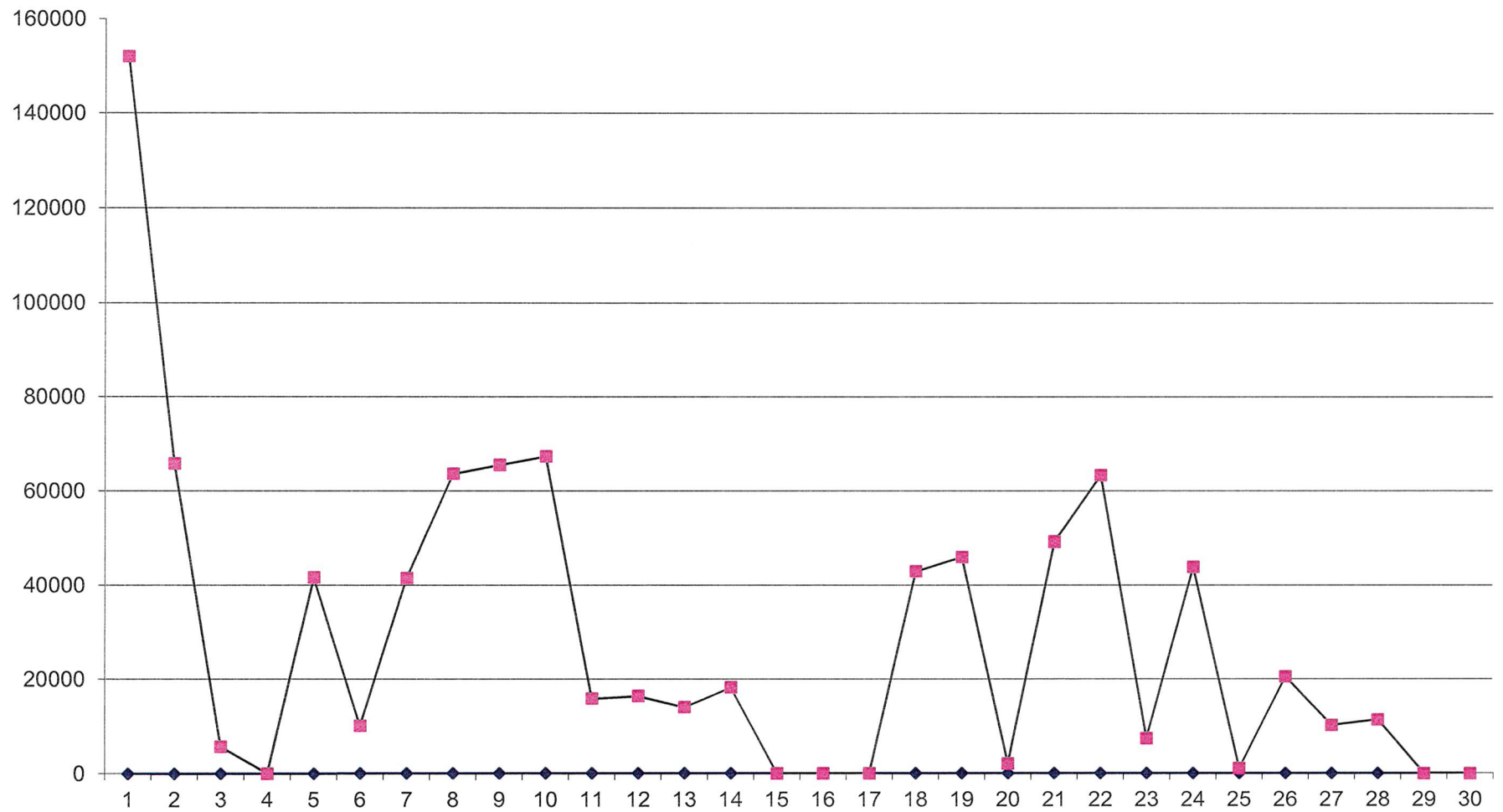
4/30/2021

8,712,370

84,099

May-21	Time; 11:58pm unless otherwise stated	7810536	Daily Total Discharge (Gallons)	Notes
1		8,864,348	151,978	
2		8,930,137	65,789	
3		8,935,802	5,665	
4		8,935,802	0	
5		8,977,399	41,597	
6		8,987,478	10,079	
7		9,028,902	41,424	05:18 inhibit 12:20 enable
8		9,092,494	63,592	
9		9,157,951	65,457	
10		9,225,222	67,271	
11		9,241,019	15,797	
12		9,257,387	16,368	
13		9,271,400	14,013	
14		9,289,582	18,182	
15		9,289,582	0	
16		9,289,582	0	
17		9,289,582	0	
18		9,332,457	42,875	
19		9,378,347	45,890	
20		9,380,408	2,061	
21		9,429,622	49,214	
22		9,492,982	63,360	
23		9,500,370	7,388	
24		9,544,190	43,820	
25		9,545,214	1,024	
26		9,565,700	20,486	
27		9,575,852	10,152	
28		9,587,192	11,340	17:57 inhibit
29		9,587,192	0	11:02 enable
30		9,587,192	0	
31		9,587,192	0	
		874,822	874,822	

May
2021



Direct Discharge Flow Data

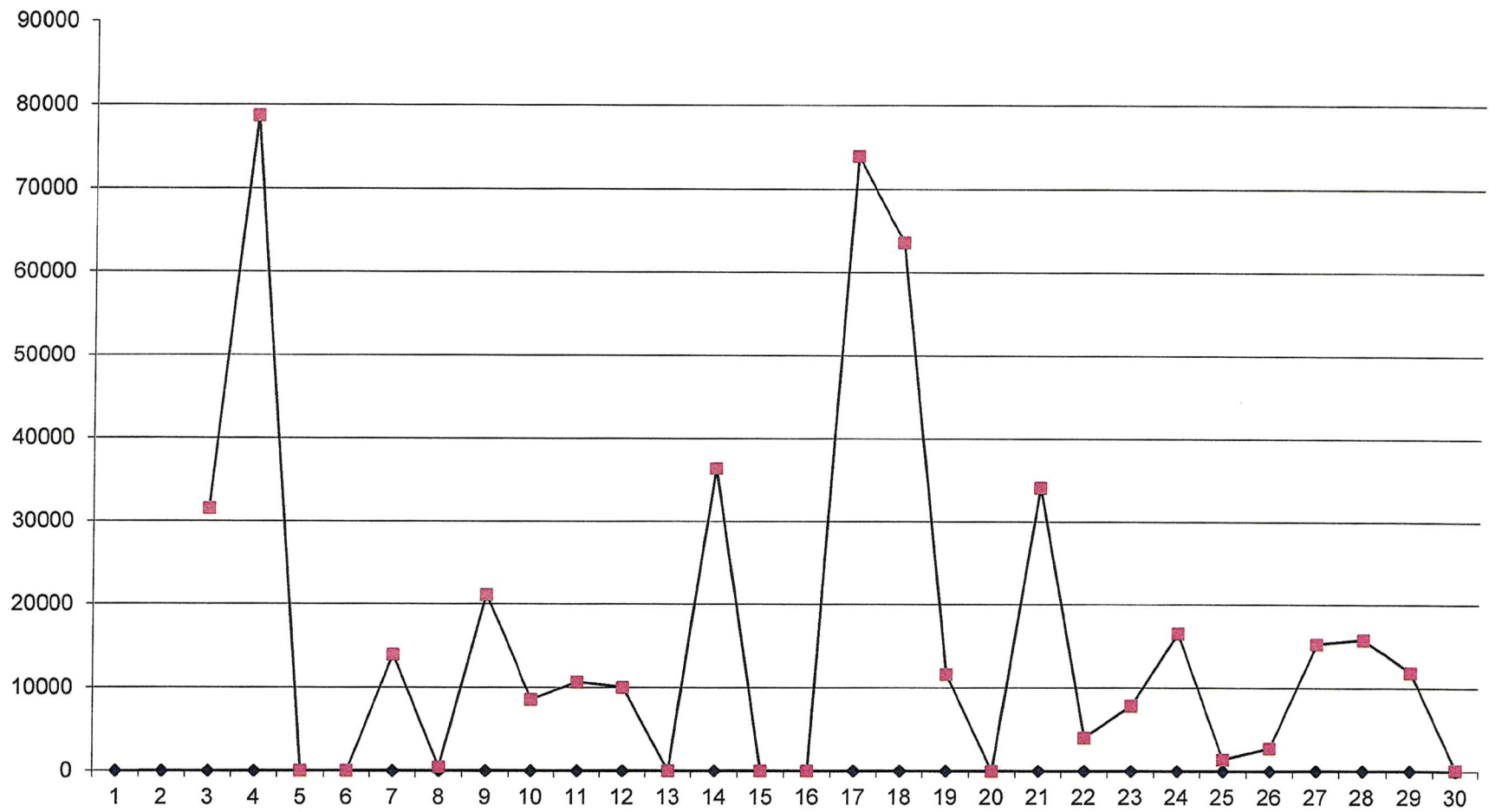
5/28/2021

9,587,192

11,340

Jun-21	Time; 11:58pm unless otherwise stated	7810536	Daily Total Discharge (Gallons)	Notes
1				
2				
3		9,618,767	31,575	
4		9,697,466	78,699	
5		9,697,466	0	
6		9,697,466	0	
7		9,711,466	14,000	
8		9,711,920	454	
9		9,733,023	21,103	
10		9,741,618	8,595	
11		9,752,275	10,657	
12		9,762,298	10,023	
13		9,762,298	0	
14		9,798,695	36,397	11:41 inhibit 17:51 enable
15		9,798,695	0	
16		9,798,695	0	
17		9,872,599	73,904	
18		9,936,178	63,579	
19		9,947,838	11,660	
20		9,947,838	0	22:45 inhibit
21		9,981,979	34,141	10:40 enable
22		9,986,044	4,065	
23		9,993,934	7,890	
24		10,010,496	16,562	
25		10,011,906	1,410	23:29 inhibit
26		10,014,687	2,781	10:06 enable
27		10,029,987	15,300	
28		10,045,809	15,822	
29		10,057,712	11,903	
30		10,057,894	182	
31				
		470,702	470,702	

June
2021



APPENDIX C

HYDRAULIC MONITORING TABLES

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-01D	1073088.634	1117968.213	694.41	NM	696.12	D	1						
MNW								3/26/2021 1254	2.61	693.51	0.00	693.51	
MNW								5/19/2021 1233	3.31	692.81	0.00	692.81	
MNW								6/29/2021 1133	4.19	691.93	0.00	691.93	
GW-01S	1073087.779	1117961.500	694.53	NM	696.19	S	1						
MNW								3/26/2021 1253	2.31	693.88	0.00	693.88	
MNW								5/19/2021 1350	4.61	691.58	0.00	691.58	
MNW								6/29/2021 1132	6.20	689.99	0.00	689.99	
GW-03D	1073819.106	1114602.426	692.35	NM	693.88	D	1						
MNW								3/26/2021 1115	0.81	693.07	0.00	693.07	
MNW								5/19/2021 0831	1.94	691.94	0.00	691.94	
MNW								6/29/2021 1004	2.22	691.66	0.00	691.66	
GW-03S	1073812.622	1114605.762	692.61	NM	693.80	S	1						
MNW								3/26/2021 1116	1.97	691.83	0.00	691.83	
MNW								5/19/2021 0830	2.98	690.82	0.00	690.82	
MNW								6/29/2021 1005	7.79	686.01	0.00	686.01	
GW-04D	1072289.432	1114685.625	690.89	NM	692.75	D	1						
MNW								3/26/2021 1302	11.82	680.93	0.00	680.93	
MNW								5/19/2021 1524	12.75	680.00	0.00	680.00	
MNW								6/29/2021 1141	13.17	679.58	0.00	679.58	
GW-04S	1072284.456	1114685.127	690.76	NM	692.72	S	1						
MNW								3/26/2021 1302	4.22	688.50	0.00	688.50	
MNW								5/19/2021 1506	4.55	688.17	0.00	688.17	
MNW								6/29/2021 1140	6.02	686.70	0.00	686.70	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-07D	1071242.458	1117669.925	697.15	NM	699.94	D	1						
MNW								3/26/2021 1227	48.09	651.85	0.00	651.85	
MNW								5/19/2021 0946	44.00	655.94	0.00	655.94	
MNW								6/29/2021 1125	55.82	644.12	0.00	644.12	
GW-07S	1071238.157	1117666.265	697.47	NM	699.51	S	1						
MNW								3/26/2021 1228	4.55	694.96	0.00	694.96	
MNW								5/19/2021 0945	5.08	694.43	0.00	694.43	
MNW								6/29/2021 1126	6.86	692.65	0.00	692.65	
GW-08D	1073713.617	1116795.328	695.28	NM	697.79	D	1						
MNW								3/26/2021 1128	4.84	692.95	0.00	692.95	
MNW								5/19/2021 0846	5.95	691.84	0.00	691.84	
MNW								6/29/2021 1016	6.26	691.53	0.00	691.53	
GW-08SR	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								3/26/2021 1129	4.97	692.53	0.00	692.53	
MNW								5/19/2021 0844	5.37	692.13	0.00	692.13	
MNW								6/29/2021 1015	5.89	691.61	0.00	691.61	
GW-26D	1071698.573	1115997.470	696.01	NM	698.50	D	1						
MNW								3/26/2021 1215	5.73	692.77	0.00	692.77	
MNW								5/19/2021 0935	6.78	691.72	0.00	691.72	
MNW								6/29/2021 1113	7.08	691.42	0.00	691.42	
GW-28S	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								3/26/2021 1139	9.22	691.73	0.00	691.73	
MNW								5/19/2021 0855	9.30	691.65	0.00	691.65	
MNW								6/29/2021 1022	10.65	690.30	0.00	690.30	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-29S	1072552.638	1117761.993	697.50	NM	699.63	S	1						
MNW								3/26/2021 1200	8.27	691.36	0.00	691.36	
MNW								5/19/2021 0919	8.82	690.81	0.00	690.81	
MNW								6/29/2021 1038	10.16	689.47	0.00	689.47	
GW-30S	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								3/26/2021 1204	7.24	689.34	0.00	689.34	
MNW								5/19/2021 0922	7.86	688.72	0.00	688.72	
MNW								6/29/2021 1042	8.26	688.32	0.00	688.32	
GW-31S	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								3/26/2021 1208	2.63	695.99	0.00	695.99	
MNW								5/19/2021 0926	3.59	695.03	0.00	695.03	
MNW								6/29/2021 1105	6.91	691.71	0.00	691.71	
GW-32S	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								3/26/2021 1211	2.30	696.07	0.00	696.07	
MNW								5/19/2021 0930	3.90	694.47	0.00	694.47	
MNW								6/29/2021 1108	6.00	692.37	0.00	692.37	
GW-33S	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								3/26/2021 1219	2.90	695.34	0.00	695.34	
MNW								5/19/2021 0938	5.35	692.89	0.00	692.89	
MNW								6/29/2021 1119	7.78	690.46	0.00	690.46	
GW-34S	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								3/26/2021 1105	2.52	692.25	0.00	692.25	
MNW								5/19/2021 0820	3.15	691.62	0.00	691.62	
MNW								6/29/2021 0958	5.77	689.00	0.00	689.00	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-35S	1071701.925	1115985.585	696.19	NM	697.39	S	1						
MNW								3/26/2021 1214	3.15	694.24	0.00	694.24	
MNW								5/19/2021 0933	3.82	693.57	0.00	693.57	
MNW								6/29/2021 1114	5.82	691.57	0.00	691.57	
MH-01	1073806.665	1114810.501	698.62	NM	698.62	NA	1						
MH								3/26/2021 1111	10.03	688.59	0.00	688.59	
MH								5/19/2021 0824	9.78	688.84	0.00	688.84	
MH								6/29/2021 1002	10.17	688.45	0.00	688.45	
MH-03	1073736.789	1115259.334	699.40	NM	699.40	NA	1						
MH								3/26/2021 1123	10.92	688.48	0.00	688.48	
MH								5/19/2021 0837	10.60	688.80	0.00	688.80	
MH								6/29/2021 1009	11.07	688.33	0.00	688.33	
MH-07	1073838.229	1116243.757	696.82	NM	696.82	NA	1						
MH								3/26/2021 1125	9.08	687.74	0.00	687.74	
MH								5/19/2021 0840	8.80	688.02	0.00	688.02	
MH								6/29/2021 1011	9.32	687.50	0.00	687.50	
MH-10	1073540.729	1117381.524	703.01	NM	703.01	NA	1						
MH								3/26/2021 1134	15.15	687.86	0.00	687.86	
MH								5/19/2021 0852	14.42	688.59	0.00	688.59	
MH								6/29/2021 1019	14.52	688.49	0.00	688.49	
MH-15	1072531.567	1117761.125	699.02	NM	699.02	NA	1						
MH								3/26/2021 1159	14.86	684.16	0.00	684.16	
MH								5/19/2021 0916	14.88	684.14	0.00	684.14	
MH								6/29/2021 1039	14.87	684.15	0.00	684.15	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
MH-16	1072133.714	1117748.238	698.57	NM	698.57	NA	1						
MH								3/26/2021 1203	14.44	684.13	0.00	684.13	
MH								5/19/2021 0921	14.74	683.83	0.00	683.83	
MH								6/29/2021 1042	14.52	684.05	0.00	684.05	
MH-17	1071813.137	1117180.019	702.16	NM	702.16	NA	1						
MH								3/26/2021 1207	18.05	684.11	0.00	684.11	
MH								5/19/2021 0924	18.19	683.97	0.00	683.97	
MH								6/29/2021 1104	18.27	683.89	0.00	683.89	
MH-20	1071756.395	1115997.024	706.20	NM	706.20	NA	1						
MH								3/26/2021 1213	19.76	686.44	0.00	686.44	
MH								5/19/2021 0931	20.37	685.83	0.00	685.83	
MH								6/29/2021 1111	19.87	686.33	0.00	686.33	
MH-22	1072158.023	1115589.309	698.05	NM	698.05	NA	1						
MH								3/26/2021 1218	9.00	689.05	0.00	689.05	
MH								5/19/2021 0937	8.98	689.07	0.00	689.07	
MH								6/29/2021 1118	9.03	689.02	0.00	689.02	
MH-25	1072483.928	1114820.313	698.17	NM	698.17	NA	1						
MH								3/26/2021 1059	9.52	688.65	0.00	688.65	
MH								5/19/2021 0815	9.31	688.86	0.00	688.86	
MH								6/29/2021 0953	9.80	688.37	0.00	688.37	
SG-01	1073882.887	1114813.101	NM	NM	690.00	NA	1						
SG								3/26/2021 1112	-1.21	691.21	0.00	691.21	
SG								5/19/2021 0825	NM	-	NM	-	Dry @ -0.84'
SG								6/29/2021 1003	NM	-	NM	-	Dry @ -0.80'

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
SG-02	1073738.27	1116805.85	NM	NM	690.00	NA	1						
SG								3/26/2021 1132	-3.75	693.75	0.00	693.75	
SG								5/19/2021 0847	NM	-	NM	-	Dry @ -3.10'
SG								6/29/2021 1017	NM	-	NM	-	Dry @ -3.10'
WW-01	1073676.903	1115710.476	NM	NM	684.02	NA	1						
MH								3/26/2021 1030	-4.30	688.32	0.00	688.32	
MH								5/19/2021 0756	-4.60	688.62	0.00	688.62	
MH								6/29/2021 0930	-4.20	688.22	0.00	688.22	
WW-02	1073684.724	1116792.311	NM	NM	684.18	NA	1						
MH								3/26/2021 1030	-3.90	688.08	0.00	688.08	
MH								5/19/2021 0756	-4.70	688.88	0.00	688.88	
MH								6/29/2021 0930	-4.60	688.78	0.00	688.78	
WW-03	1073140.339	1117618.499	NM	NM	683.80	NA	1						
MH								3/26/2021 1142	-4.77	688.57	0.00	688.57	
MH								5/19/2021 0858	-4.74	688.54	0.00	688.54	
MH								6/29/2021 1025	-4.68	688.48	0.00	688.48	
WW-04	1072057.563	1117610.508	NM	NM	676.62	NA	1						
MH								3/26/2021 1030	-6.90	683.52	0.00	683.52	
MH								5/19/2021 0756	-6.50	683.12	0.00	683.12	
MH								6/29/2021 0930	-6.80	683.42	0.00	683.42	
WW-05	1071661.368	1116370.876	NM	NM	676.14	NA	1						
MH								3/26/2021 1030	-6.70	682.84	0.00	682.84	
MH								5/19/2021 0756	-6.60	682.74	0.00	682.74	
MH								6/29/2021 0930	-6.20	682.34	0.00	682.34	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
WW-06	1072988.420	1114811.518	NM	NM	681.89	NA	1						
MH								3/26/2021 1030	-7.30	689.19	0.00	689.19	
MH								5/19/2021 0756	-7.50	689.39	0.00	689.39	
MH								6/29/2021 0930	-6.80	688.69	0.00	688.69	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-2
PFOHL BROTHERS LANDFILL SITE
OVERBURDEN HYDRAULIC GRADIENT**

WELL PAIR:	WW-1	*	Level	WW-2	GW-8SR	Level	SG-02	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft)
3/26/2021	688.32	---	---	688.08	692.53	4.45	693.75	5.67
5/19/2021	688.62	---	---	688.88	692.13	3.25	Dry	NA
6/29/2021	688.22	---	---	688.78	691.61	2.83	Dry	NA

WELL PAIR:	WW-3	GW-28S	Level	WW-4	*	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/26/2021	688.57	691.73	3.16	683.52	---	---
5/19/2021	688.54	691.65	3.11	683.12	---	---
6/29/2021	688.48	690.30	1.82	683.42	---	---

WELL PAIR:	WW-5	GW-32S	Level	WW-6	GW-34S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/26/2021	682.84	696.07	13.23	689.19	692.25	3.06
5/19/2021	682.74	694.47	11.73	689.39	691.62	2.23
6/29/2021	682.34	692.37	10.03	688.69	689.00	0.31

WELL PAIR:	MH-1	SG-1	Level	MH-15	GW-29S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/26/2021	688.59	691.21	2.62	684.16	691.36	7.20
5/19/2021	688.84	DRY	NA	684.14	690.81	6.67
6/29/2021	688.45	DRY	NA	684.15	689.47	5.32

WELL PAIR:	MH-16	GW-30S	Level	MH-17	GW-31S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/26/2021	684.13	689.34	5.21	684.11	695.99	11.88
5/19/2021	683.83	688.72	4.89	683.97	695.03	11.06
6/29/2021	684.05	688.32	4.27	683.89	691.71	7.82

WELL PAIR:	MH-20	GW-35S	Level	MH-22	GW-33S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/26/2021	686.44	694.24	7.80	689.05	695.34	6.29
5/19/2021	685.83	693.57	7.74	689.07	692.89	3.82
6/29/2021	686.33	691.57	5.24	689.02	690.46	1.44

Notes:

* = No corresponding monitoring well.
NA = Not applicable

APPENDIX D

**GROUNDWATER PURGE AND SAMPLE COLLECTION
LOGS**

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-01S

Date: 5/19/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.61'	Depth to Well Bottom:	14.94'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.4	Estimated Purge Volume (liters):	7.0
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Sample ID:	GW-01S	Sample Time:	14:25	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Riser pipe is bulged inwards, could not remove stainless steel bailer from within well, sampled around it.

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-01D

Date: 5/19/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.31'	Depth to Well Bottom:	39.65'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	89.8	Estimated Purge Volume (liters):	53.3
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Sample ID:	GW-01D	Sample Time:	13:38	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-03S

Date: 5/20/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.22'	Depth to Well Bottom:	13.22'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.2	Estimated Purge Volume (liters):	6.8
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Sample ID:	GW-03S	Sample Time:	11:04	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-03D

Date: 5/20/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	1.98'	Depth to Well Bottom:	35.70'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	83.3	Estimated Purge Volume (liters):	51.0
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Sample ID:	GW-03D	Sample Time:	10:11	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-04S

Date: 5/19/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.55'	Depth to Well Bottom:	16.23'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	7.2	Estimated Purge Volume (liters):	15.1
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Sample ID:	GW-4S	Sample Time:	VOC's- 15:02/ SVOC's and Metals- 16:55	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Placed passive diffusion bag (PDB) in well 3/26/2021, sampled VOCs from PDB at 15:02 on 5/19/2021.

Well historically goes dry at very low purge rates (<75ml/min). Bailed dry and sampled for SVOCs and Metals after recovery at 16:55.

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-04D

Date: 5/19/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	12.75'	Depth to Well Bottom:	45.57'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	81.1	Estimated Purge Volume (liters):	13.5
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Sample ID:	GW-4D	Sample Time:	16:39	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:24	7.41	12.4	1.470	1.62	51.0	-161.5	180	12.78
15:29	7.36	11.8	1.458	0.59	10.33	-180.1	180	13.08
15:34	7.36	11.8	1.459	0.34	2.68	-196.4	180	13.36
15:40	7.36	11.7	1.454	0.25	2.73	-214.3	180	13.50
15:45	7.38	11.7	1.450	0.20	4.34	-236.8	180	13.71
15:51	7.35	11.7	1.463	0.16	7.55	-265.7	180	13.86
15:56	7.33	11.5	1.456	0.15	9.80	-278.4	180	13.97
16:00	7.34	11.5	1.460	0.12	12.04	-303.6	180	14.05
16:05	7.31	11.7	1.467	0.10	13.59	-310.4	180	14.19
16:12	7.28	11.7	1.483	0.08	2.98	-457.9	180	14.21
16:17	7.28	11.3	1.477	0.07	2.66	-464.5	180	14.25
16:24	7.28	11.3	1.474	0.06	5.28	-437.9	180	14.35
16:27	7.28	11.3	1.473	0.05	3.86	-413.1	180	14.42
16:30	7.28	11.3	1.480	0.05	2.01	-408.2	180	14.48
16:33	7.27	11.3	1.481	0.04	2.27	-399.0	180	14.52
16:36	7.27	11.6	1.490	0.04	2.67	-393.3	180	14.58
16:39	7.26	11.6	1.495	0.04	2.19	-392.7	180	14.62
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

WELL PURGING LOG

URS Corporation

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-07S
PROJECT NO.:	60411174		
STAFF:	Rob Murphy, Ann Marie Kropovitch		
DATE(S):	5/19/2021 & 5/20/2021		

1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	<u>35.33</u>	WELL ID. 1"	VOL. (GAL/FT) 0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	<u>5.08</u>	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	<u>30.25</u>	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	<u>0.17</u>	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	<u>5.14</u>	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	<u> </u>	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	<u>8.0</u>	8"	2.60

$V=0.0408 \times (\text{CASING DIAMETER [INCHES]})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	Initial	2.0	4.0	6.0	8.0		Sample				
pH	8.14	8.18	8.16	8.06	7.99		7.60				
SPEC. COND. (mS/cm)	0.655	0.628	0.630	0.661	0.632		0.785				
DO (mg/l)	3.11	5.03	4.50	5.89	4.58		5.16				
TEMPERATURE (°C)	11.7	10.3	10.8	12.7	11.6		14.0				
TURBIDITY (NTU)	1.51	4.38	5.64	49.49	43.43		4.06				
ORP (millivolts)	-155.6	-134.2	-115.8	-44.0	27.2		134.1				
TIME	11:15	11:20	11:24	11:30	11:38		12:00 on 5/22/21				

COMMENTS: 10:00 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 3/26/2021.
11:15 - Begin hand bailing well.
11:38 - Well dry after removing 8.0 gallons.
5/22/2021 11:55 - Return to well, depth to water = 5.16 feet.
12:00 - Collect sample for SVOCs and Metals.

WELL PURGING LOG

URS Corporation

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-07D
PROJECT NO.:	60411174		
STAFF:	Rob Murphy, Ann Marie Kropovitch		
DATE(S):	5/19/2021 & 5/20/2021		

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	<u>60.83</u>	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	<u>44.00</u>	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	<u>16.83</u>	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	<u>0.66</u>	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	<u>11.11</u>	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	<u></u>	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	<u>11.1</u>	8"	2.60

$V=0.0408 \times (\text{CASING DIAMETER [INCHES]})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	Initial	3.0	6.0	9.0	11.1		Sample				
pH	7.81	7.78	7.77	7.72	8.00		7.95				
SPEC. COND. (mS/cm)	0.655	0.631	0.677	0.796	0.831		0.923				
DO (mg/l)	3.72	3.82	5.44	5.53	7.23		8.57				
TEMPERATURE (°C)	13.5	12.5	12.7	12.7	13.2		15.9				
TURBIDITY (NTU)	3.32	4.68	6.51	9.87	20.30		51.92				
ORP (millivolts)	-51.7	-75.3	-147.7	-200.3	-189.3		-13.3				
TIME	10:15	10:27	10:40	10:55	11:08		11:35 on 5/20/21				

COMMENTS: 9:55 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 3/26/2021.
 10:15 - Begin hand bailing well.
 11:08 - Well dry after removing 11.1 gallons.
 5/20/2021 11:30 - return to well, depth to water = 59.30 feet.
 11:35 - Collect sample for SVOCs and Metals.

Strong Sulfur Odor

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-08SR

Date: 5/20/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.42'	Depth to Well Bottom:	13.02'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.7	Estimated Purge Volume (liters):	9.5
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Sample ID:	GW-8SR	Sample Time:	13:41	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-08D

Date: 5/20/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.99'	Depth to Well Bottom:	36.54'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	75.5	Estimated Purge Volume (liters):	52.8
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Sample ID:	GW-8D	Sample Time:	14:57	QA/QC:	MS/MSD
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-26D

Date: 5/20/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.81'	Depth to Well Bottom:	40.70'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	83.7	Estimated Purge Volume (liters):	53.4
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Sample ID:	GW-26D	Sample Time:	16:30	QA/QC:	Field Dup. FD-052021
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Sample Parameters: VOCs, SVOCs, and TAL Metals
Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-28S

Date: 5/21/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	9.42'	Depth to Well Bottom:	15.52'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	3.8	Estimated Purge Volume (liters):	4.1
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Sample ID:	GW-28S	Sample Time:	8:13	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-29S

Date: 5/21/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	9.07'	Depth to Well Bottom:	20.04'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.8	Estimated Purge Volume (liters):	7.6
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Sample ID:	GW-29S	Sample Time:	9:30	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Orange particulates at start of purge.

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-30S

Date: 5/21/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	7.83'	Depth to Well Bottom:	17.97'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.3	Estimated Purge Volume (liters):	8.7
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Sample ID:	GW-30S	Sample Time:	10:23	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-31S

Date: 5/21/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.06'	Depth to Well Bottom:	9.57'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	3.4	Estimated Purge Volume (liters):	8.3
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Sample ID:	GW-31S	Sample Time:	11:30	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-32S

Date: 5/21/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.74'	Depth to Well Bottom:	9.93'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	3.8	Estimated Purge Volume (liters):	8.4
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Sample ID:	GW-32S	Sample Time:	12:35	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-33S

Date: 5/21/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.61'	Depth to Well Bottom:	8.21'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	1.6	Estimated Purge Volume (liters):	5.3
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Sample ID:	GW-33S	Sample Time:	13:36	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-34S

Date: 5/21/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.26'	Depth to Well Bottom:	10.01'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.2	Estimated Purge Volume (liters):	7.6
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Sample ID:	GW-34S	Sample Time:	8:35	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-35S

Date: 5/20/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.09'	Depth to Well Bottom:	7.46'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	2.1	Estimated Purge Volume (liters):	7.4
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Sample ID:	GW-35S	Sample Time:	17:24	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date of Sampling: May 19, 2021

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-07D	GW-07D	50.5	50.5	9:55	Groundwater	VOCs	Not Applicable
GW-07S	GW-07S	19.5	36.4	10:00	Groundwater		Not Applicable
GW-01D	GW-01D	89.8	53.3	13:38	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-01S	GW-01S	6.4	7.0	14:25	Groundwater		Not Applicable
GW-04S	GW-04S	7.2	15.1	15:02,16:55	Groundwater		Not Applicable
GW-04D	GW-04D	81.1	13.5	16:39	Groundwater		Not Applicable
							Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization with the exception of wells GW-04S, GW-07D, and GW-07S that were sampled for VOCs using passive diffusion bags (PDBs).
GW-04S, GW-07D, and GW-07S were then purged dry. Remaining parameters were collected after recovery at GW-04S.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date of Sampling: May 20, 2021

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-34S	GW-34S	4.2	7.6	8:35	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-03D	GW-03D	83.3	51.0	10:11	Groundwater		Not Applicable
GW-03S	GW-03S	6.2	6.8	11:04	Groundwater		Not Applicable
GW-07D	GW-07D	50.5	50.5	11:35	Groundwater	SVOCs/ Metals	Not Applicable
GW-07S	GW-07S	19.5	36.4	12:00	Groundwater		Not Applicable
GW-08SR	GW-08SR	4.7	9.5	13:41	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-08D	GW-08D	75.5	52.8	14:57	Groundwater		Not Applicable

Additional Comments: GW-07D and GW-07S were sampled for SVOCs and Metals after recharging overnight.
All other wells were purged using low flow methods until parameter stabilization.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date of Sampling: May 20, 2021

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-08D	GW-08D	75.5	52.8	14:57	Matrix Spike	VOCs/SVOCs/ TAL Metals	Not Applicable
GW-08D	GW-08D	75.5	52.8	14:57	Spike Duplicate		Not Applicable
GW-26D	GW-26D	83.7	53.4	16:30	Groundwater		Not Applicable
FD-052021	GW-26D	83.7	53.4	16:30	Duplicate		Not Applicable
GW-35S	GW-35S	2.1	7.4	17:24	Groundwater		Not Applicable
TB-051921+052021	-	-	-	-	Trip Blank	VOCs	Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date of Sampling: May 21, 2021

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-28S	GW-28S	3.8	4.1	8:13	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-29S	GW-29S	6.8	7.6	9:30	Groundwater		Not Applicable
GW-30S	GW-30S	6.3	8.7	10:23	Groundwater		Not Applicable
GW-31S	GW-31S	3.4	8.3	11:30	Groundwater		Not Applicable
GW-32S	GW-32S	3.8	8.4	12:35	Groundwater		Not Applicable
GW-33S	GW-33S	1.6	5.3	13:36	Groundwater		Not Applicable
TRIP BLANK	-	-	-	-	Trip Blank	VOCs	Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization.

APPENDIX E

GROUNDWATER TREND ANALYSIS

FIGURE E-1
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-01D

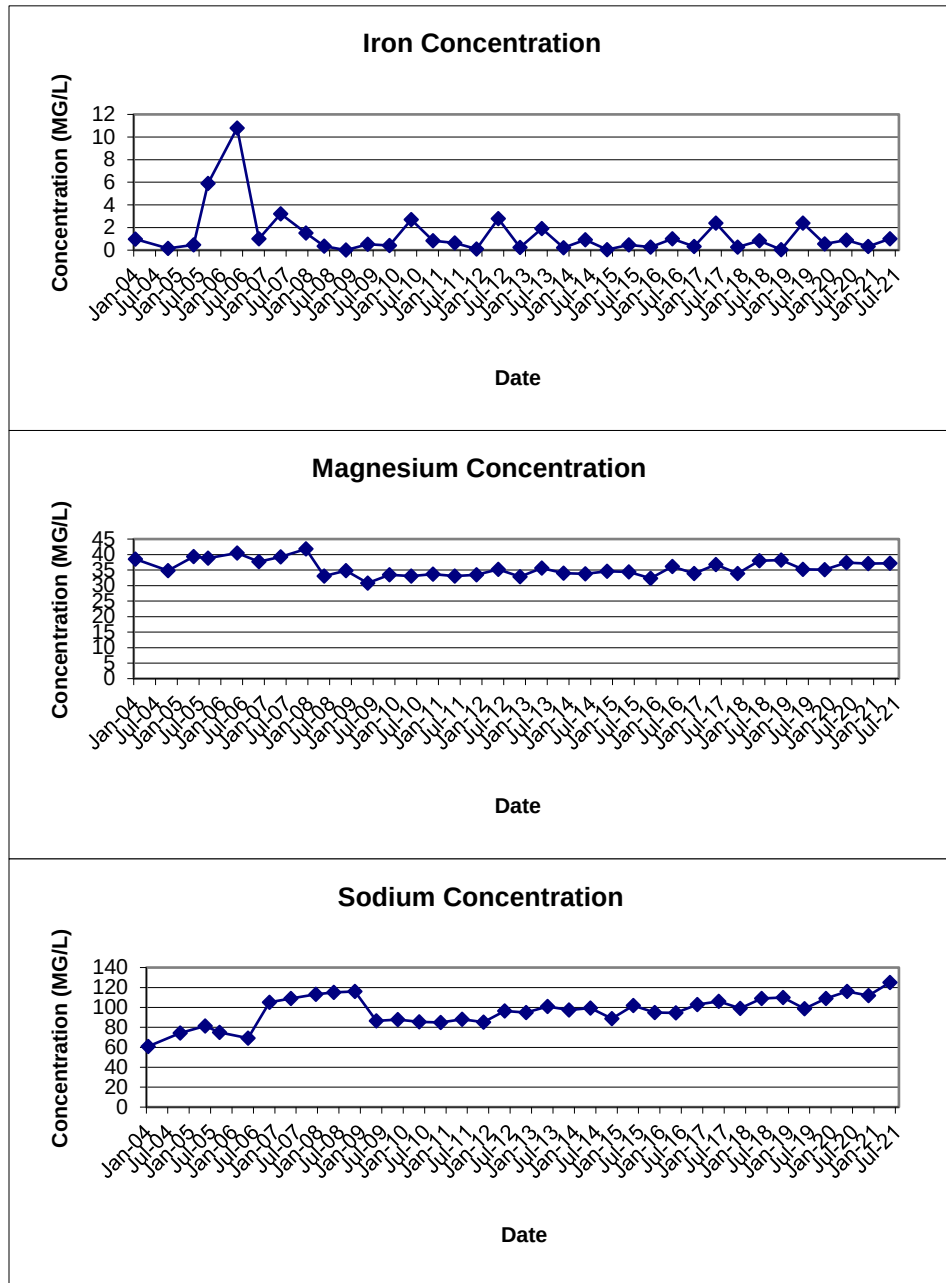


FIGURE E-2
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-01S

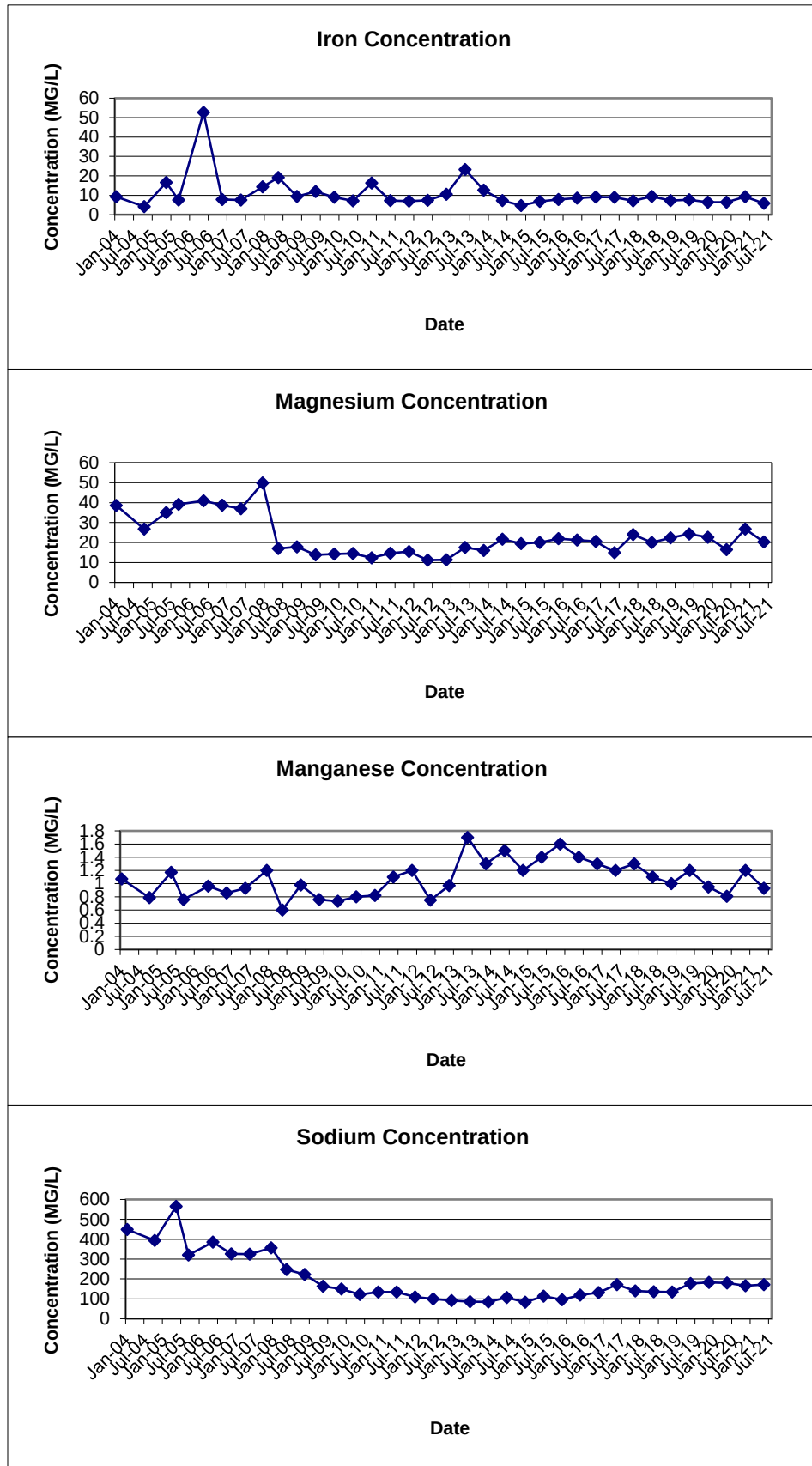


FIGURE E-3
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-03D

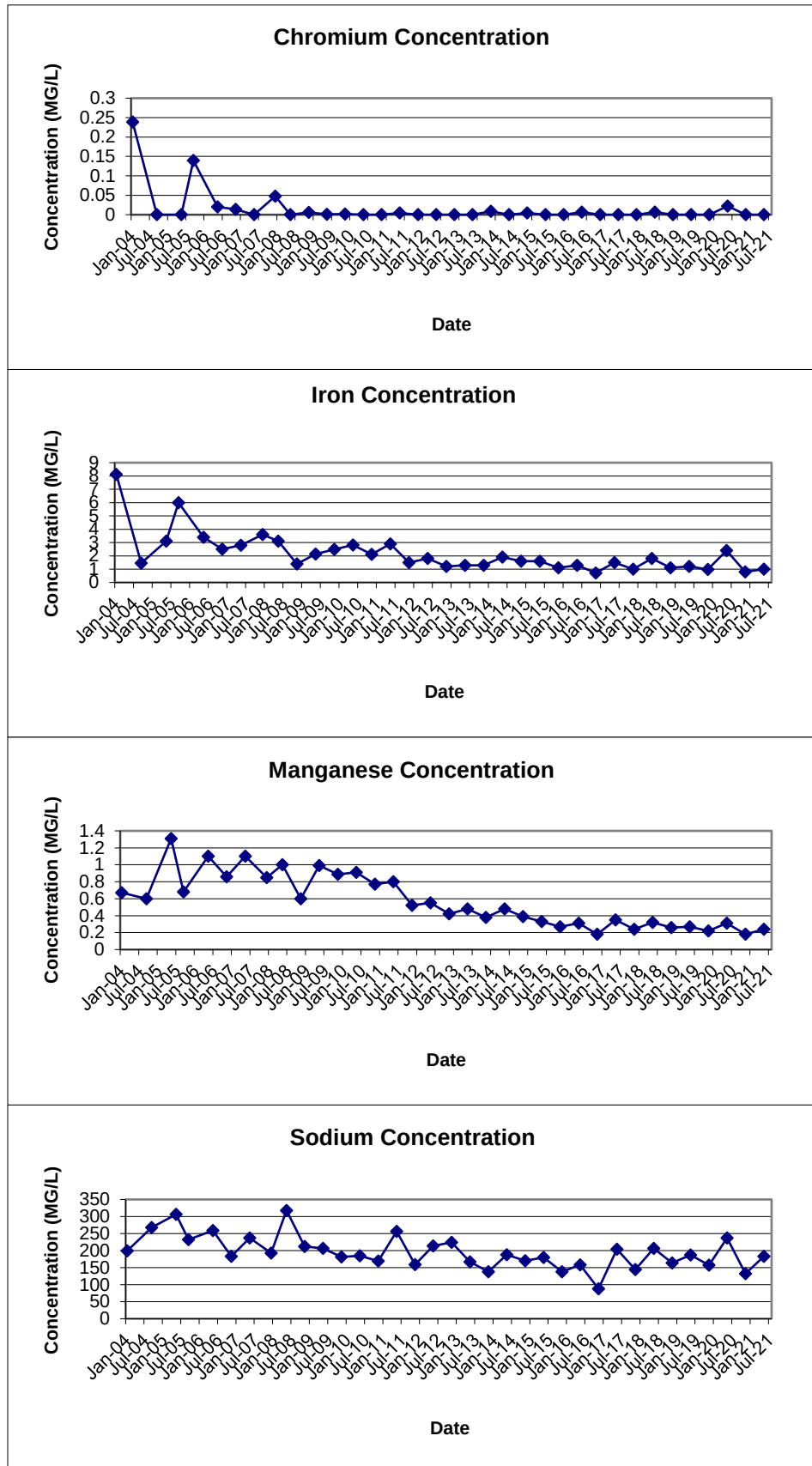
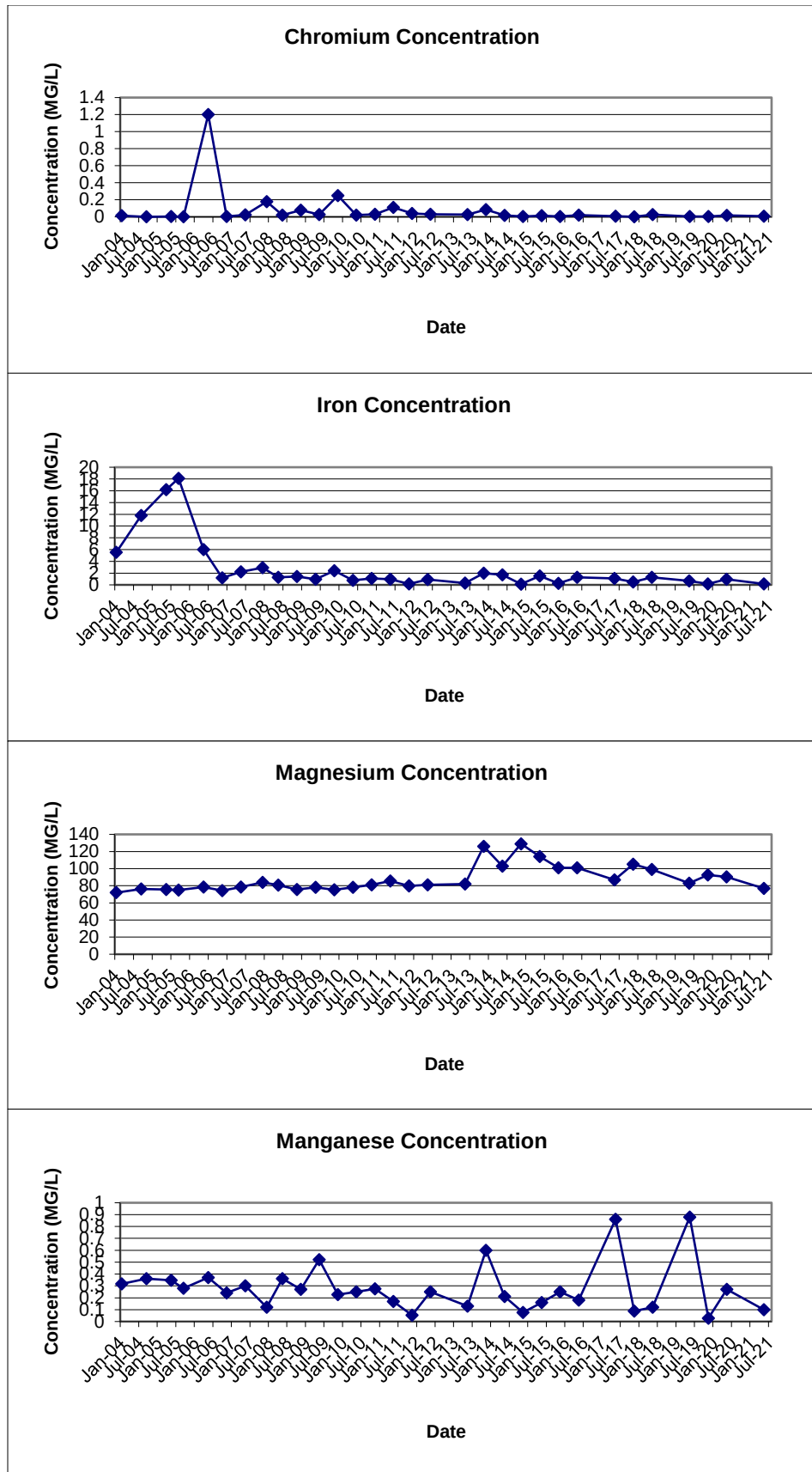
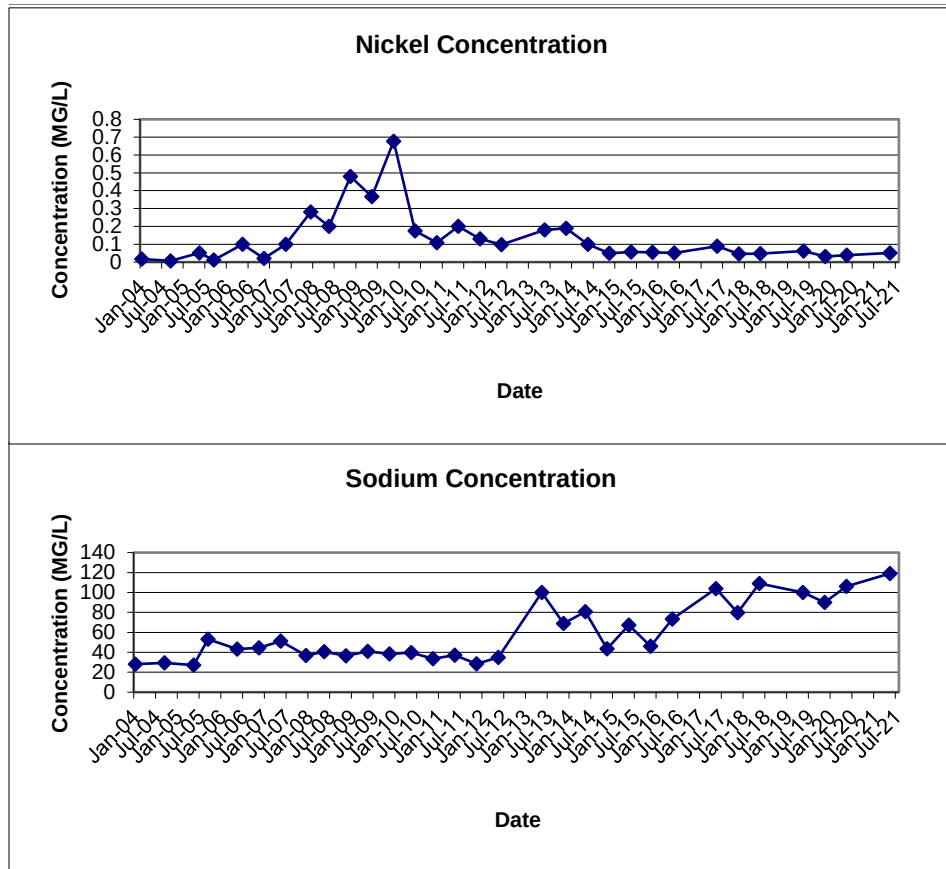


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-03S



Well was dry and was not sampled in November 2016, 2018, and 2020

FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-03S



Well was dry and was not sampled in November 2016, 2018, and 2020

FIGURE E-5
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-04D

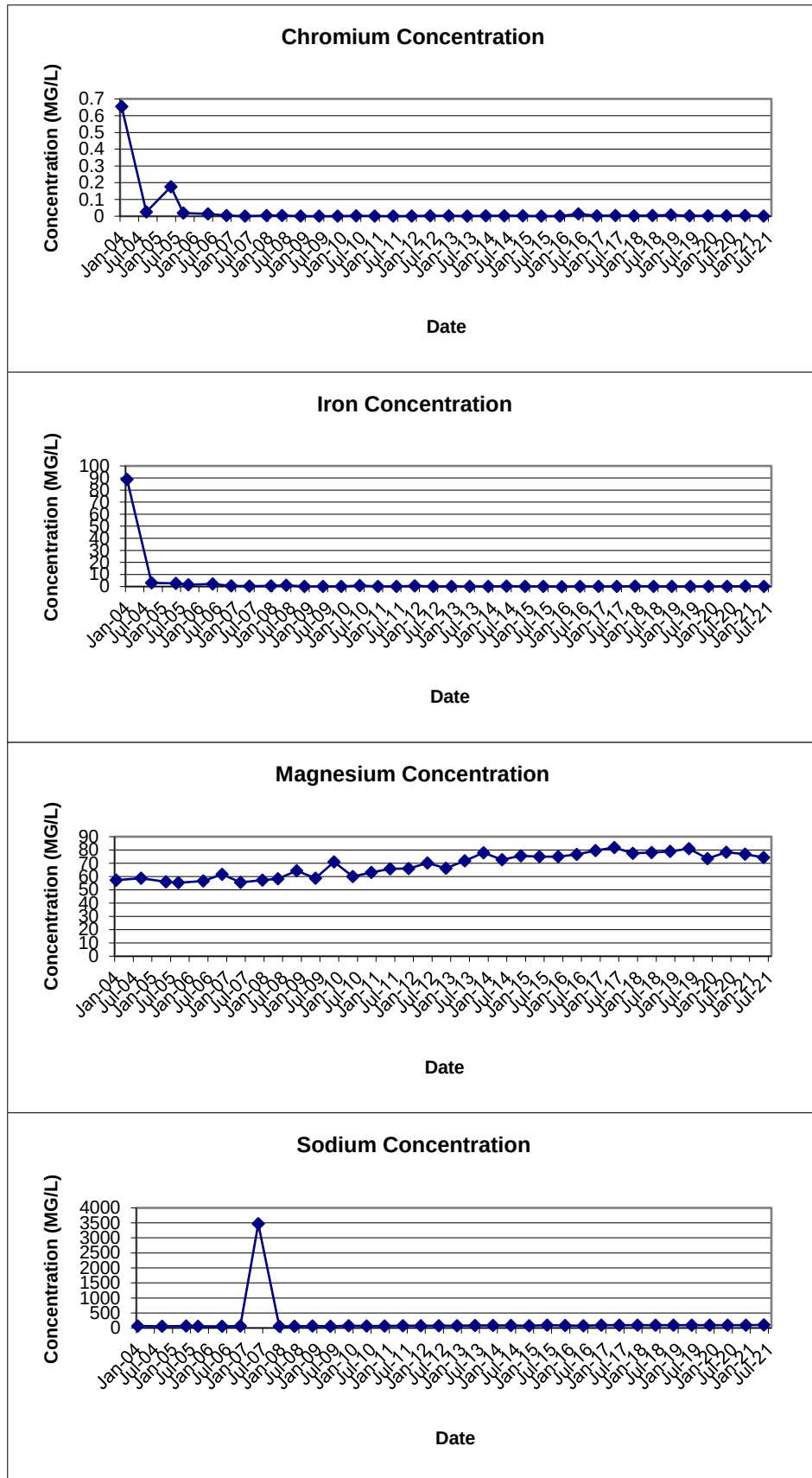


FIGURE E-6
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-04S

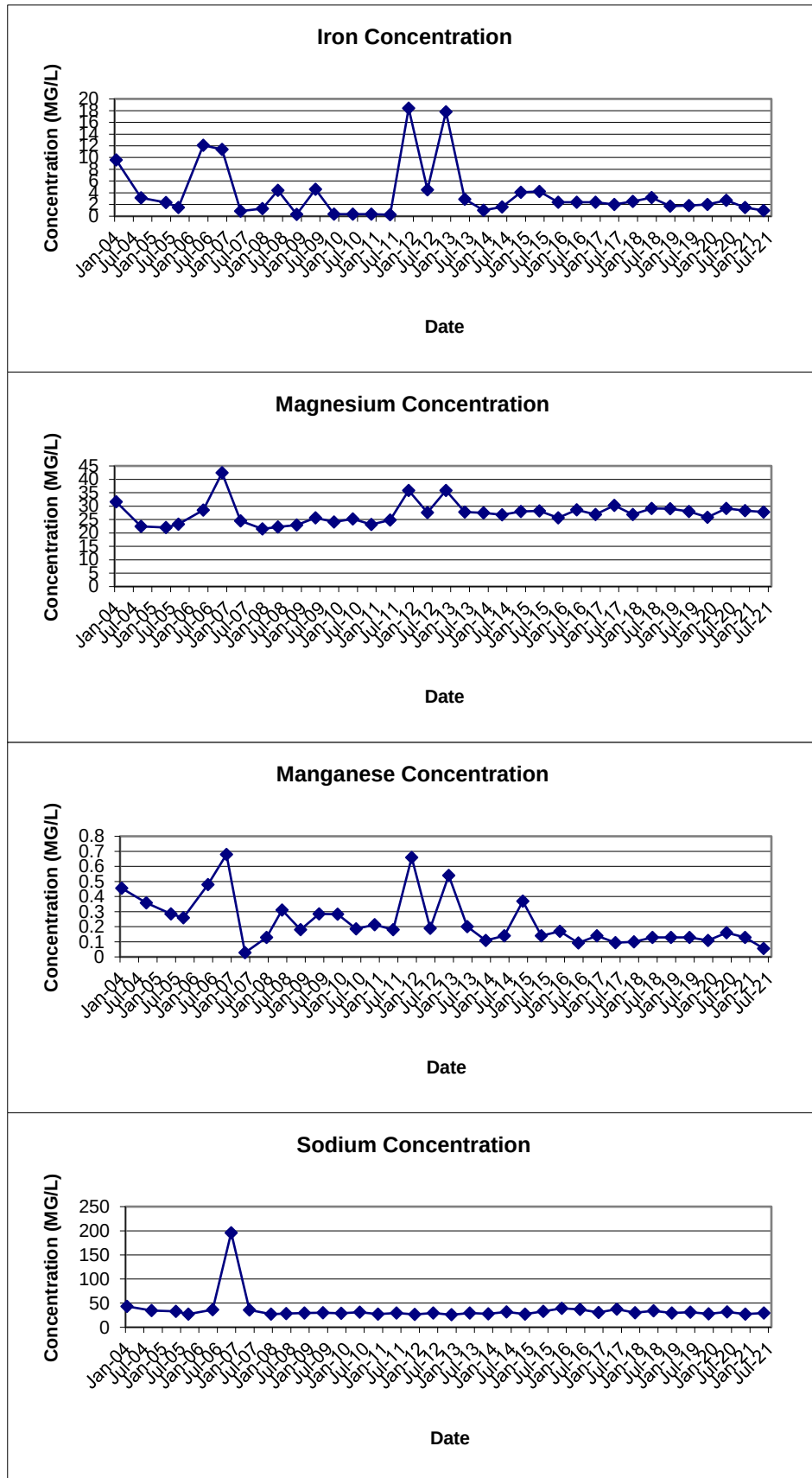


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07D

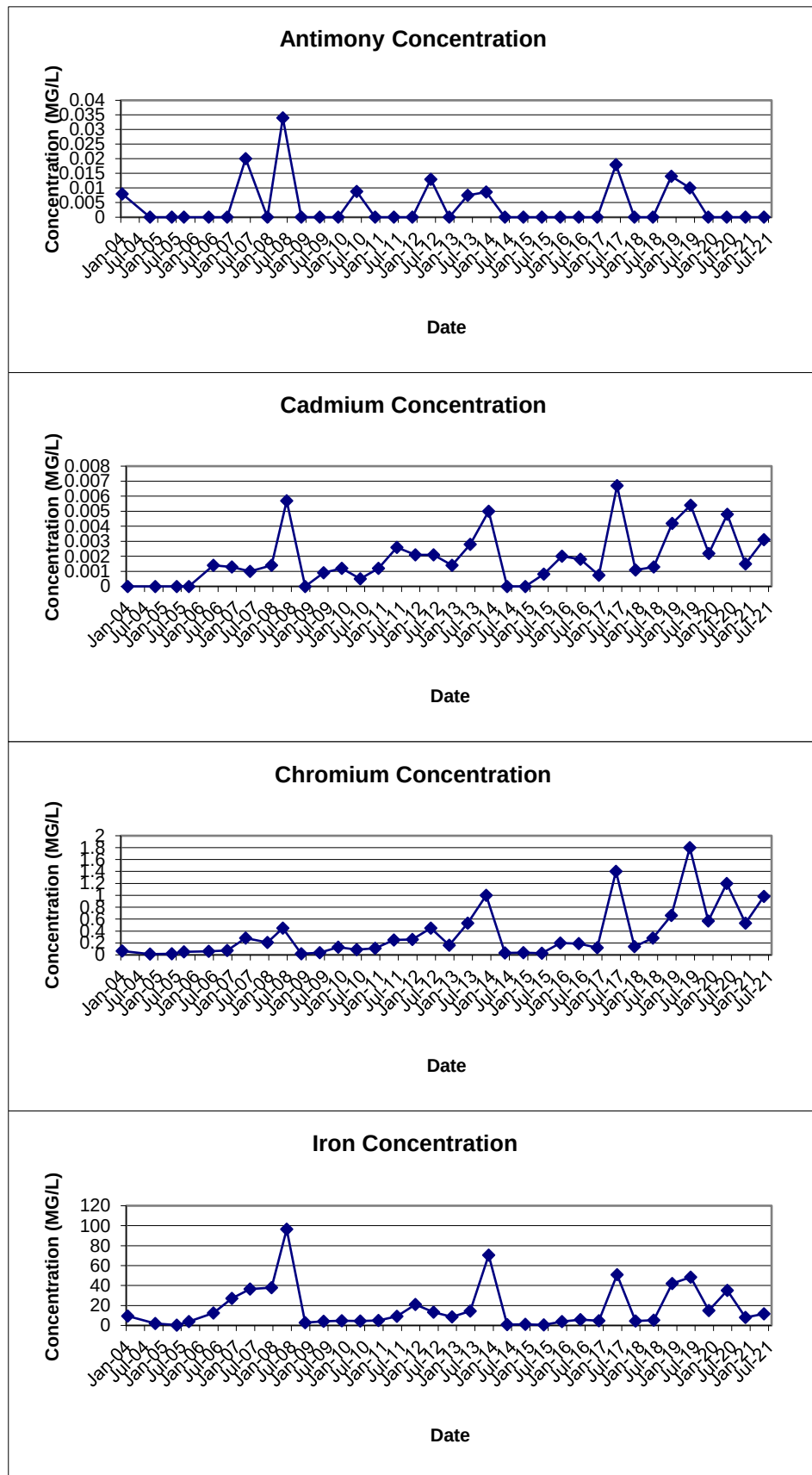


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07D

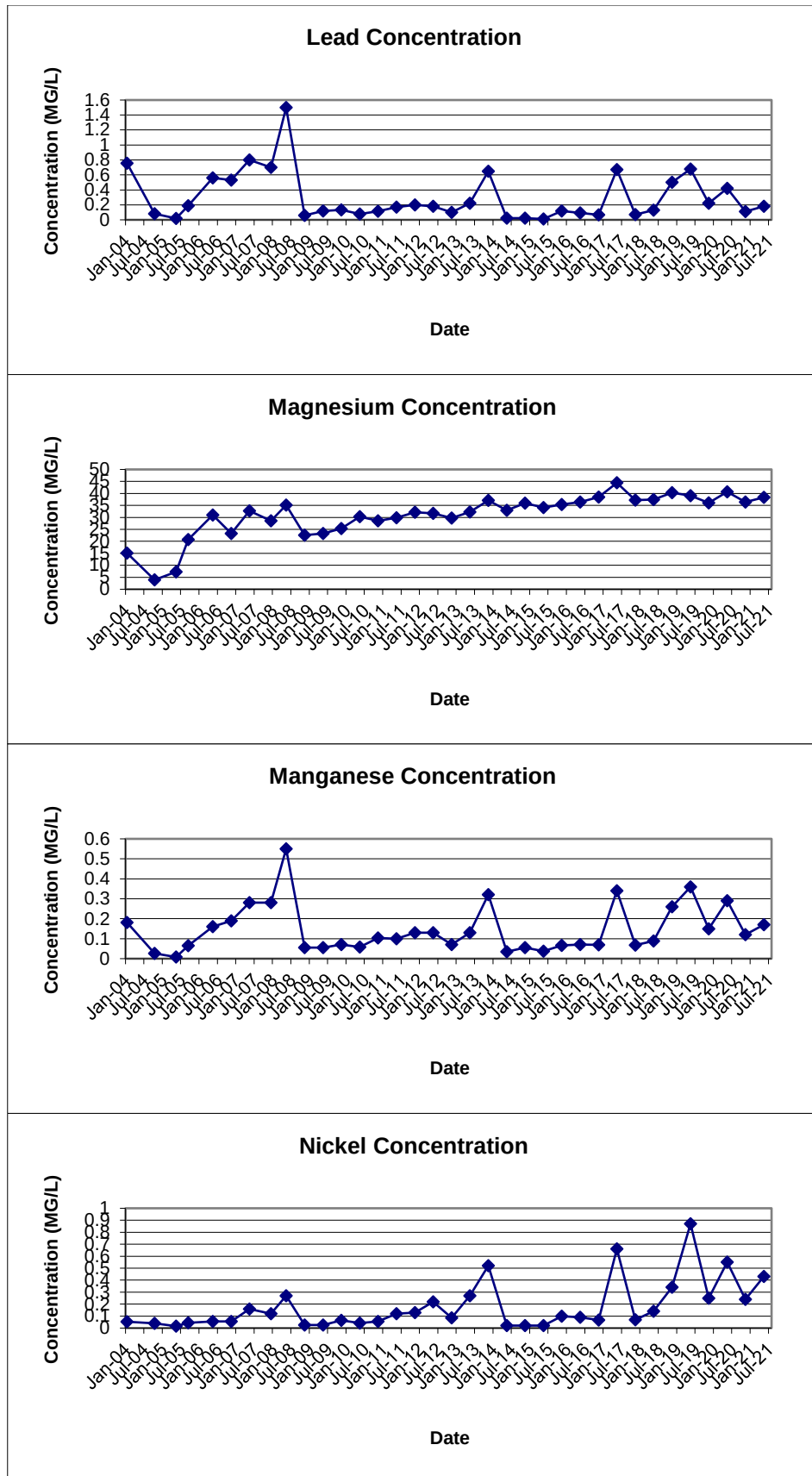


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07D

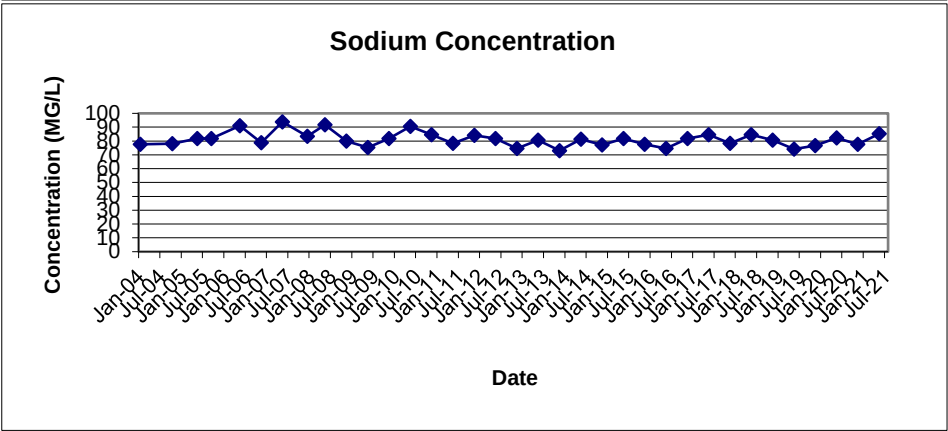


FIGURE E-8
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07S

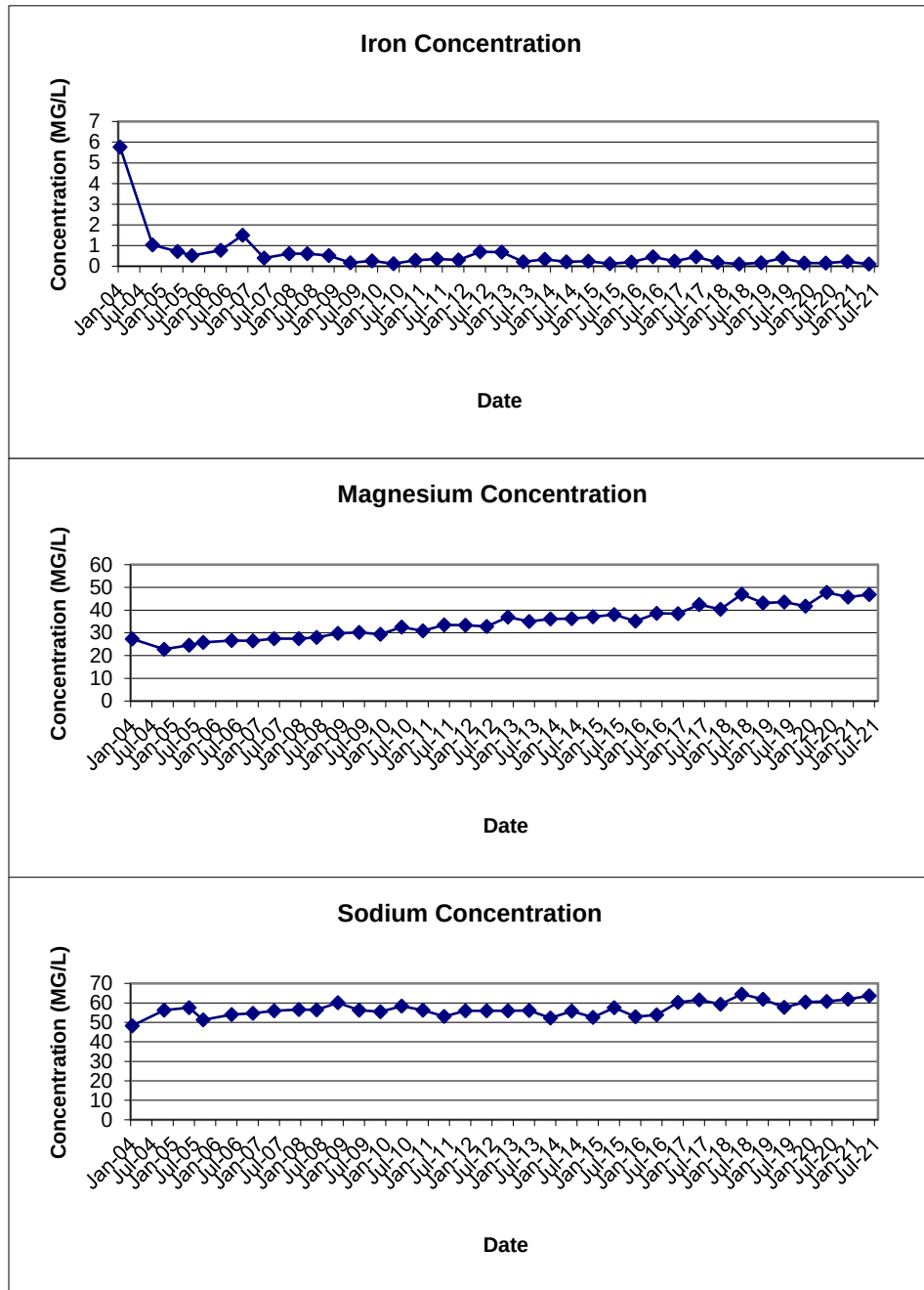


FIGURE E-9
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-08D

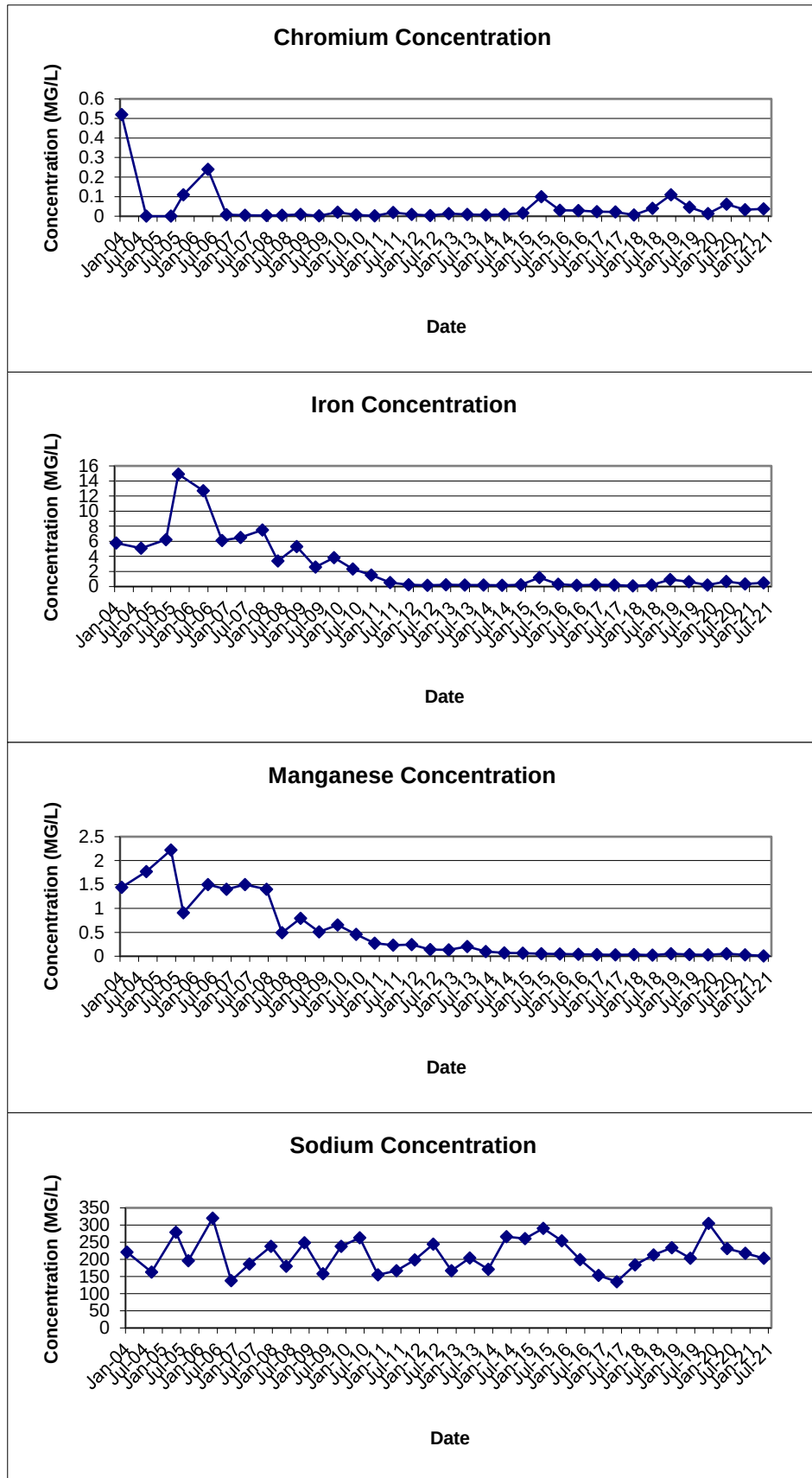


FIGURE E-10
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-08SR

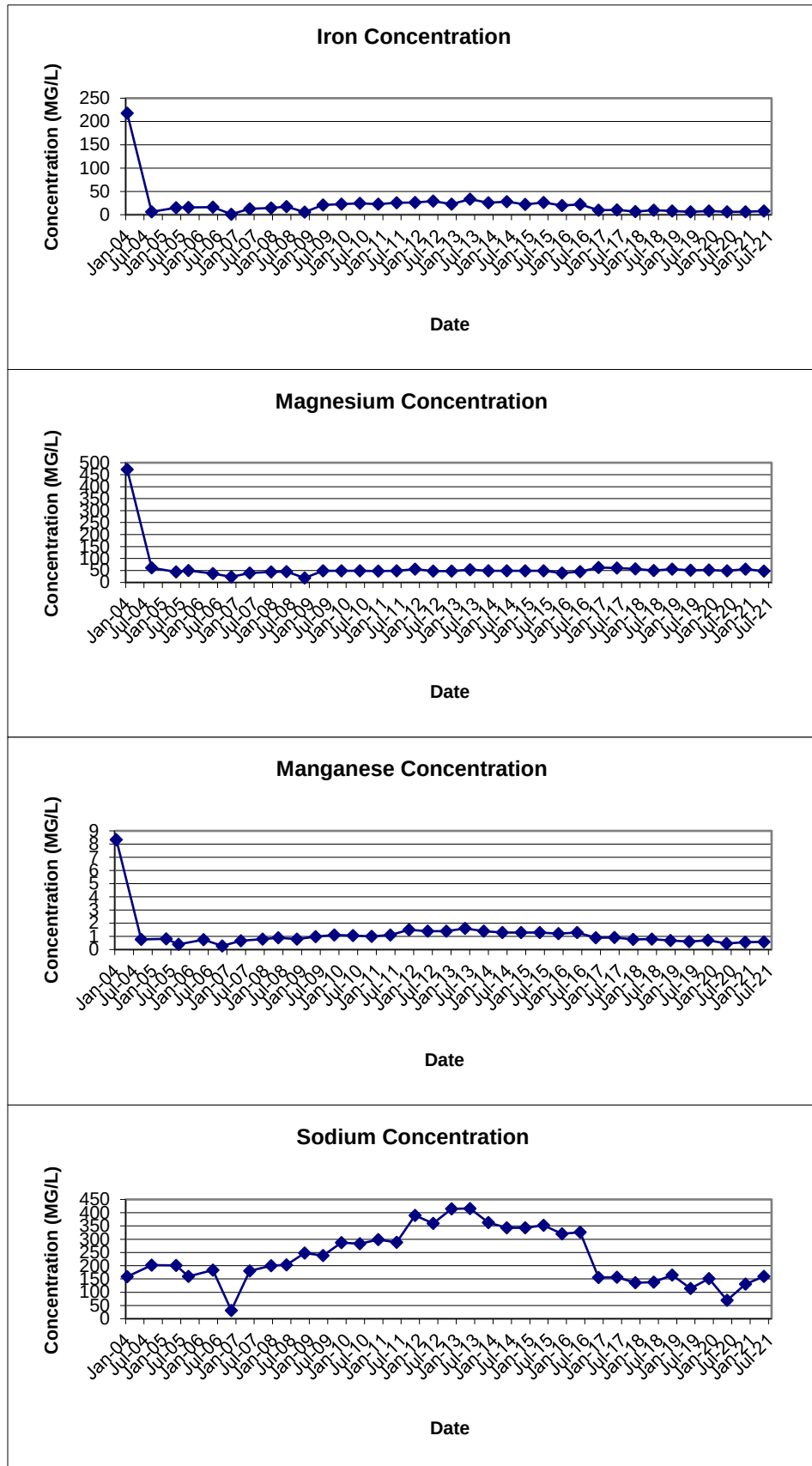


FIGURE E-11
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-26D

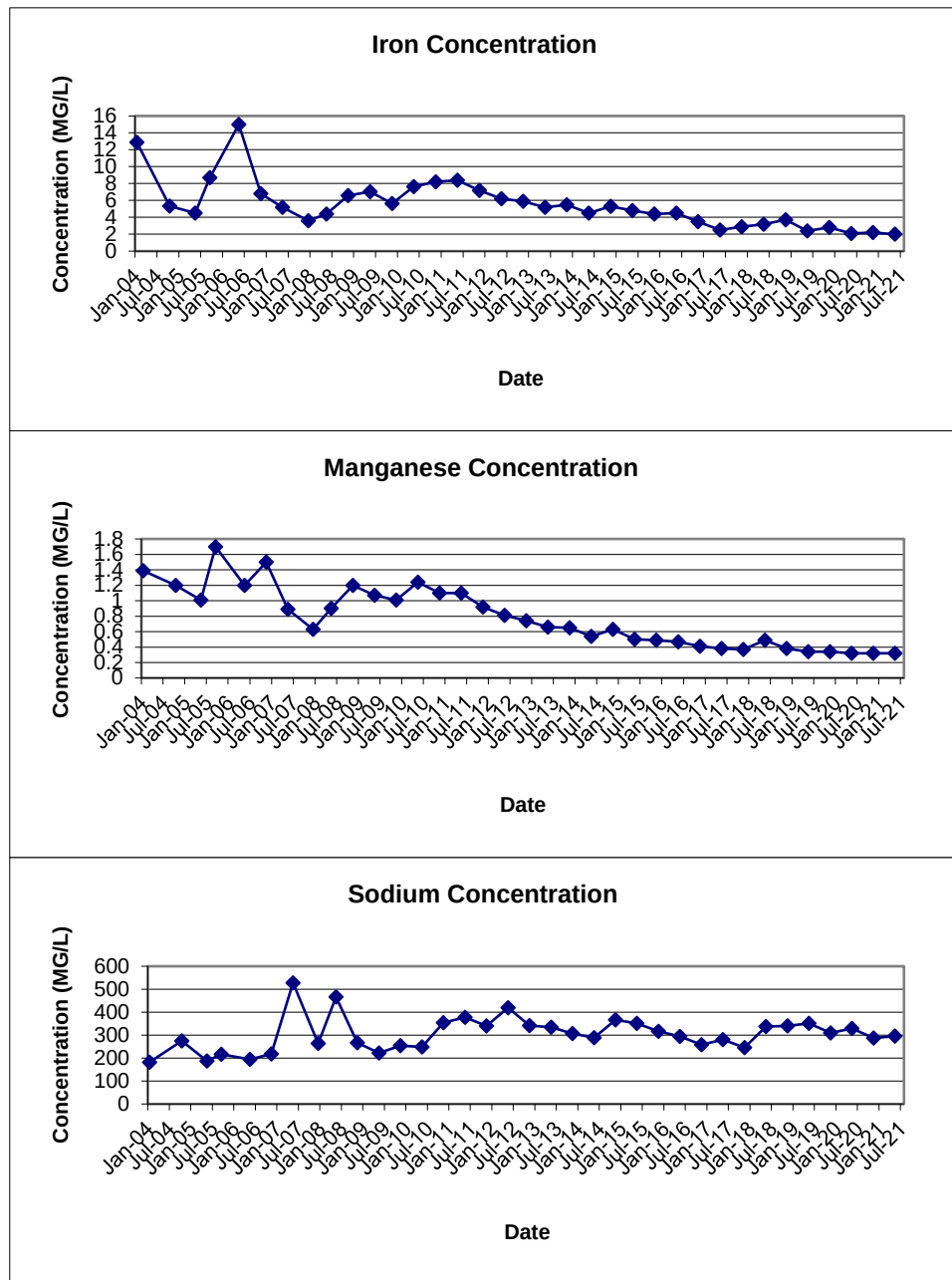


FIGURE E-12
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-28S

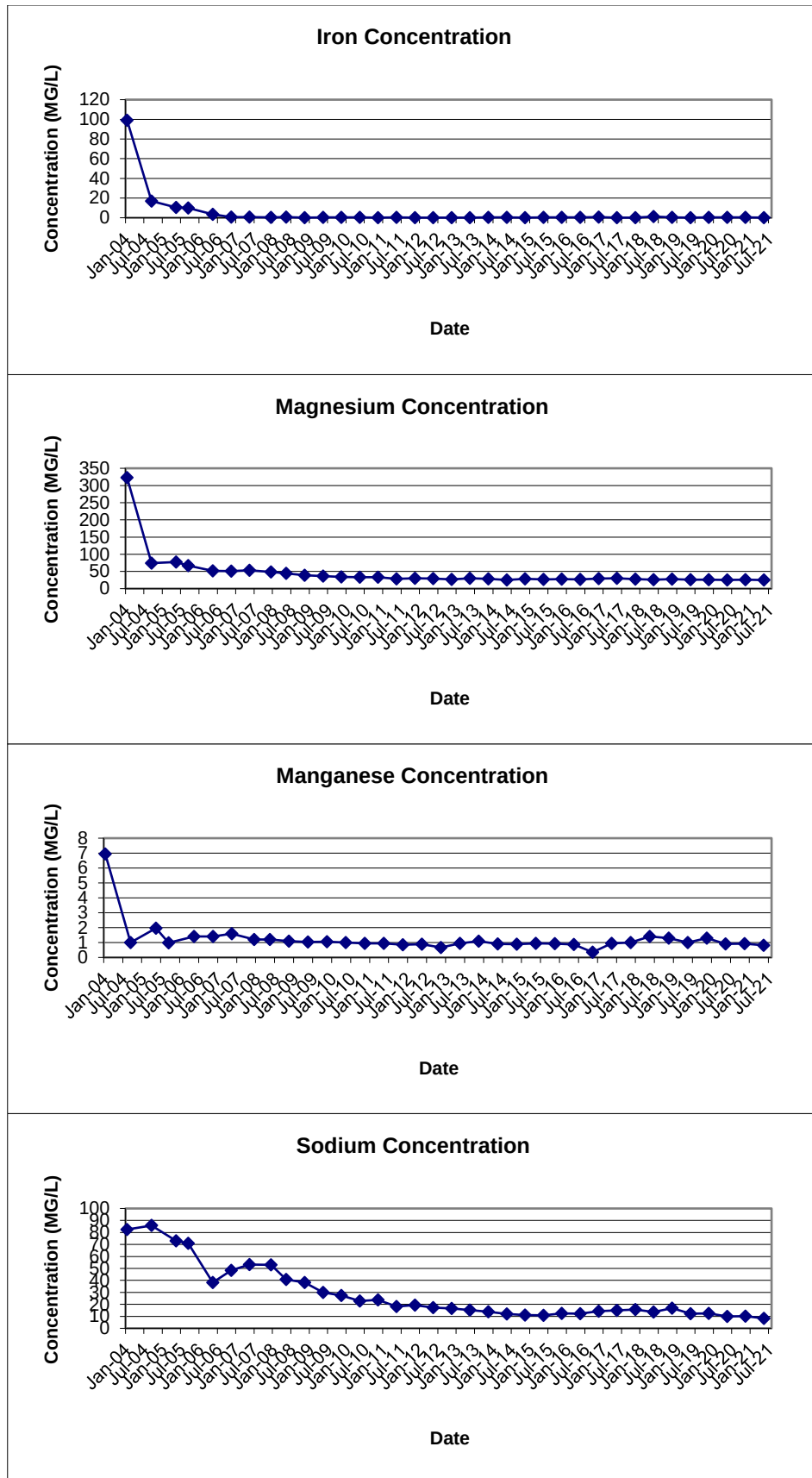


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

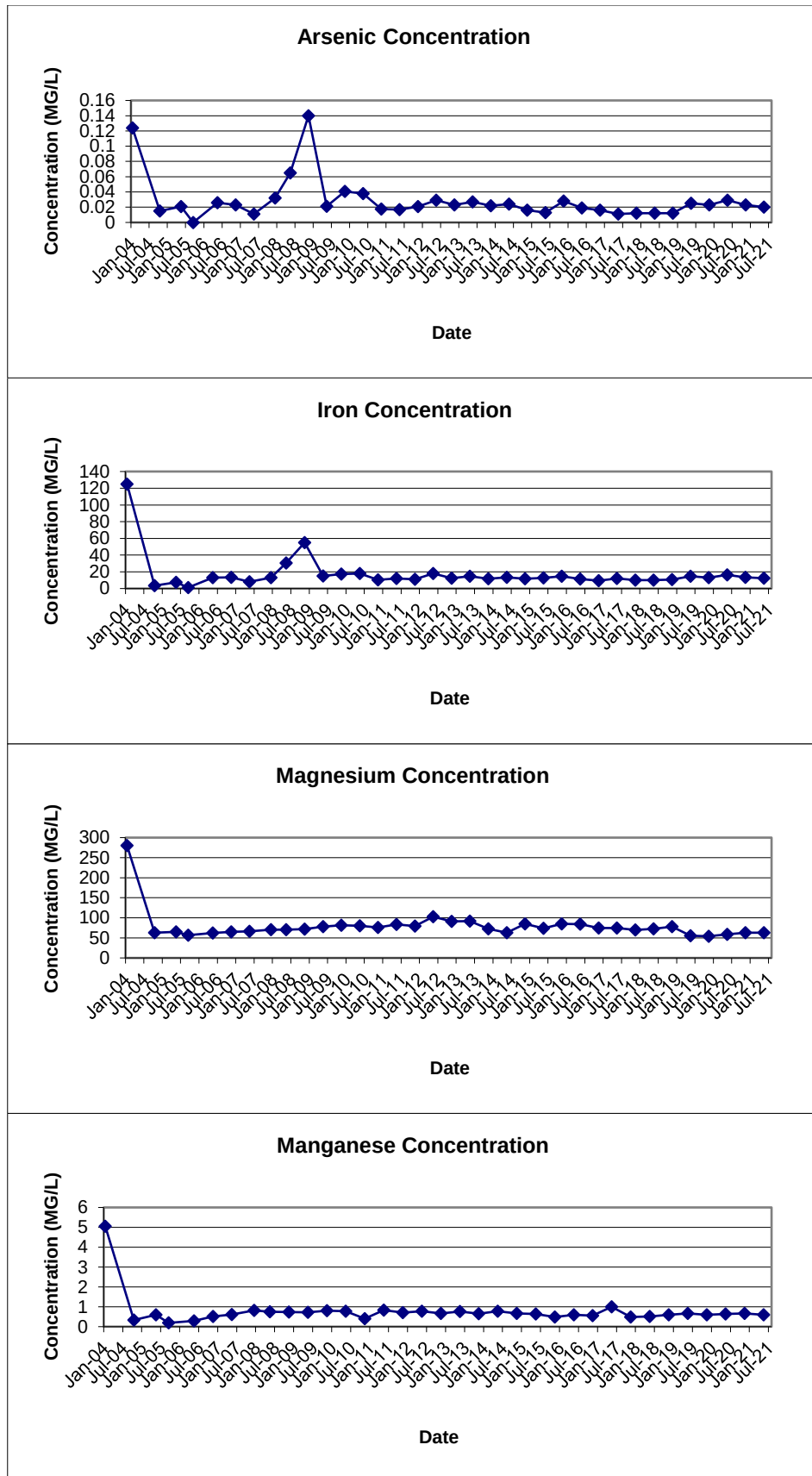


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

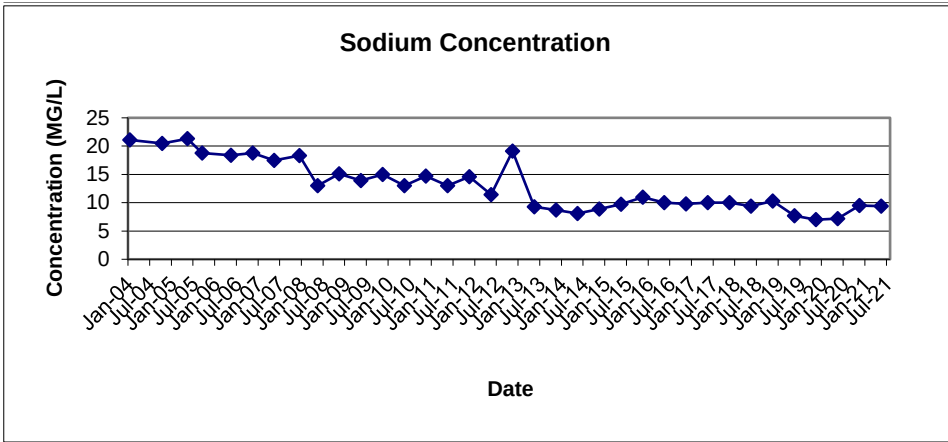


FIGURE E-14
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-30S

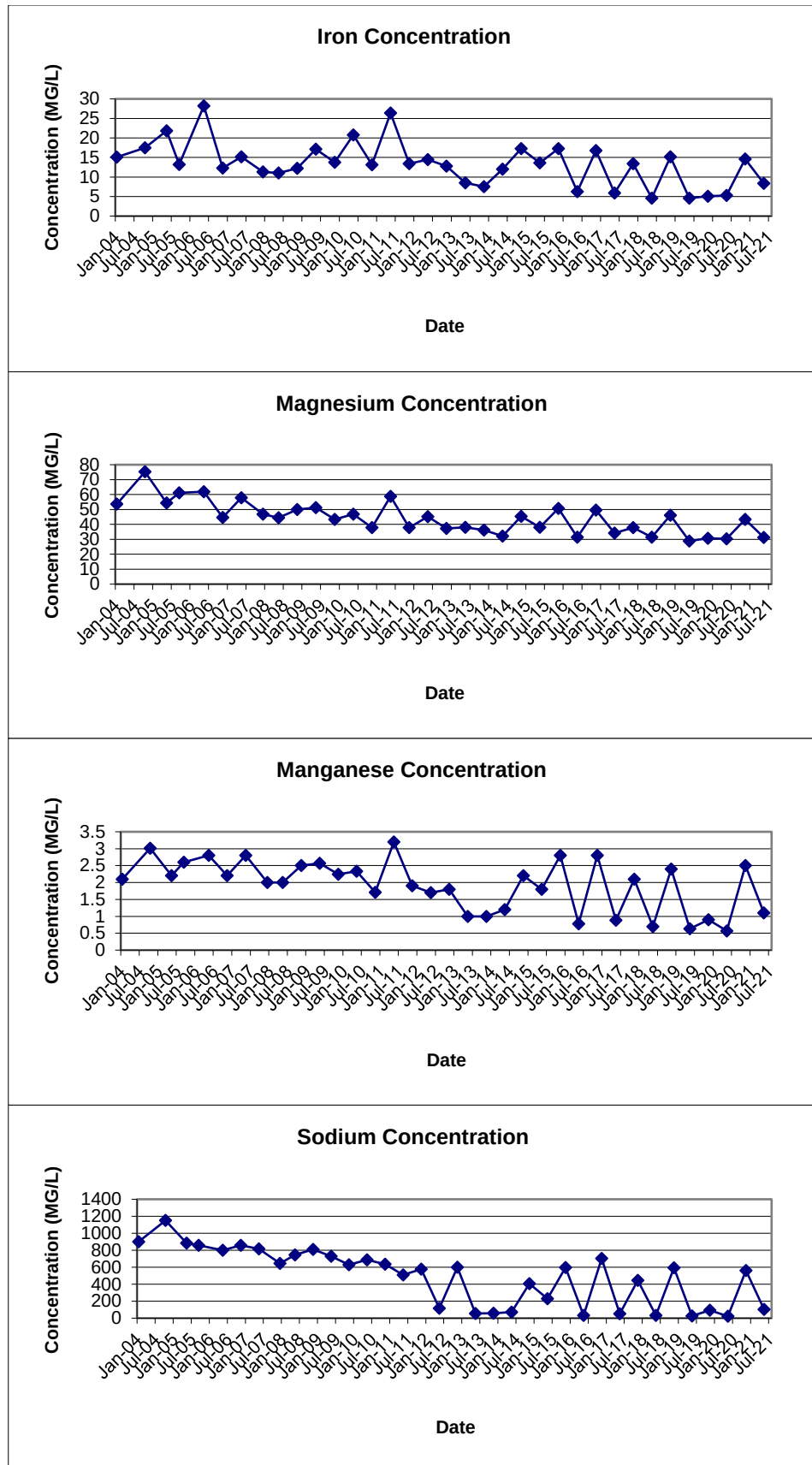


FIGURE E-15
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-31S

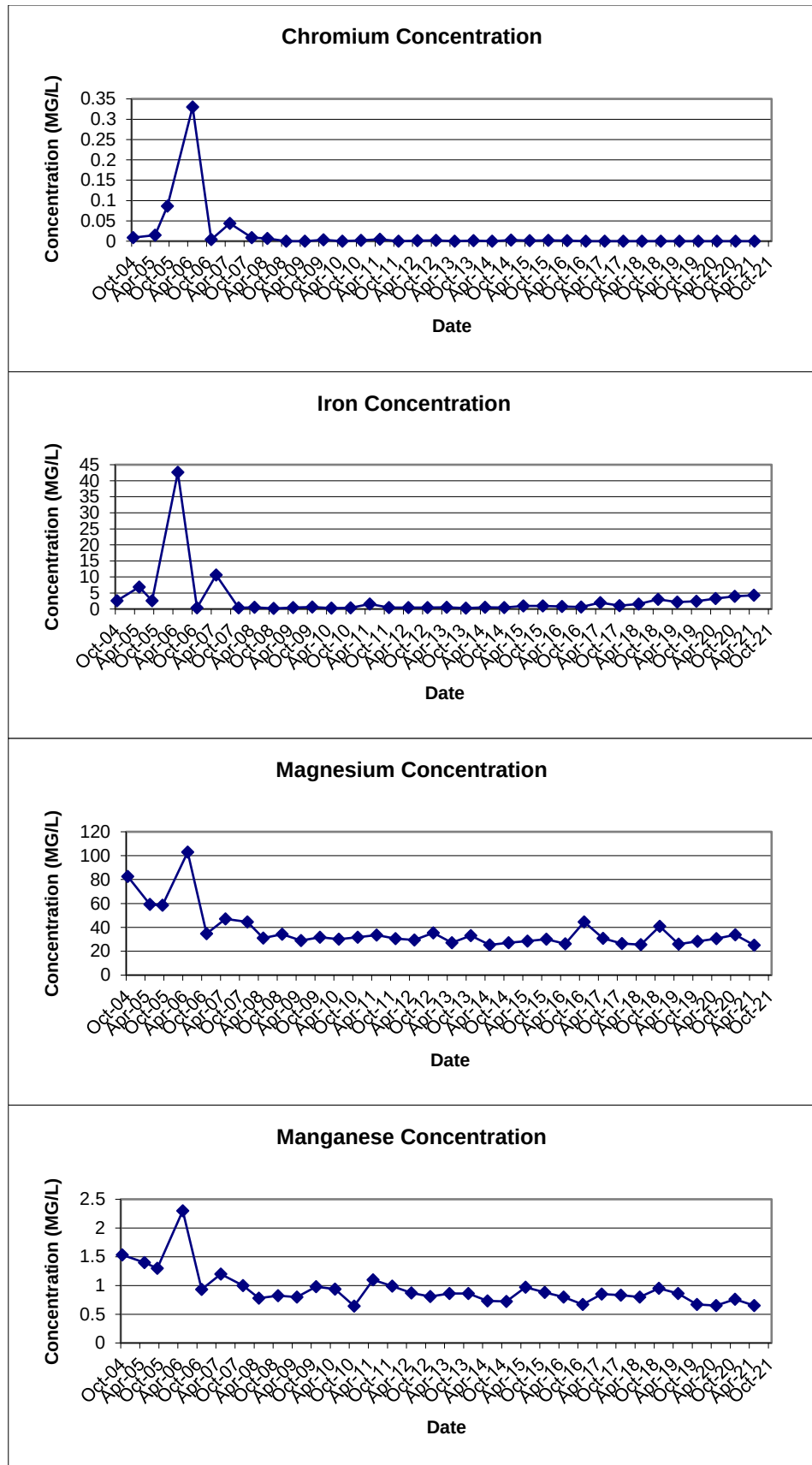


FIGURE E-16
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-32S

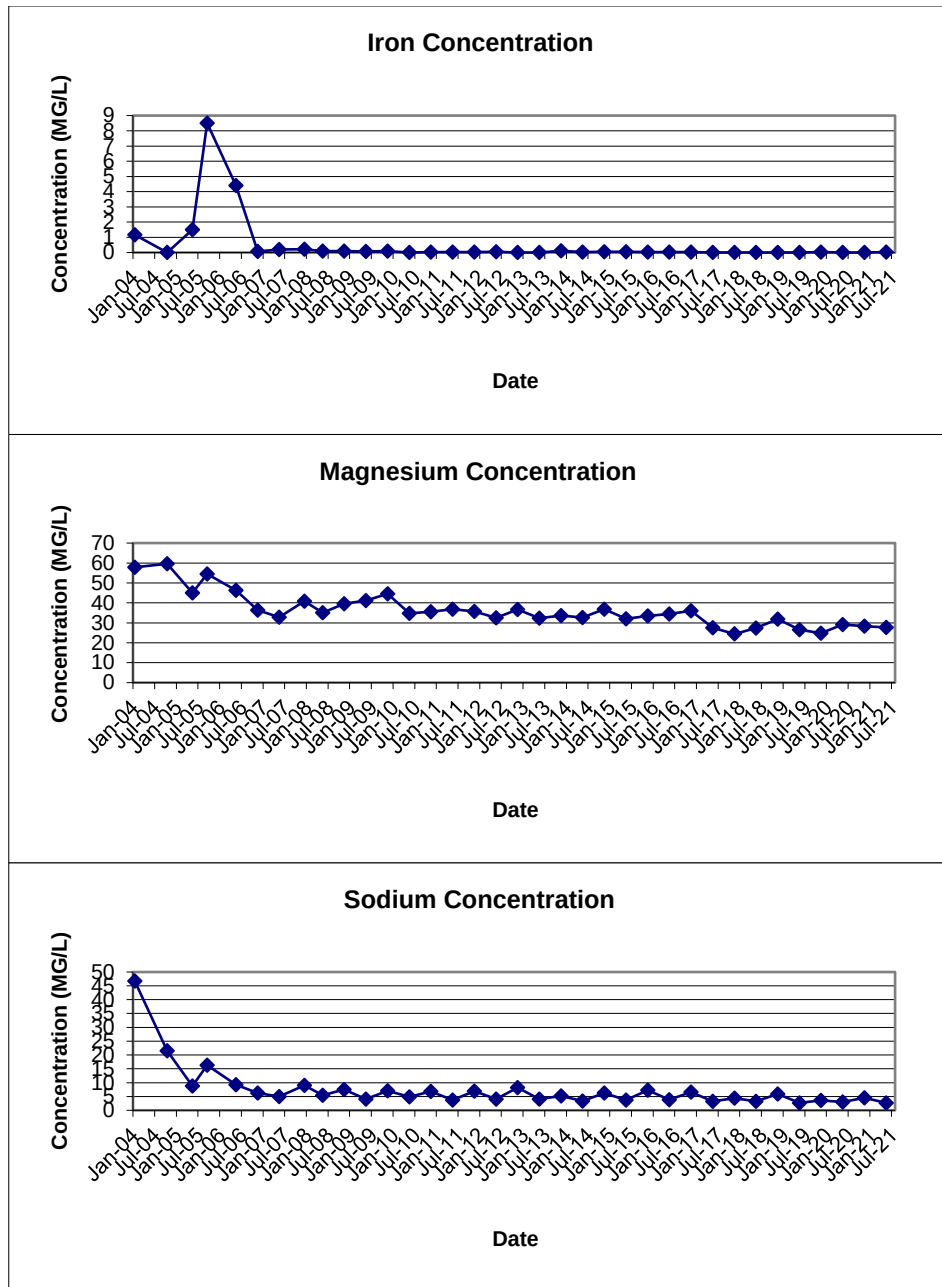


FIGURE E-17
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-33S

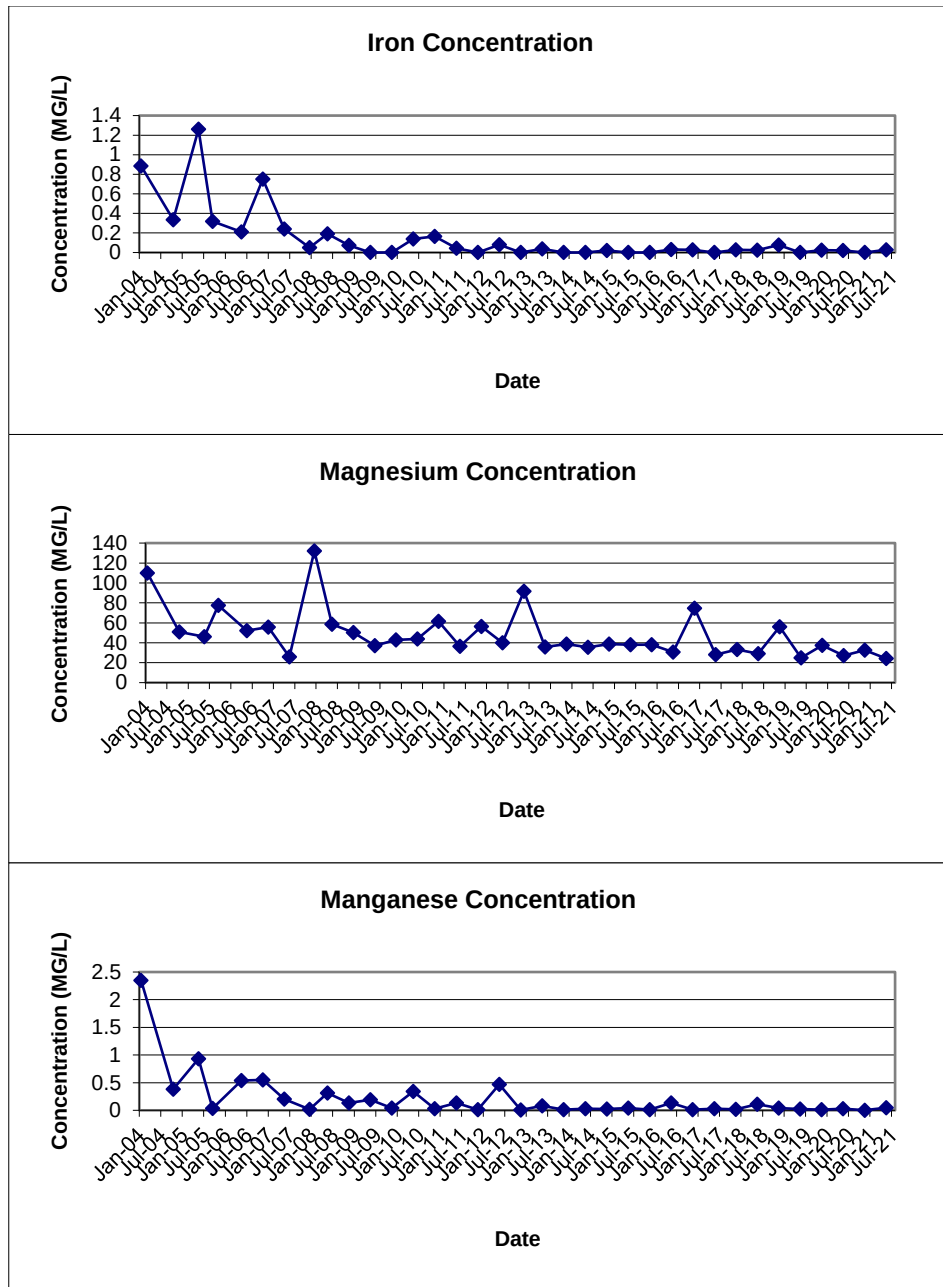


FIGURE E-18
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-34S

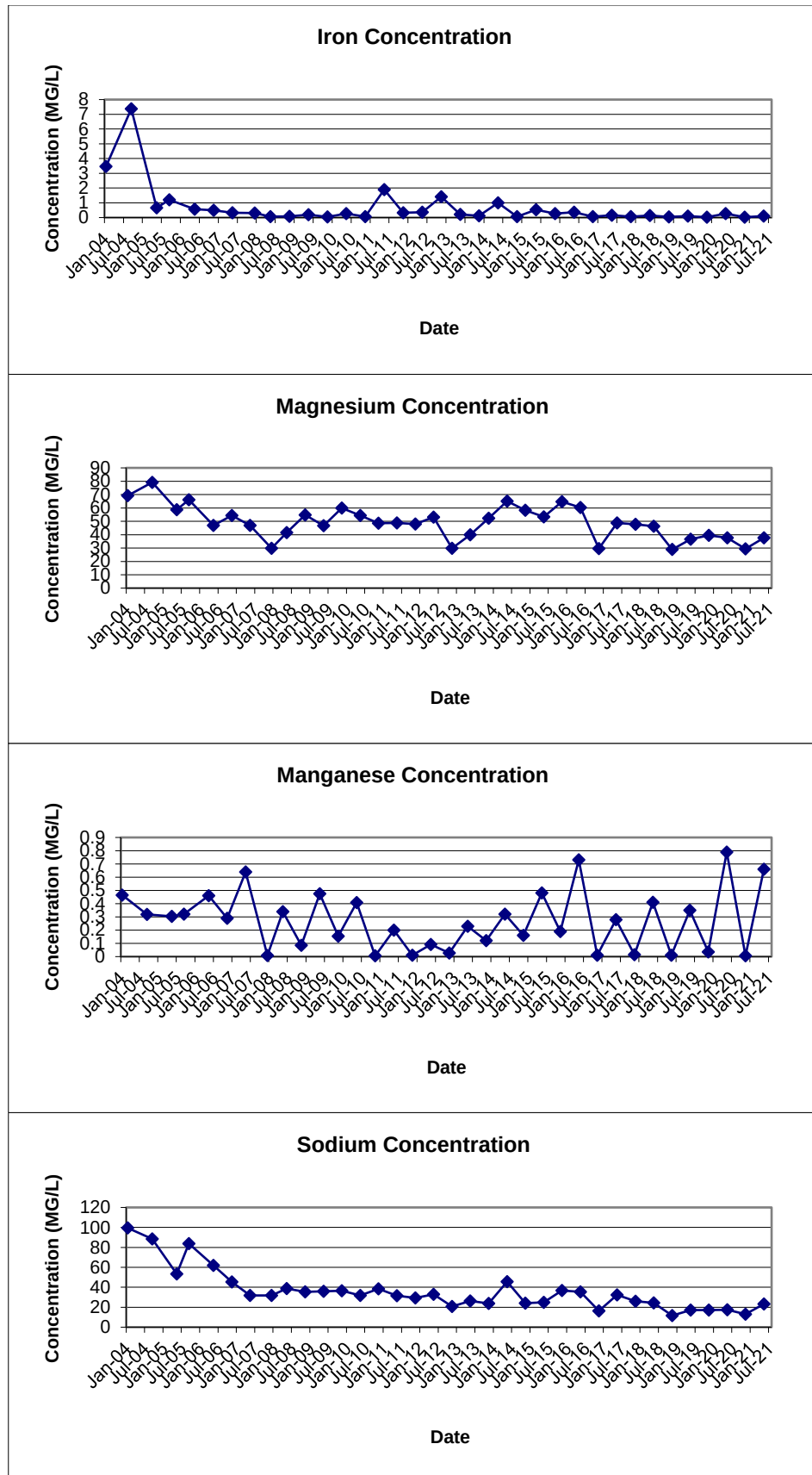
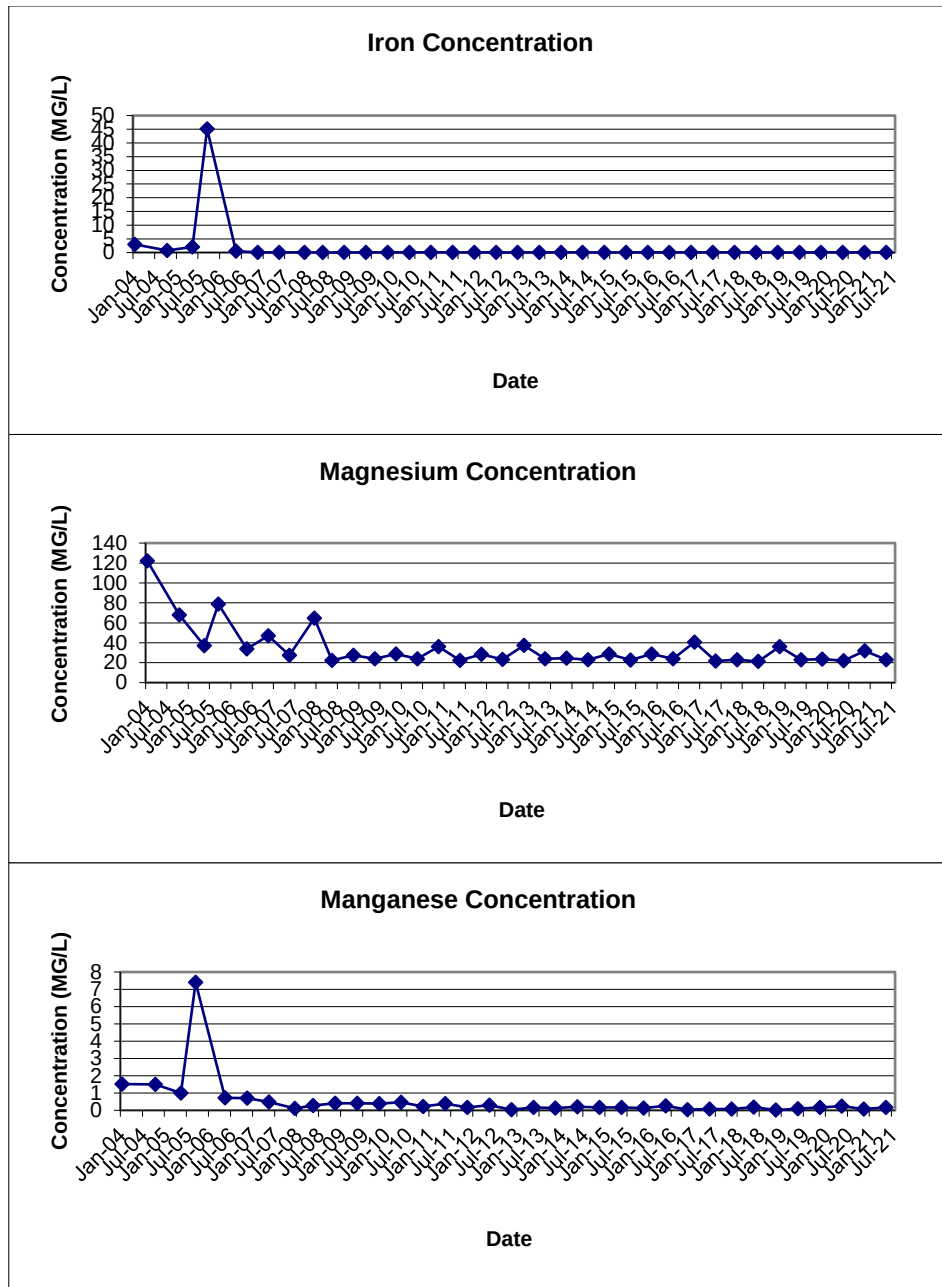


FIGURE E-19
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-35S



APPENDIX F

BSA PERMIT 19-04-CH016

**AUTHORIZATION TO DISCHARGE UNDER THE BUFFALO
POLLUTANT DISCHARGE ELIMINATION SYSTEM**

PERMIT NO. 19-04-CH016

USEPA Category 40 CFR Part 403

In accordance with the provisions of the Federal Water Pollution Control Act, as amended, and the
Sewer Regulations of the Buffalo Sewer Authority, authorization is hereby granted to:

THE TOWN OF CHEEKTOWAGA

to discharge wastewater from a facility located at:

PFOHL BROTHERS LANDFILL REMEDIATION SITE

1000 AERO DRIVE

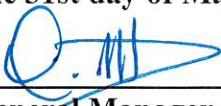
CHEEKTOWAGA, NEW YORK 14225

The wastewater permitted herein shall be discharged to the Town of Cheektowaga sewer system,
which is connected to the Buffalo Municipal Sewer System and Treatment facilities, and which
wastewater will be treated at the Buffalo Sewer Authority's Treatment Plant.

Issuance of this permit is based upon a permit application filed on **February 19, 2019** analytical
data. This permit is granted in accordance with discharge limitations, monitoring requirements and
other conditions set forth in Parts I and II hereof.

Effective this 1st^{day} of April, 2019

To Expire the 31st day of March, 2022



General Manager

Signed this 20th day of MARCH, 2019

RECEIVED

MAR 27 2019

ENGINEERING DEPT.

PART I: SPECIFIC CONDITIONS**A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS**

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **quarterly** by the permittee as specified below.

Sample Point	Parameter	Discharge Limitations ⁽¹⁾	Sampling Requirements	
		Daily Max	Period	Type
001	pH	5.0 – 12.0 S.U.	1 day	Composite ²
	Total Cadmium	1.17 lbs.	1 day	Composite ²
	Total Chromium	1.17 lbs.	1 day	Composite ²
	Total Copper	3.74 lbs.	1 day	Composite ²
	Total Lead	1.17 lbs.	1 day	Composite ²
	Total Nickel	3.27 lbs.	1 day	Composite ²
	Total Zinc	5.84 lbs.	1 day	Composite ²
	Total Barium	2.34 lbs.	1 day	Composite ²
	Total Suspended Solids ⁵	250 mg/l	1 day	Composite ²
	Total Flow	140,100 gallons ⁶	1 day	Discharge meter reading

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS**A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS**

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **once** by the permittee as specified below.

Sample Point	Parameter	Discharge Limitations⁽¹⁾	Sampling Requirements	
		Daily Max	Period	Type
001	Total Mercury	0.001 lbs.	1 day	Composite ²
	USEPA Test Method 608 ⁴	To be monitored	1 day	Grab ³
	USEPA Test Method 624 ⁴	To be monitored	1 day	Grab ³
	USEPA Test Method 625 ⁴	To be monitored	1 day	Grab ³

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS

B. DISCHARGE MONITORING REPORTING REQUIREMENTS

During the period beginning the effective date of this permit and lasting until the expiration date, discharge monitoring results shall be summarized and reported **quarterly** by the permittee on the days specified below:

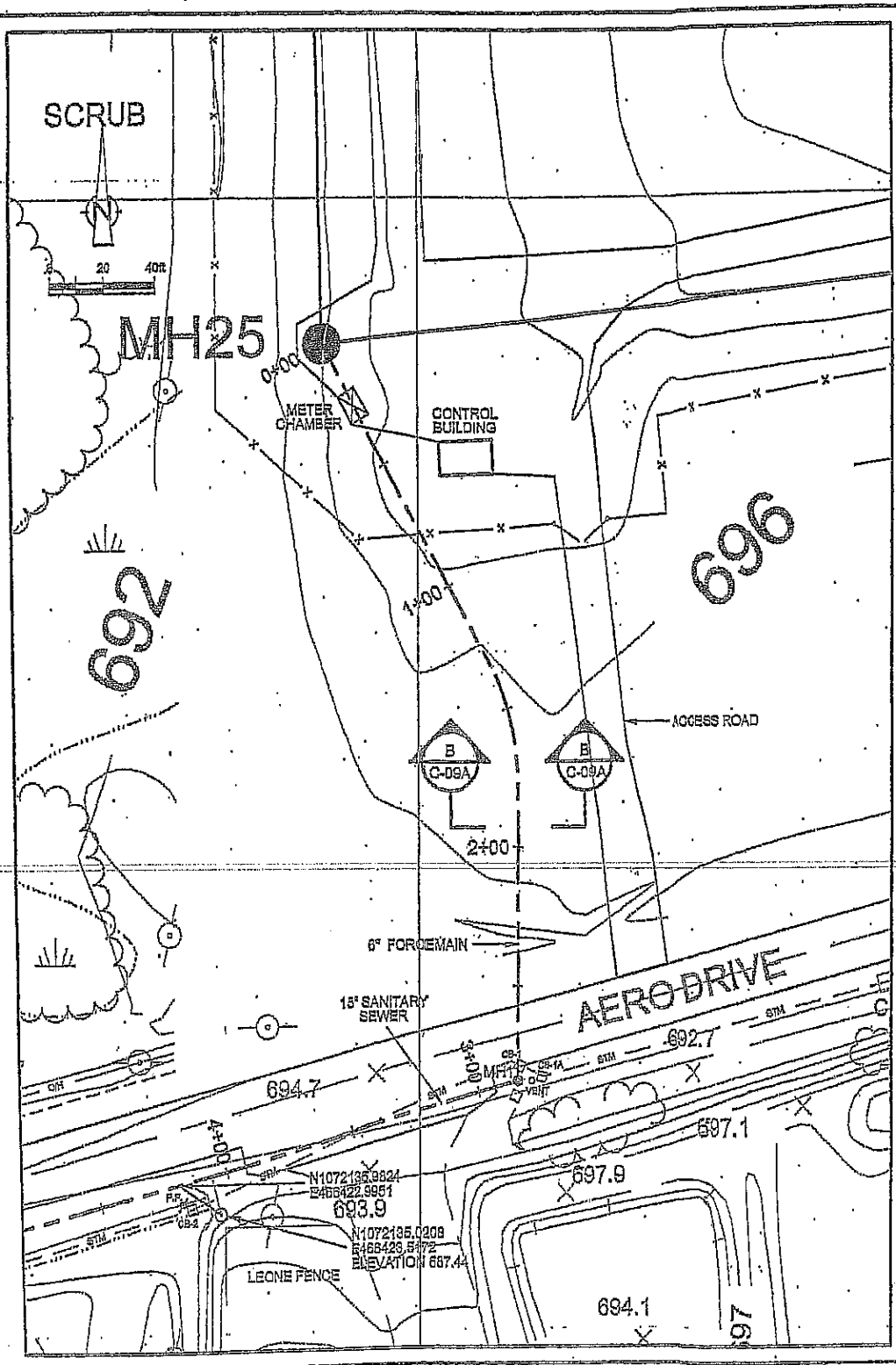
Sample Point	Parameter	Reporting Requirements	
		Initial Report	Subsequent Reports
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	June 30, 2019	Every March 31 st , June 30 th , September 30 th and December 31 st
	USEPA Test Methods 608, 624 and 625 & T Mercury	June 30, 2019	

* Please submit new discharge permit application 6 months prior to the expiration of this permit*

PART I: SPECIFIC CONDITIONS

C. SPECIAL REQUIREMENTS

1. Mass limits based on an average discharge of 140,100 gpd.
2. Composite samples may be time proportioned.
3. Four grab samples must be collected at equally spaced intervals throughout the sample day. The four (4) grab samples must be composited by a NYSDOH certified laboratory prior to analysis.
4. The permittee must report any compound whose concentration is equal to or greater than 0.01 mg/L. The permittee is not authorized to discharge any of the parameters evaluated by these test procedures which may cause or contribute to a violation of water quality standards or harm the sewerage system. Any parameter detected may, at the discretion of the BSA, be specifically limited and incorporated in this permit.
5. Surchargeable over 250 mg/L.
6. Flow is an action level only. If the permittee consistently exceeds this level, the BSA must be notified so that this permit can be modified.



**TOWN OF CHEEKTOWAGA/BUFFALO POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT**

PART II GENERAL CONDITIONS

A. MONITORING AND REPORTING

1. Local Limits

Except as otherwise specified in this permit, the permit holder shall comply with all specific prohibitions, limits on pollutants or pollutant parameters set forth in the Buffalo Sewer Authority Sewer Use Regulations, as amended from time to time, and such prohibitions, limits and parameters shall be deemed pretreatment standards for purposes of the Clean Water Act

2. Definitions

Definitions of terms contained in this permit are as defined in the Town of Cheektowaga Local Law No. 2 and the Buffalo Sewer Authority Sewer Use Regulations.

3. Discharge Sampling Analysis

All Wastewater discharge samples and analyses and flow measurements shall be representative of the volume and character of the monitored discharge. Methods employed for flow measurements and sample collections and analyses shall conform to the Buffalo Sewer Authority "Sampling Measurement and Analytical Guidelines Sheet."

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of the permit, the Permittee shall record the information as required in the "Sampling Measurement and Analytical Guidelines Sheet."

5. Additional Monitoring by Permittee

If the Permittee monitors any pollutants at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified in 40 CFR Part 136 the results of such monitoring shall be included in the calculation and reporting of values required under Part I, B. Such increased frequency shall also be indicated.

6. Reporting

All reports prepared in accordance with this Permit shall be submitted to:

**Patrick Bowen, P.E.
Town Engineer
275 Alexander Ave.
Cheektowaga, New York, 14211**

All self-monitoring reports shall be prepared in accordance with the BSA "Sampling Measurement and Analytical Guidelines Sheet." These reporting requirements shall not relieve the Permittee of any other reports, which may be required by the

N.Y.S.D.E.C. or the U.S.E.P.A.

B. PERMITTEE REQUIREMENTS

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit and with the information contained in the TC/BPDES Permit Application on which basis this permit is granted. In the event of any facility expansions, production increases, process modifications or the installation, modification or repair of any pretreatment equipment which may result in new, different or increased discharges of pollutants, a new TC/BPDES Permit Application must be submitted prior to any change. Following receipt of an amended application, the BSA may modify this permit to specify and limit any pollutants not previously limited. In the event that the proposed change will be covered under an applicable Categorical Standard, a Baseline Monitoring Report must be submitted at least ninety (90) days prior to any discharge.

2. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, calibration and maintenance of instrumentation, and recordings from continuous monitoring instrumentation shall be retained at this facility for a minimum of three (3) years, or longer if requested by the General Manager and/or Town Engineer.

3. Notification of Slug, Accidental Discharge or Spill

In the event that a slug, accidental discharge or any spill occurs at the facility for which this permit is issued, it is the responsibility of the Permittee to immediately notify the B.S.A. Treatment Plant at 883-1820 of the quantity and character of such discharge. If requested by the B.S.A., within five (5) days following all such discharges, the Permittee shall submit a report describing the character and duration of the discharge, the cause of the discharge, and measures taken or that will be taken to prevent a recurrence of such discharge.

4. Noncompliance Notification

If, for any reason, the Permittee does not comply with or will be unable to comply with any discharge limitation specified in this permit, the Permittee or their assigns must verbally notify the Industrial Waste Section at 883-1820 within twenty-four (24) hours of becoming aware of the violation. The Permittee shall provide the Industrial Waste Section with the following information, in writing, within five (5) days of becoming aware of such condition:

- a. a description of the discharge and cause of noncompliance and;
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

5. Adverse Impact

The Permittee shall take all reasonable steps to minimize any adverse impact to the Buffalo and Town Sewerage System resulting from noncompliance with any discharge limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

6. Waste Residuals

Solids, sludges, filter backwash or other pollutants removed in the course of treatment or control of wastewaters and/or the treatment of intake waters, shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the Buffalo or Town Sewer System.

7. Power Failures

In order to maintain compliance with the discharge limitations and prohibitions of this permit, the Permittee shall provide an alternative power source sufficient to operate the wastewater control facilities; or, if such alternative power source is not provided the Permittee shall halt, reduce or otherwise control production and/or controlled discharges upon the loss of power to the wastewater control facilities.

8. Treatment Upsets

- a. Any industrial user which experiences an upset in operations that places it in a temporary state of noncompliance, which is not the result of operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation, shall inform the Industrial Waste Section immediately upon becoming aware of the upset. Where such information is given verbally, a written report shall be filed by the user within five (5) days. The report shall contain:
 - (i) A description of the upset, its cause(s) and impact on the discharger's compliance status.
 - (ii) The duration of noncompliance, including exact dates and times of noncompliance, and if the noncompliance is continuing, the time by which compliance is reasonably expected to be restored
 - (iii) All steps taken or planned to reduce, eliminate, and prevent recurrence of such an upset.
- b. An industrial user which complies with the notification provisions of this Section in a timely manner shall have an affirmative defense to any enforcement action brought by the Industrial Waste Section/Town Engineer for any noncompliance of the limits in this permit, which arises out of violations attributable to and alleged to have occurred during the period of the documented and verified upset.

9. Treatment Bypasses

- a. A bypass of the treatment system is prohibited unless the following conditions are met:
 - (i) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; or
 - (ii) There was no feasible alternative to the bypass, including the use of auxiliary treatment or retention of the wastewater; and
 - (iii) The industrial user properly notified the Industrial Waste Section as described in paragraph b. below.
- b. Industrial users must provide immediate notice to the Industrial Waste Section upon delivery of an unanticipated bypass. If necessary, the Industrial Waste Section may require the industrial user to submit a written report explaining the cause(s), nature, and duration of the bypass, and the steps being taken to prevent its recurrence.
- c. An industrial user may allow a bypass to occur which does not cause pretreatment standards or requirements to be violated, but only if it is for essential maintenance to ensure efficient operation of the treatment system. Industrial users anticipating a bypass must submit notice to the Industrial Waste Section at least ten (10) days in advance. The Industrial Waste Section may only approve the anticipated bypass if the circumstances satisfy those set forth in paragraph a. above.

C. PERMITTEE RESPONSIBILITIES

1. Permit Availability

The originally signed permit must be available upon request at all times for review at the address stated on the first page of this permit.

2. Inspections

The Permittee shall allow the representatives of the Buffalo Sewer Authority or Town of Cheektowaga upon the presentation of credentials and during normal working hours or at any other reasonable times, to have access to and copy any records required in this permit; and to sample any discharge of pollutants.

3. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities for which this permit has been issued the permit shall become null and void. The succeeding owner shall submit a completed Town of Cheektowaga/ Buffalo Sewer Authority permit application prior to discharge to the sewer system.

D. PERMITTEE LIABILITIES

1. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to the following:

- a. Violation of any terms or conditions of this permit,
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts,
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

2. Imminent Danger

In the event there exists an imminent danger to health or property, the permitter reserves the right to take immediate action to halt the permitted discharge to the sewerage works.

3. Civil and Criminal Liability

Nothing in this permit shall relieve the Permittee from any requirements, liabilities, or penalties under provisions of the Town of Cheektowaga Local Law No. 2, the "Sewer Regulations of the Buffalo Sewer Authority" or any Federal, State and/or local laws or regulations.

4. Penalties for Violations of Permit Conditions

The "Sewer Regulations of the Buffalo Sewer Authority" and Town of Cheektowaga Local Law No. 2, provide that any person who violates a B.P.D.E.S. permit condition is liable to the Authority and/or the Town for a civil penalty of up to \$10,000 per day for each violation. Any person who willfully or negligently violates permit conditions will be referred to the New York State Attorney General.

E. NATIONAL PRETREATMENT STANDARDS

If a pretreatment standard or prohibition (including any Schedule of Compliance specified in such pretreatment standard or prohibition) is established under Section 307 (b) of the Act for a pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with such pretreatment standard or prohibition.

F. PLANT CLOSURE

In the event of plant closure, the Permittee is required to notify the Industrial Waste Section/Town Engineer in writing as soon as an anticipated closure date is determined, but in no case later than five (5) days of the actual closure.

G. CONFIDENTIALITY

Except for data determined to be confidential under Section 308 of the Act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Buffalo Sewer Authority or Town Engineer of the Town of Cheektowaga. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

H. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

APPENDIX G

DISCHARGE REPORT SUMMARY TABLES

SAMPLING FIELD SHEET



Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

Contact: Patrick T. Bowen, P.E. Phone: 716-897-7288

Installation:

Sample Point: SP-001

Sample Location: Meter Chamber - ball valve on 6" HDPE forcemain

Date: 3/25/21 Crew: R. Murphy, T. Urban

Weather: 65° F, partly cloudy

Sampling Device: NA

Time of Installation: 12:30 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: WW-04 running at the time of sample set-up.

PLC display volumes: WW-01 (442,398 gals), WW-02 (22,449 gals), WW-03 (1,416 gals),

WW-04 (2,043,156 gals), WW-05 (1,112,047 gals), WW-06 (3,718,191 gals) & MH-25 (7,515,647 gals).

Date: 3/26/21 Crew: R. Murphy, T. Urban

Weather: 46° F, rainy and windy

Time of Collection: 12:30

Field Measurements:

12:30/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10
(time/initial)

pH Measurement: 7.09 Oakton pH Tester30, s/n T311487089

Temperature: 10.5°C

Identification: EFF-032621

Physical Observations: Light red tint

Laboratory: Eurofins TestAmerica, Buffalo, NY

Comments: No wells running at the time of sample collection.

PLC display volumes: WW-01 (442,398 gals), WW-02 (22,449 gals), WW-03 (1,416 gals),

WW-04 (2,063,835 gals), WW-05 (1,112,047 gals), WW-06 (3,718,191 gals) & MH-25 (7,536,625 gals).

Reviewed By: Robert J. Murphy Date: 3/26/21
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
MARCH 2021**

Sample ID	EFF-032621			
Matrix	Effluent Water			
Date Sampled	3/26/2021			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Yes/No)
Total Barium	0.29	0.05	2.34	No
Total Cadmuim	< ⁽¹⁾ 0.0005	< 0.00009	1.17	No
Total Chromium	< 0.0010	< 0.0002	1.17	No
Total Copper	< 0.0016	< 0.0003	3.74	No
Total Lead	< 0.0030	< 0.0005	1.17	No
Total Nickel	0.0031 J	0.0005	3.27	No
Total Zinc	0.0060 J	0.001	5.84	No
Total Suspended Solids	15.2	NA ⁽²⁾	250 ⁽³⁾	No
pH ⁽⁴⁾	7.09	NA	5.0 - 12.0	No
Total Flow ⁽⁵⁾		20,978	140,100	No

Notes:

- (1) < = Compound not detected, method detection limit shown
- (2) NA = Not Applicable
- (3) Discharge Limitation in units of mg/L
- (4) pH measurement and Discharge Limitation in Standard Units
- (5) Total Flow reported in gallons, sample was collected over a 24 hour period
- J= Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

$$\text{Calculation: } \left(\frac{x \text{ mg}}{\text{L}} \right) \left(\frac{y \text{ gal}}{\text{day}} \right) \left(\frac{1 \text{ lb}}{453,600 \text{ mg}} \right) \left(\frac{3.785 \text{ L}}{\text{gal}} \right) = \frac{x \times y}{119,841} \frac{\text{lb}}{\text{day}}$$

mg = milligrams

gal = gallons

L = Liters

lb(s) = pound(s)

SAMPLING FIELD SHEET



Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

Contact: Patrick T. Bowen, P.E. Phone: 716-897-7288

Installation:

Sample Point: SP-001

Sample Location: Meter Chamber - ball valve on 6" HDPE forcemain

Date: 6/29/21 Crew: R. Murphy, T. Urban

Weather: 88 °F, mostly sunny

Sampling Device: NA

Time of Installation: 9:45 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: No wells running at the time of sample set-up.
PLC display volumes: WW-01 (442,398 gals), WW-02 (37,208 gals), WW-03 (1,416 gals),
WW-04 (2,595,153 gals), WW-05 (1,685,367 gals), WW-06 (5,019,326 gals) & MH-25 (10,048,450 gals).

Date: 6/30/21 Crew: R. Murphy, T. Urban

Weather: 77 °F, cloudy

Time of Collection: 9:45

Field Measurements:

9:45/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10
(time/initial)

pH Measurement: 7.77 Oakton pH Tester30, s/n T311487089

Temperature: 20.9 °C

Identification: EFF-063021

Physical Observations: Light red tint

Laboratory: Eurofins TestAmerica, Buffalo, NY

Comments: No wells running at the time of sample collection.
PLC display volumes: WW-01 (442,398 gals), WW-02 (37,208 gals), WW-03 (1,416 gals),
WW-04 (2,595,153 gals), WW-05 (1,694,421 gals), WW-06 (5,019,480 gals) & MH-25 (10,057,712 gals).

Reviewed By: Robert J. Murphy Date: 6/30/21
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
JUNE 2021**

Sample ID	EFF-063021			
Matrix	Effluent Water			
Date Sampled	6/30/2021			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Yes/No)
Total Barium	0.26	0.02	2.34	No
Total Cadmuim	< ⁽¹⁾ 0.0005	< 0.00004	1.17	No
Total Chromium	< 0.0010	< 0.0001	1.17	No
Total Copper	0.0021 J	0.0002	3.74	No
Total Lead	< 0.0030	< 0.0002	1.17	No
Total Nickel	0.0038 J	0.0003	3.27	No
Total Zinc	0.0025 J	0.0002	5.84	No
Total Suspended Solids	16.4	NA ⁽²⁾	250 ⁽³⁾	No
pH ⁽⁴⁾	7.77	NA	5.0 - 12.0	No
Total Flow ⁽⁵⁾		9,262	140,100	No

Notes:

- (1) < = Compound not detected, method detection limit shown
- (2) NA = Not Applicable
- (3) Discharge Limitation in units of mg/L
- (4) pH measurement and Discharge Limitation in Standard Units
- (5) Total Flow reported in gallons, sample was collected over a 24 hour period
- J Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

$$\text{Calculation: } \left(\frac{x \text{ mg}}{\text{L}} \right) \left(\frac{y \text{ gal}}{\text{day}} \right) \left(\frac{1 \text{ lb}}{453,600 \text{ mg}} \right) \left(\frac{3.785 \text{ L}}{\text{gal}} \right) = \frac{x \times y}{119,841} \frac{\text{lb}}{\text{day}}$$

mg = milligrams

gal = gallons

L = Liters

lb(s) = pound(s)

APPENDIX H

MONITORING WELL INSPECTION LOGS

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date(s) of Inspection: May 19, 2021

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-01S	OK	OK	OK	Bulged	4.61	14.94	
GW-01D	OK	OK	OK	Bulged	3.31	39.65	
GW-03S	OK	OK	OK	OK	2.98	13.22	
GW-03D	OK	OK	OK	OK	1.94	35.70	
GW-04S	OK	OK	OK	OK	4.55	16.23	
GW-04D	OK	OK	OK	OK	12.75	45.57	
GW-07S	OK	OK	OK	OK	5.08	35.33	
GW-07D	OK	OK	OK	Damaged	44.00	60.83	

Additional Comments:

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date(s) of Inspection: May 19, 2021

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-08SR	OK	OK	OK	OK	5.37	13.02	
GW-08D	OK	OK	OK	OK	5.95	36.54	
GW-26D	OK	OK	OK	OK	6.78	40.70	
GW-28S	OK	OK	OK	OK	9.30	15.52	
GW-29S	OK	OK	OK	OK	8.82	20.04	
GW-30S	OK	OK	OK	OK	7.86	17.97	
GW-31S	OK	OK	OK	OK	3.59	9.57	
GW-32S	OK	OK	OK	OK	3.90	9.93	

Additional Comments:

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date(s) of Inspection: May 19, 2021

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-33S	OK	OK	OK	OK	5.35	8.21	
GW-34S	OK	OK	OK	OK	3.15	10.01	
GW-35S	OK	OK	OK	OK	3.82	7.46	

Additional Comments:

DATA APPLICABILITY REPORT

SEMI-ANNUAL GROUNDWATER MONITORING

PFOHL BROTHERS LANDFILL SITE

Analyses Performed by:

**EUROFINS TESTAMERICA, BUFFALO
10 HAZELWOOD DRIVE
AMHERST, NY**

Prepared for:

**TOWN OF CHEEKTOWAGA
CHEEKTOWAGA, NY 14225**

Prepared by:

**AECOM
ONE JOHN JAMES AUDUBON PARKWAY
SUITE 210
AMHERST, NEW YORK 14228**

JUNE 2021

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TABLES (Following Text)

Table 1	Validated Groundwater Sample Results
Table 2	Validated Field QC Sample Results

APPENDICES

Appendix A – Validated Sample Reporting Forms
Appendix B – Support Documentation

I. INTRODUCTION

This Data Applicability Report (DAR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 2B-Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, May 2010. This DAR discusses the usability of the analytical data for groundwater samples collected during the May 2021 semi-annual monitoring program at the Pfohl Brothers Landfill Site, located in Cheektowaga, NY.

II. ANALYTICAL METHODOLOGIES and DATA APPLICABILITY PROCEDURES

The data being evaluated are from the May 19-21, 2021 sampling of nineteen (19) groundwater samples, one (1) field duplicate, one (1) matrix spike (MS)/matrix spike duplicate (MSD) pair, and two (2) trip blanks. The analytical laboratory that performed the analyses was Eurofins TestAmerica, Buffalo located in Amherst, NY. The samples were analyzed for the following project specific parameters: Volatile Organic Compounds (VOCs) following United States Environmental Protection Agency (USEPA) Method 8260C, Semivolatile Organic Compounds (SVOCs) by USEPA Method 8270D, and metals by USEPA Methods 6010C/7470A. Not all samples were analyzed for all parameters.

A limited data review was performed in accordance with the following USEPA guidelines:

- *Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B & 8260C, SOP HW-24, Rev. 4, October 2014;*
- *Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8270D, SOP HW-22, Rev. 5, December 2010;*
- ICP-AES Data Validation, SOP HW-3a, Rev. 1, September 2016; and
- Mercury and Cyanide Data Validation, SOP HW-3c, Rev. 1, September 2016.

The data applicability evaluation included a review of completeness of all required deliverables; holding times; quality control (QC) results (blanks, matrix spike recoveries, duplicate analyses, and laboratory control sample recoveries) to determine if the data are within the protocol-required QC limits and specifications; a determination that all samples were analyzed using established and agreed upon analytical protocols; and a review of laboratory data qualifiers.

Definitions of USEPA data qualifiers are presented at the end of this text. The analytical results are presented on Table 1 (groundwater) and Table 2 (field QC). Copies of the laboratory results (i.e., sample reporting forms) are presented in Appendix A. Documentation supporting the qualification of data is presented in Appendix B. Only analytical deviations affecting data usability are discussed in this report.

III. DATA DELIVERABLE COMPLETENESS

In accordance with the project requirements, limited deliverable data packages (level 2) were provided by the laboratory, which only consisted of analytical summaries, QC reporting forms and case narratives.

IV. SAMPLE RECEIPT/PRESERVATION/HOLDING TIMES

All samples were received by the laboratory intact, properly preserved and under proper chain-of-custody (COC). All samples were analyzed within the required holding times (HT).

Due to the low recharge rates of monitoring wells GW-07D and GW-07S, the VOC aliquots were collected on 05/19/21, while the SVOC/metals aliquots were collected on 05/21/21. For the same reason sample GW-04S had the VOC aliquots collected at 1502 and the SVOC/metals aliquots collected at 1655 on 05/19/21.

V. NON-CONFORMANCES

Laboratory Method Blanks

Iron and Manganese were detected in the laboratory method blanks at a concentration less than the reporting limit (RL). Since the concentration of these metals in the associated samples were greater than the RL, the 'B' qualifier applied by the laboratory has been removed.

VI. SAMPLE RESULTS AND REPORTING

All RLs were reported in accordance with method requirements and were adjusted for sample size and dilution factors. Results for compounds/analytes detected below the RL are qualified 'J' by the laboratory.

A field duplicate was collected at groundwater location GW-26D. The field duplicate results exhibited good field and analytical precision.

VII. SUMMARY

All sample analyses were found to be compliant with the method criteria, except where previously noted. All results qualified 'J' are conditionally usable. All other sample results are usable as reported. AECOM does not recommend the recollection of any samples.

Prepared By: Ann Marie Kropovitch, Chemist  **Date:** 6/21/21

Reviewed by: George E. Kisluk, Senior Chemist  **Date:** 6/21/21

DEFINITIONS OF USEPA DATA QUALIFIERS

- U – The analyte was analyzed for, but was not detected above the level of the sample reporting limit.
- J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ – The metal result is an estimated quantity, but the result may be biased high.
- J- – The metal result is an estimated quantity, but the result may be biased low.
- UJ – The analyte was analyzed for, but not detected. The reporting limit is approximate and may be inaccurate or imprecise.
- R – The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID		GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/19/21	05/19/21	05/20/21	05/20/21	05/19/21
Parameter	Units					
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	10 U	10 U	2.8 J	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	3.7 J	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenol	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.088	0.17	0.081	0.086	0.091
Cadmium	MG/L	0.00051 J	0.00051 J	0.0010 U	0.0011	0.00051 J
Chromium	MG/L	0.010	0.0040 U	0.0040 U	0.0074	0.0012 J
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	1.0	5.9	1.0	0.16	0.071
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	37.2	20.3	16.4	76.9	74.3
Manganese	MG/L	0.036	0.93	0.24	0.099	0.019
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.036	0.010 U	0.0040 J	0.051	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/11/21

CHECKED BY: GEK 6/21/21

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID		GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/19/21	05/19/21	05/20/21	05/20/21	05/19/21
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	125	172	183	119	97.5
Zinc	MG/L	0.016	0.010 U	0.0021 J	0.0099 J	0.017

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/11/21

CHECKED BY: GEK 6/21/21

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/19/21	05/19/21	05/20/21	05/19/21	05/20/21
Parameter	Units					
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	NA	1.0 U	NA
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	NA	2.0 U	NA
Acetone	UG/L	10 U	14	NA	10 U	NA
Benzene	UG/L	1.0 U	1.0 U	NA	1.0 U	NA
Vinyl chloride	UG/L	1.0 U	1.0 U	NA	1.0 U	NA
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	10 U	NA	10 U	NA	10 U
1,4-Dichlorobenzene	UG/L	10 U	NA	10 U	NA	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	NA	22	NA	5.0 U
Phenol	UG/L	5.0 U	NA	5.0 U	NA	5.0 U
Metals						
Antimony	MG/L	0.020 U	NA	0.020 U	NA	0.020 U
Arsenic	MG/L	0.010 U	NA	0.010 U	NA	0.010 U
Barium	MG/L	0.10	NA	0.12	NA	0.46
Cadmium	MG/L	0.00056 J	NA	0.0031	NA	0.0010 U
Chromium	MG/L	0.0040	NA	0.98	NA	0.0014 J
Copper	MG/L	0.0020 J	NA	0.056	NA	0.010 U
Iron	MG/L	0.95	NA	11.5	NA	0.10
Lead	MG/L	0.0050 U	NA	0.18	NA	0.0050 U
Magnesium	MG/L	27.8	NA	38.3	NA	46.8
Manganese	MG/L	0.056	NA	0.17	NA	0.074
Mercury	MG/L	0.00020 U	NA	0.00020 U	NA	0.00020 U
Nickel	MG/L	0.0034 J	NA	0.43	NA	0.0080 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/11/21

CHECKED BY: GEK 6/21/21

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/19/21	05/19/21	05/20/21	05/19/21	05/20/21
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	NA	0.0030 U	NA	0.0030 U
Sodium	MG/L	29.3	NA	85.2	NA	63.6
Zinc	MG/L	0.0046 J	NA	0.088	NA	0.0045 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/11/21

CHECKED BY: GEK 6/21/21

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-08D	GW-08SR	GW-26D	GW-26D	GW-28S
Sample ID		GW-08D	GW-08SR	FD-052021	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/20/21	05/20/21	05/20/21	05/20/21	05/21/21
Parameter	Units			Field Duplicate (1-1)		
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	11 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	11 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.4 U
Phenol	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.4 U
Metals						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.069	0.099	0.10	0.10	0.075
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.038	0.0015 J	0.0040 U	0.0040 U	0.0040 U
Copper	MG/L	0.0028 J	0.010 U	0.010 U	0.010 U	0.0025 J
Iron	MG/L	0.50	7.9	2.0	1.8	0.11
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	16.8	47.3	14.7	14.6	25.0
Manganese	MG/L	0.0085	0.59	0.32	0.31	0.81
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.011	0.0013 J	0.010 U	0.010 U	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/11/21

CHECKED BY: GEK 6/21/21

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-08D	GW-08SR	GW-26D	GW-26D	GW-28S
Sample ID		GW-08D	GW-08SR	FD-052021	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/20/21	05/20/21	05/20/21	05/20/21	05/21/21
Parameter	Units			Field Duplicate (1-1)		
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	203	160	296	293	8.3
Zinc	MG/L	0.010	0.0018 J	0.010 U	0.010 U	0.0020 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/11/21

CHECKED BY: GEK 6/21/21

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/21/21	05/21/21	05/21/21	05/21/21	05/21/21
Parameter	Units					
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	11 U	11 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	11 U	11 U
bis(2-Ethylhexyl)phthalate	UG/L	5.2 U	5.2 U	5.0 U	5.4 U	5.4 U
Phenol	UG/L	5.2 U	5.2 U	5.0 U	5.4 U	5.4 U
Metals						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.020	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.18	0.14	0.085	0.053	0.044
Cadmium	MG/L	0.00052 J	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	12.5	8.4	4.3	0.023 J	0.027 J
Lead	MG/L	0.0030 J	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	62.7	31.2	25.0	27.7	24.2
Manganese	MG/L	0.59	1.1	0.65	0.37	0.044
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/11/21

CHECKED BY: GEK 6/21/21

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/21/21	05/21/21	05/21/21	05/21/21	05/21/21
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	9.4	104	2.4	2.7	2.1
Zinc	MG/L	0.010 U	0.26	0.0027 J	0.0030 J	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/11/21
 CHECKED BY: GEK 6/21/21

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-34S	GW-35S
Sample ID		GW-34S	GW-35S
Matrix		Groundwater	Groundwater
Depth Interval (ft)		-	-
Date Sampled		05/20/21	05/20/21
Parameter	Units		
Volatile Organic Compounds			
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U
Semivolatile Organic Compounds			
1,3-Dichlorobenzene	UG/L	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U
Phenol	UG/L	5.0 U	5.0 U
Metals			
Antimony	MG/L	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U
Barium	MG/L	0.15	0.089
Cadmium	MG/L	0.0010 U	0.0010 U
Chromium	MG/L	0.0040 U	0.0040 U
Copper	MG/L	0.010 U	0.010 U
Iron	MG/L	0.096	0.057
Lead	MG/L	0.0050 U	0.0050 U
Magnesium	MG/L	37.6	22.9
Manganese	MG/L	0.66	0.16
Mercury	MG/L	0.00020 U	0.00020 U
Nickel	MG/L	0.0041 J	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/11/21

CHECKED BY: GEK 6/21/21

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-34S	GW-35S
Sample ID		GW-34S	GW-35S
Matrix		Groundwater	Groundwater
Depth Interval (ft)		-	-
Date Sampled		05/20/21	05/20/21
Parameter	Units		
Metals			
Silver	MG/L	0.0030 U	0.0030 U
Sodium	MG/L	23.2	2.8
Zinc	MG/L	0.010 U	0.0023 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/11/21

CHECKED BY: GEK 6/21/21

Detection Limits shown are PQL

TABLE 2
VALIDATED FIELD QC SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		FIELDQC	FIELDQC
Sample ID		TB-051921+052021	TRIP BLANK
Matrix		Quality Control	Quality Control
Depth Interval (ft)		-	-
Date Sampled		05/20/21	05/21/21
Parameter	Units	Trip Blank (1-1)	Trip Blank (1-1)
Volatile Organic Compounds			
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/11/21

CHECKED BY: GEK 6/21/21

Detection Limits shown are PQL

APPENDIX A

VALIDATED SAMPLE REPORTING FORMS

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill GW Monitoring

Job ID: 480-185012-1

Client Sample ID: GW-07D

Lab Sample ID: 480-185012-1

Date Collected: 05/19/21 09:55

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 13:31	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 13:31	1
Acetone	14		10	3.0	ug/L			05/22/21 13:31	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 13:31	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 13:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		05/22/21 13:31	1
Toluene-d8 (Surr)	98		80 - 120		05/22/21 13:31	1
4-Bromofluorobenzene (Surr)	100		73 - 120		05/22/21 13:31	1
Dibromofluoromethane (Surr)	100		75 - 123		05/22/21 13:31	1

Client Sample Results

Client: AECOM

Job ID: 480-185012-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-07S

Lab Sample ID: 480-185012-2

Date Collected: 05/19/21 10:00

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 13:54	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 13:54	1
Acetone	ND		10	3.0	ug/L			05/22/21 13:54	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 13:54	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 13:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		77 - 120		05/22/21 13:54	1
Toluene-d8 (Surr)	96		80 - 120		05/22/21 13:54	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/22/21 13:54	1
Dibromofluoromethane (Surr)	95		75 - 123		05/22/21 13:54	1

Client Sample Results

Client: AECOM

Job ID: 480-185012-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-01D

Lab Sample ID: 480-185012-3

Date Collected: 05/19/21 13:38

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 14:17	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 14:17	1
Acetone	ND		10	3.0	ug/L			05/22/21 14:17	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 14:17	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 14:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		77 - 120		05/22/21 14:17	1
Toluene-d8 (Surr)	97		80 - 120		05/22/21 14:17	1
4-Bromofluorobenzene (Surr)	102		73 - 120		05/22/21 14:17	1
Dibromofluoromethane (Surr)	96		75 - 123		05/22/21 14:17	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/25/21 22:20	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/25/21 22:20	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/25/21 22:20	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/25/21 22:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	118		41 - 120	05/24/21 15:22	05/25/21 22:20	1
2-Fluorobiphenyl	112		48 - 120	05/24/21 15:22	05/25/21 22:20	1
2-Fluorophenol	82		35 - 120	05/24/21 15:22	05/25/21 22:20	1
Nitrobenzene-d5	109		46 - 120	05/24/21 15:22	05/25/21 22:20	1
Phenol-d5	59		22 - 120	05/24/21 15:22	05/25/21 22:20	1
p-Terphenyl-d14	97		60 - 148	05/24/21 15:22	05/25/21 22:20	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/24/21 23:39	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/24/21 23:39	1
Barium	0.088		0.0020	0.00070	mg/L		05/24/21 10:55	05/24/21 23:39	1
Cadmium	0.00051	J	0.0010	0.00050	mg/L		05/24/21 10:55	05/24/21 23:39	1
Chromium	0.010		0.0040	0.0010	mg/L		05/24/21 10:55	05/24/21 23:39	1
Copper	ND		0.010	0.0016	mg/L		05/24/21 10:55	05/24/21 23:39	1
Iron	1.0		0.050	0.019	mg/L		05/24/21 10:55	05/24/21 23:39	1
Lead	ND		0.0050	0.0030	mg/L		05/24/21 10:55	05/24/21 23:39	1
Magnesium	37.2		0.20	0.043	mg/L		05/24/21 10:55	05/24/21 23:39	1
Manganese	0.036		0.0030	0.00040	mg/L		05/24/21 10:55	05/24/21 23:39	1
Nickel	0.036		0.010	0.0013	mg/L		05/24/21 10:55	05/24/21 23:39	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/24/21 23:39	1
Sodium	125		1.0	0.32	mg/L		05/24/21 10:55	05/24/21 23:39	1
Zinc	0.016		0.010	0.0015	mg/L		05/24/21 10:55	05/24/21 23:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:02	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM

Job ID: 480-185012-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-01S

Lab Sample ID: 480-185012-4

Date Collected: 05/19/21 14:25

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 14:40	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 14:40	1
Acetone	ND		10	3.0	ug/L			05/22/21 14:40	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 14:40	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 14:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		05/22/21 14:40	1
Toluene-d8 (Surr)	96		80 - 120		05/22/21 14:40	1
4-Bromofluorobenzene (Surr)	100		73 - 120		05/22/21 14:40	1
Dibromofluoromethane (Surr)	99		75 - 123		05/22/21 14:40	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/25/21 22:47	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/25/21 22:47	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/25/21 22:47	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/25/21 22:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	119		41 - 120	05/24/21 15:22	05/25/21 22:47	1
2-Fluorobiphenyl	102		48 - 120	05/24/21 15:22	05/25/21 22:47	1
2-Fluorophenol	88		35 - 120	05/24/21 15:22	05/25/21 22:47	1
Nitrobenzene-d5	105		46 - 120	05/24/21 15:22	05/25/21 22:47	1
Phenol-d5	56		22 - 120	05/24/21 15:22	05/25/21 22:47	1
p-Terphenyl-d14	92		60 - 148	05/24/21 15:22	05/25/21 22:47	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/24/21 23:43	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/24/21 23:43	1
Barium	0.17		0.0020	0.00070	mg/L		05/24/21 10:55	05/24/21 23:43	1
Cadmium	0.00051	J	0.0010	0.00050	mg/L		05/24/21 10:55	05/24/21 23:43	1
Chromium	ND		0.0040	0.0010	mg/L		05/24/21 10:55	05/24/21 23:43	1
Copper	ND		0.010	0.0016	mg/L		05/24/21 10:55	05/24/21 23:43	1
Iron	5.9		0.050	0.019	mg/L		05/24/21 10:55	05/24/21 23:43	1
Lead	ND		0.0050	0.0030	mg/L		05/24/21 10:55	05/24/21 23:43	1
Magnesium	20.3		0.20	0.043	mg/L		05/24/21 10:55	05/24/21 23:43	1
Manganese	0.93		0.0030	0.00040	mg/L		05/24/21 10:55	05/24/21 23:43	1
Nickel	ND		0.010	0.0013	mg/L		05/24/21 10:55	05/24/21 23:43	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/24/21 23:43	1
Sodium	172		1.0	0.32	mg/L		05/24/21 10:55	05/24/21 23:43	1
Zinc	ND		0.010	0.0015	mg/L		05/24/21 10:55	05/24/21 23:43	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:03	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill GW Monitoring

Job ID: 480-185012-1

Client Sample ID: GW-04S

Lab Sample ID: 480-185012-5

Date Collected: 05/19/21 15:02

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/27/21 04:58	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/27/21 04:58	1
Acetone	ND		10	3.0	ug/L			05/27/21 04:58	1
Benzene	ND		1.0	0.41	ug/L			05/27/21 04:58	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/27/21 04:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120		05/27/21 04:58	1
Toluene-d8 (Surr)	100		80 - 120		05/27/21 04:58	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/27/21 04:58	1
Dibromofluoromethane (Surr)	99		75 - 123		05/27/21 04:58	1

Client Sample Results

Client: AECOM

Job ID: 480-185012-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-04D

Lab Sample ID: 480-185012-6

Date Collected: 05/19/21 16:39

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 15:03	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 15:03	1
Acetone	ND		10	3.0	ug/L			05/22/21 15:03	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 15:03	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 15:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		77 - 120		05/22/21 15:03	1
Toluene-d8 (Surr)	98		80 - 120		05/22/21 15:03	1
4-Bromofluorobenzene (Surr)	99		73 - 120		05/22/21 15:03	1
Dibromofluoromethane (Surr)	101		75 - 123		05/22/21 15:03	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/25/21 23:40	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/25/21 23:40	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/25/21 23:40	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/25/21 23:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	111		41 - 120	05/24/21 15:22	05/25/21 23:40	1
2-Fluorobiphenyl	112		48 - 120	05/24/21 15:22	05/25/21 23:40	1
2-Fluorophenol	81		35 - 120	05/24/21 15:22	05/25/21 23:40	1
Nitrobenzene-d5	108		46 - 120	05/24/21 15:22	05/25/21 23:40	1
Phenol-d5	61		22 - 120	05/24/21 15:22	05/25/21 23:40	1
p-Terphenyl-d14	73		60 - 148	05/24/21 15:22	05/25/21 23:40	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/24/21 23:50	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/24/21 23:50	1
Barium	0.091		0.0020	0.00070	mg/L		05/24/21 10:55	05/24/21 23:50	1
Cadmium	0.00051	J	0.0010	0.00050	mg/L		05/24/21 10:55	05/24/21 23:50	1
Chromium	0.0012	J	0.0040	0.0010	mg/L		05/24/21 10:55	05/24/21 23:50	1
Copper	ND		0.010	0.0016	mg/L		05/24/21 10:55	05/24/21 23:50	1
Iron	0.071		0.050	0.019	mg/L		05/24/21 10:55	05/24/21 23:50	1
Lead	ND		0.0050	0.0030	mg/L		05/24/21 10:55	05/24/21 23:50	1
Magnesium	74.3		0.20	0.043	mg/L		05/24/21 10:55	05/24/21 23:50	1
Manganese	0.019		0.0030	0.00040	mg/L		05/24/21 10:55	05/24/21 23:50	1
Nickel	ND		0.010	0.0013	mg/L		05/24/21 10:55	05/24/21 23:50	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/24/21 23:50	1
Sodium	97.5		1.0	0.32	mg/L		05/24/21 10:55	05/24/21 23:50	1
Zinc	0.017		0.010	0.0015	mg/L		05/24/21 10:55	05/24/21 23:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:05	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill GW Monitoring

Job ID: 480-185012-1

Client Sample ID: GW-04S

Lab Sample ID: 480-185012-7

Date Collected: 05/19/21 16:55

Matrix: Water

Date Received: 05/20/21 18:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/25/21 23:13	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/25/21 23:13	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/25/21 23:13	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/25/21 23:13	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	112		41 - 120				05/24/21 15:22	05/25/21 23:13	1
2-Fluorobiphenyl	112		48 - 120				05/24/21 15:22	05/25/21 23:13	1
2-Fluorophenol	86		35 - 120				05/24/21 15:22	05/25/21 23:13	1
Nitrobenzene-d5	109		46 - 120				05/24/21 15:22	05/25/21 23:13	1
Phenol-d5	63		22 - 120				05/24/21 15:22	05/25/21 23:13	1
p-Terphenyl-d14	96		60 - 148				05/24/21 15:22	05/25/21 23:13	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/26/21 17:25	05/27/21 20:04	1
Arsenic	ND		0.010	0.0056	mg/L		05/26/21 17:25	05/27/21 20:04	1
Barium	0.10		0.0020	0.00070	mg/L		05/26/21 17:25	05/27/21 20:04	1
Cadmium	0.00056	J	0.0010	0.00050	mg/L		05/26/21 17:25	05/27/21 20:04	1
Chromium	0.0040		0.0040	0.0010	mg/L		05/26/21 17:25	05/27/21 20:04	1
Copper	0.0020	J	0.010	0.0016	mg/L		05/26/21 17:25	05/27/21 20:04	1
Iron	0.95		0.050	0.019	mg/L		05/26/21 17:25	05/27/21 20:04	1
Lead	ND		0.0050	0.0030	mg/L		05/26/21 17:25	05/27/21 20:04	1
Magnesium	27.8		0.20	0.043	mg/L		05/26/21 17:25	05/27/21 20:04	1
Manganese	0.056		0.0030	0.00040	mg/L		05/26/21 17:25	05/27/21 20:04	1
Nickel	0.0034	J	0.010	0.0013	mg/L		05/26/21 17:25	05/27/21 20:04	1
Silver	ND		0.0030	0.0017	mg/L		05/26/21 17:25	05/27/21 20:04	1
Sodium	29.3		1.0	0.32	mg/L		05/26/21 17:25	05/27/21 20:04	1
Zinc	0.0046	J	0.010	0.0015	mg/L		05/26/21 17:25	05/27/21 20:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:06	1

Client Sample Results

Client: AECOM

Job ID: 480-185012-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-34S

Lab Sample ID: 480-185012-8

Date Collected: 05/20/21 08:35

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 15:26	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 15:26	1
Acetone	ND		10	3.0	ug/L			05/22/21 15:26	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 15:26	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 15:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		05/22/21 15:26	1
Toluene-d8 (Surr)	97		80 - 120		05/22/21 15:26	1
4-Bromofluorobenzene (Surr)	97		73 - 120		05/22/21 15:26	1
Dibromofluoromethane (Surr)	101		75 - 123		05/22/21 15:26	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/26/21 00:07	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/26/21 00:07	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/26/21 00:07	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/26/21 00:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	132	S1+	41 - 120	05/24/21 15:22	05/26/21 00:07	1
2-Fluorobiphenyl	118		48 - 120	05/24/21 15:22	05/26/21 00:07	1
2-Fluorophenol	82		35 - 120	05/24/21 15:22	05/26/21 00:07	1
Nitrobenzene-d5	101		46 - 120	05/24/21 15:22	05/26/21 00:07	1
Phenol-d5	59		22 - 120	05/24/21 15:22	05/26/21 00:07	1
p-Terphenyl-d14	91		60 - 148	05/24/21 15:22	05/26/21 00:07	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/24/21 23:54	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/24/21 23:54	1
Barium	0.15		0.0020	0.00070	mg/L		05/24/21 10:55	05/24/21 23:54	1
Cadmium	ND		0.0010	0.00050	mg/L		05/24/21 10:55	05/24/21 23:54	1
Chromium	ND		0.0040	0.0010	mg/L		05/24/21 10:55	05/24/21 23:54	1
Copper	ND		0.010	0.0016	mg/L		05/24/21 10:55	05/24/21 23:54	1
Iron	0.096		0.050	0.019	mg/L		05/24/21 10:55	05/24/21 23:54	1
Lead	ND		0.0050	0.0030	mg/L		05/24/21 10:55	05/24/21 23:54	1
Magnesium	37.6		0.20	0.043	mg/L		05/24/21 10:55	05/24/21 23:54	1
Manganese	0.66		0.0030	0.00040	mg/L		05/24/21 10:55	05/24/21 23:54	1
Nickel	0.0041	J	0.010	0.0013	mg/L		05/24/21 10:55	05/24/21 23:54	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/24/21 23:54	1
Sodium	23.2		1.0	0.32	mg/L		05/24/21 10:55	05/24/21 23:54	1
Zinc	ND		0.010	0.0015	mg/L		05/24/21 10:55	05/24/21 23:54	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:07	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM

Job ID: 480-185012-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-03D

Lab Sample ID: 480-185012-9

Date Collected: 05/20/21 10:11

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 15:49	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 15:49	1
Acetone	ND		10	3.0	ug/L			05/22/21 15:49	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 15:49	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 15:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		77 - 120		05/22/21 15:49	1
Toluene-d8 (Surr)	95		80 - 120		05/22/21 15:49	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/22/21 15:49	1
Dibromofluoromethane (Surr)	99		75 - 123		05/22/21 15:49	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	2.8	J	10	0.48	ug/L		05/24/21 15:22	05/26/21 00:34	1
1,4-Dichlorobenzene	3.7	J	10	0.46	ug/L		05/24/21 15:22	05/26/21 00:34	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/26/21 00:34	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/26/21 00:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	124	S1+	41 - 120	05/24/21 15:22	05/26/21 00:34	1
2-Fluorobiphenyl	116		48 - 120	05/24/21 15:22	05/26/21 00:34	1
2-Fluorophenol	93		35 - 120	05/24/21 15:22	05/26/21 00:34	1
Nitrobenzene-d5	115		46 - 120	05/24/21 15:22	05/26/21 00:34	1
Phenol-d5	69		22 - 120	05/24/21 15:22	05/26/21 00:34	1
p-Terphenyl-d14	92		60 - 148	05/24/21 15:22	05/26/21 00:34	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/25/21 00:09	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/25/21 00:09	1
Barium	0.081		0.0020	0.00070	mg/L		05/24/21 10:55	05/25/21 00:09	1
Cadmium	ND		0.0010	0.00050	mg/L		05/24/21 10:55	05/25/21 00:09	1
Chromium	ND		0.0040	0.0010	mg/L		05/24/21 10:55	05/25/21 00:09	1
Copper	ND		0.010	0.0016	mg/L		05/24/21 10:55	05/25/21 00:09	1
Iron	1.0		0.050	0.019	mg/L		05/24/21 10:55	05/25/21 00:09	1
Lead	ND		0.0050	0.0030	mg/L		05/24/21 10:55	05/25/21 00:09	1
Magnesium	16.4		0.20	0.043	mg/L		05/24/21 10:55	05/25/21 00:09	1
Manganese	0.24		0.0030	0.00040	mg/L		05/24/21 10:55	05/25/21 00:09	1
Nickel	0.0040	J	0.010	0.0013	mg/L		05/24/21 10:55	05/25/21 00:09	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/25/21 00:09	1
Sodium	183		1.0	0.32	mg/L		05/24/21 10:55	05/25/21 00:09	1
Zinc	0.0021	J	0.010	0.0015	mg/L		05/24/21 10:55	05/25/21 00:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:08	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM

Job ID: 480-185012-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-03S

Lab Sample ID: 480-185012-10

Date Collected: 05/20/21 11:04

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 16:12	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 16:12	1
Acetone	ND		10	3.0	ug/L			05/22/21 16:12	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 16:12	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 16:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		77 - 120		05/22/21 16:12	1
Toluene-d8 (Surr)	99		80 - 120		05/22/21 16:12	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/22/21 16:12	1
Dibromofluoromethane (Surr)	97		75 - 123		05/22/21 16:12	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/26/21 01:01	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/26/21 01:01	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/26/21 01:01	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/26/21 01:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	109		41 - 120	05/24/21 15:22	05/26/21 01:01	1
2-Fluorobiphenyl	113		48 - 120	05/24/21 15:22	05/26/21 01:01	1
2-Fluorophenol	81		35 - 120	05/24/21 15:22	05/26/21 01:01	1
Nitrobenzene-d5	104		46 - 120	05/24/21 15:22	05/26/21 01:01	1
Phenol-d5	57		22 - 120	05/24/21 15:22	05/26/21 01:01	1
p-Terphenyl-d14	86		60 - 148	05/24/21 15:22	05/26/21 01:01	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/25/21 00:13	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/25/21 00:13	1
Barium	0.086		0.0020	0.00070	mg/L		05/24/21 10:55	05/25/21 00:13	1
Cadmium	0.0011		0.0010	0.00050	mg/L		05/24/21 10:55	05/25/21 00:13	1
Chromium	0.0074		0.0040	0.0010	mg/L		05/24/21 10:55	05/25/21 00:13	1
Copper	ND		0.010	0.0016	mg/L		05/24/21 10:55	05/25/21 00:13	1
Iron	0.16		0.050	0.019	mg/L		05/24/21 10:55	05/25/21 00:13	1
Lead	ND		0.0050	0.0030	mg/L		05/24/21 10:55	05/25/21 00:13	1
Magnesium	76.9		0.20	0.043	mg/L		05/24/21 10:55	05/25/21 00:13	1
Manganese	0.099		0.0030	0.00040	mg/L		05/24/21 10:55	05/25/21 00:13	1
Nickel	0.051		0.010	0.0013	mg/L		05/24/21 10:55	05/25/21 00:13	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/25/21 00:13	1
Sodium	119		1.0	0.32	mg/L		05/24/21 10:55	05/25/21 00:13	1
Zinc	0.0099	J	0.010	0.0015	mg/L		05/24/21 10:55	05/25/21 00:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:10	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM

Job ID: 480-185012-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-07D

Lab Sample ID: 480-185012-11

Date Collected: 05/20/21 11:35

Matrix: Water

Date Received: 05/20/21 18:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/26/21 01:28	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/26/21 01:28	1
Bis(2-ethylhexyl) phthalate	22		5.0	2.2	ug/L		05/24/21 15:22	05/26/21 01:28	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/26/21 01:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	110		41 - 120	05/24/21 15:22	05/26/21 01:28	1
2-Fluorobiphenyl	100		48 - 120	05/24/21 15:22	05/26/21 01:28	1
2-Fluorophenol	76		35 - 120	05/24/21 15:22	05/26/21 01:28	1
Nitrobenzene-d5	97		46 - 120	05/24/21 15:22	05/26/21 01:28	1
Phenol-d5	57		22 - 120	05/24/21 15:22	05/26/21 01:28	1
p-Terphenyl-d14	69		60 - 148	05/24/21 15:22	05/26/21 01:28	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/25/21 00:16	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/25/21 00:16	1
Barium	0.12		0.0020	0.00070	mg/L		05/24/21 10:55	05/25/21 00:16	1
Cadmium	0.0031		0.0010	0.00050	mg/L		05/24/21 10:55	05/25/21 00:16	1
Chromium	0.98		0.0040	0.0010	mg/L		05/24/21 10:55	05/25/21 00:16	1
Copper	0.056		0.010	0.0016	mg/L		05/24/21 10:55	05/25/21 00:16	1
Iron	11.5		0.050	0.019	mg/L		05/24/21 10:55	05/25/21 00:16	1
Lead	0.18		0.0050	0.0030	mg/L		05/24/21 10:55	05/25/21 00:16	1
Magnesium	38.3		0.20	0.043	mg/L		05/24/21 10:55	05/25/21 00:16	1
Manganese	0.17		0.0030	0.00040	mg/L		05/24/21 10:55	05/25/21 00:16	1
Nickel	0.43		0.010	0.0013	mg/L		05/24/21 10:55	05/25/21 00:16	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/25/21 00:16	1
Sodium	85.2		1.0	0.32	mg/L		05/24/21 10:55	05/25/21 00:16	1
Zinc	0.088		0.010	0.0015	mg/L		05/24/21 10:55	05/25/21 00:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:14	1

Client Sample Results

Client: AECOM

Job ID: 480-185012-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-07S

Lab Sample ID: 480-185012-12

Date Collected: 05/20/21 12:00

Matrix: Water

Date Received: 05/20/21 18:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/26/21 01:55	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/26/21 01:55	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/26/21 01:55	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/26/21 01:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	126	S1+	41 - 120				05/24/21 15:22	05/26/21 01:55	1
2-Fluorobiphenyl	118		48 - 120				05/24/21 15:22	05/26/21 01:55	1
2-Fluorophenol	90		35 - 120				05/24/21 15:22	05/26/21 01:55	1
Nitrobenzene-d5	111		46 - 120				05/24/21 15:22	05/26/21 01:55	1
Phenol-d5	65		22 - 120				05/24/21 15:22	05/26/21 01:55	1
p-Terphenyl-d14	100		60 - 148				05/24/21 15:22	05/26/21 01:55	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/25/21 00:20	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/25/21 00:20	1
Barium	0.46		0.0020	0.00070	mg/L		05/24/21 10:55	05/25/21 00:20	1
Cadmium	ND		0.0010	0.00050	mg/L		05/24/21 10:55	05/25/21 00:20	1
Chromium	0.0014	J	0.0040	0.0010	mg/L		05/24/21 10:55	05/25/21 00:20	1
Copper	ND		0.010	0.0016	mg/L		05/24/21 10:55	05/25/21 00:20	1
Iron	0.10		0.050	0.019	mg/L		05/24/21 10:55	05/25/21 00:20	1
Lead	ND		0.0050	0.0030	mg/L		05/24/21 10:55	05/25/21 00:20	1
Magnesium	46.8		0.20	0.043	mg/L		05/24/21 10:55	05/25/21 00:20	1
Manganese	0.074		0.0030	0.00040	mg/L		05/24/21 10:55	05/25/21 00:20	1
Nickel	0.0080	J	0.010	0.0013	mg/L		05/24/21 10:55	05/25/21 00:20	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/25/21 00:20	1
Sodium	63.6		1.0	0.32	mg/L		05/24/21 10:55	05/25/21 00:20	1
Zinc	0.0045	J	0.010	0.0015	mg/L		05/24/21 10:55	05/25/21 00:20	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:15	1

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill GW Monitoring

Job ID: 480-185012-1

Client Sample ID: GW-08SR

Lab Sample ID: 480-185012-13

Date Collected: 05/20/21 13:41

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 16:35	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 16:35	1
Acetone	ND		10	3.0	ug/L			05/22/21 16:35	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 16:35	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 16:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		77 - 120		05/22/21 16:35	1
Toluene-d8 (Surr)	97		80 - 120		05/22/21 16:35	1
4-Bromofluorobenzene (Surr)	102		73 - 120		05/22/21 16:35	1
Dibromofluoromethane (Surr)	109		75 - 123		05/22/21 16:35	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/27/21 22:20	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/27/21 22:20	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/27/21 22:20	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/27/21 22:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	113		41 - 120	05/24/21 15:22	05/27/21 22:20	1
2-Fluorobiphenyl	112		48 - 120	05/24/21 15:22	05/27/21 22:20	1
2-Fluorophenol	90		35 - 120	05/24/21 15:22	05/27/21 22:20	1
Nitrobenzene-d5	112		46 - 120	05/24/21 15:22	05/27/21 22:20	1
Phenol-d5	65		22 - 120	05/24/21 15:22	05/27/21 22:20	1
p-Terphenyl-d14	90		60 - 148	05/24/21 15:22	05/27/21 22:20	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/25/21 00:24	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/25/21 00:24	1
Barium	0.099		0.0020	0.00070	mg/L		05/24/21 10:55	05/25/21 00:24	1
Cadmium	ND		0.0010	0.00050	mg/L		05/24/21 10:55	05/25/21 00:24	1
Chromium	0.0015	J	0.0040	0.0010	mg/L		05/24/21 10:55	05/25/21 00:24	1
Copper	ND		0.010	0.0016	mg/L		05/24/21 10:55	05/25/21 00:24	1
Iron	7.9		0.050	0.019	mg/L		05/24/21 10:55	05/25/21 00:24	1
Lead	ND		0.0050	0.0030	mg/L		05/24/21 10:55	05/25/21 00:24	1
Magnesium	47.3		0.20	0.043	mg/L		05/24/21 10:55	05/25/21 00:24	1
Manganese	0.59		0.0030	0.00040	mg/L		05/24/21 10:55	05/25/21 00:24	1
Nickel	0.0013	J	0.010	0.0013	mg/L		05/24/21 10:55	05/25/21 00:24	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/25/21 00:24	1
Sodium	160		1.0	0.32	mg/L		05/24/21 10:55	05/25/21 00:24	1
Zinc	0.0018	J	0.010	0.0015	mg/L		05/24/21 10:55	05/25/21 00:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:16	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill GW Monitoring

Job ID: 480-185012-1

Client Sample ID: GW-08D

Lab Sample ID: 480-185012-14

Date Collected: 05/20/21 14:57

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 16:58	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 16:58	1
Acetone	ND		10	3.0	ug/L			05/22/21 16:58	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 16:58	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 16:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		77 - 120		05/22/21 16:58	1
Toluene-d8 (Surr)	98		80 - 120		05/22/21 16:58	1
4-Bromofluorobenzene (Surr)	104		73 - 120		05/22/21 16:58	1
Dibromofluoromethane (Surr)	99		75 - 123		05/22/21 16:58	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/25/21 21:28	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/25/21 21:28	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/25/21 21:28	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/25/21 21:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	116		41 - 120	05/24/21 15:22	05/25/21 21:28	1
2-Fluorobiphenyl	112		48 - 120	05/24/21 15:22	05/25/21 21:28	1
2-Fluorophenol	75		35 - 120	05/24/21 15:22	05/25/21 21:28	1
Nitrobenzene-d5	94		46 - 120	05/24/21 15:22	05/25/21 21:28	1
Phenol-d5	54		22 - 120	05/24/21 15:22	05/25/21 21:28	1
p-Terphenyl-d14	82		60 - 148	05/24/21 15:22	05/25/21 21:28	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/25/21 00:28	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/25/21 00:28	1
Barium	0.069		0.0020	0.00070	mg/L		05/24/21 10:55	05/25/21 00:28	1
Cadmium	ND		0.0010	0.00050	mg/L		05/24/21 10:55	05/25/21 00:28	1
Chromium	0.038		0.0040	0.0010	mg/L		05/24/21 10:55	05/25/21 00:28	1
Copper	0.0028 J		0.010	0.0016	mg/L		05/24/21 10:55	05/25/21 00:28	1
Iron	0.50		0.050	0.019	mg/L		05/24/21 10:55	05/25/21 00:28	1
Lead	ND		0.0050	0.0030	mg/L		05/24/21 10:55	05/25/21 00:28	1
Magnesium	16.8		0.20	0.043	mg/L		05/24/21 10:55	05/25/21 00:28	1
Manganese	0.0085		0.0030	0.00040	mg/L		05/24/21 10:55	05/25/21 00:28	1
Nickel	0.011		0.010	0.0013	mg/L		05/24/21 10:55	05/25/21 00:28	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/25/21 00:28	1
Sodium	203		1.0	0.32	mg/L		05/24/21 10:55	05/25/21 00:28	1
Zinc	0.010		0.010	0.0015	mg/L		05/24/21 10:55	05/25/21 00:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:18	1

Client Sample Results

Client: AECOM

Job ID: 480-185012-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-26D

Lab Sample ID: 480-185012-15

Date Collected: 05/20/21 16:30

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 17:21	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 17:21	1
Acetone	ND		10	3.0	ug/L			05/22/21 17:21	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 17:21	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 17:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		05/22/21 17:21	1
Toluene-d8 (Surr)	99		80 - 120		05/22/21 17:21	1
4-Bromofluorobenzene (Surr)	103		73 - 120		05/22/21 17:21	1
Dibromofluoromethane (Surr)	98		75 - 123		05/22/21 17:21	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/27/21 22:46	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/27/21 22:46	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/27/21 22:46	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/27/21 22:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	106		41 - 120	05/24/21 15:22	05/27/21 22:46	1
2-Fluorobiphenyl	107		48 - 120	05/24/21 15:22	05/27/21 22:46	1
2-Fluorophenol	87		35 - 120	05/24/21 15:22	05/27/21 22:46	1
Nitrobenzene-d5	104		46 - 120	05/24/21 15:22	05/27/21 22:46	1
Phenol-d5	66		22 - 120	05/24/21 15:22	05/27/21 22:46	1
p-Terphenyl-d14	97		60 - 148	05/24/21 15:22	05/27/21 22:46	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/25/21 00:57	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/25/21 00:57	1
Barium	0.10		0.0020	0.00070	mg/L		05/24/21 10:55	05/25/21 00:57	1
Cadmium	ND		0.0010	0.00050	mg/L		05/24/21 10:55	05/25/21 00:57	1
Chromium	ND		0.0040	0.0010	mg/L		05/24/21 10:55	05/25/21 00:57	1
Copper	ND		0.010	0.0016	mg/L		05/24/21 10:55	05/25/21 00:57	1
Iron	1.8		0.050	0.019	mg/L		05/24/21 10:55	05/25/21 00:57	1
Lead	ND		0.0050	0.0030	mg/L		05/24/21 10:55	05/25/21 00:57	1
Magnesium	14.6		0.20	0.043	mg/L		05/24/21 10:55	05/25/21 00:57	1
Manganese	0.31		0.0030	0.00040	mg/L		05/24/21 10:55	05/25/21 00:57	1
Nickel	ND		0.010	0.0013	mg/L		05/24/21 10:55	05/25/21 00:57	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/25/21 00:57	1
Sodium	293		1.0	0.32	mg/L		05/24/21 10:55	05/25/21 00:57	1
Zinc	ND		0.010	0.0015	mg/L		05/24/21 10:55	05/25/21 00:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:23	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM

Job ID: 480-185012-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: FD-052021

Lab Sample ID: 480-185012-16

Date Collected: 05/20/21 00:00

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 17:44	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 17:44	1
Acetone	ND		10	3.0	ug/L			05/22/21 17:44	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 17:44	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 17:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		05/22/21 17:44	1
Toluene-d8 (Surr)	98		80 - 120		05/22/21 17:44	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/22/21 17:44	1
Dibromofluoromethane (Surr)	98		75 - 123		05/22/21 17:44	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/27/21 23:12	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/27/21 23:12	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/27/21 23:12	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/27/21 23:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	113		41 - 120	05/24/21 15:22	05/27/21 23:12	1
2-Fluorobiphenyl	112		48 - 120	05/24/21 15:22	05/27/21 23:12	1
2-Fluorophenol	88		35 - 120	05/24/21 15:22	05/27/21 23:12	1
Nitrobenzene-d5	110		46 - 120	05/24/21 15:22	05/27/21 23:12	1
Phenol-d5	67		22 - 120	05/24/21 15:22	05/27/21 23:12	1
p-Terphenyl-d14	95		60 - 148	05/24/21 15:22	05/27/21 23:12	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/25/21 01:01	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/25/21 01:01	1
Barium	0.10		0.0020	0.00070	mg/L		05/24/21 10:55	05/25/21 01:01	1
Cadmium	ND		0.0010	0.00050	mg/L		05/24/21 10:55	05/25/21 01:01	1
Chromium	ND		0.0040	0.0010	mg/L		05/24/21 10:55	05/25/21 01:01	1
Copper	ND		0.010	0.0016	mg/L		05/24/21 10:55	05/25/21 01:01	1
Iron	2.0		0.050	0.019	mg/L		05/24/21 10:55	05/25/21 01:01	1
Lead	ND		0.0050	0.0030	mg/L		05/24/21 10:55	05/25/21 01:01	1
Magnesium	14.7		0.20	0.043	mg/L		05/24/21 10:55	05/25/21 01:01	1
Manganese	0.32		0.0030	0.00040	mg/L		05/24/21 10:55	05/25/21 01:01	1
Nickel	ND		0.010	0.0013	mg/L		05/24/21 10:55	05/25/21 01:01	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/25/21 01:01	1
Sodium	296		1.0	0.32	mg/L		05/24/21 10:55	05/25/21 01:01	1
Zinc	ND		0.010	0.0015	mg/L		05/24/21 10:55	05/25/21 01:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:24	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill GW Monitoring

Job ID: 480-185012-1

Client Sample ID: GW-35S

Lab Sample ID: 480-185012-17

Date Collected: 05/20/21 17:24

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 18:07	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 18:07	1
Acetone	ND		10	3.0	ug/L			05/22/21 18:07	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 18:07	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 18:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		77 - 120		05/22/21 18:07	1
Toluene-d8 (Surr)	98		80 - 120		05/22/21 18:07	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/22/21 18:07	1
Dibromofluoromethane (Surr)	100		75 - 123		05/22/21 18:07	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/24/21 15:22	05/27/21 23:38	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/24/21 15:22	05/27/21 23:38	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/24/21 15:22	05/27/21 23:38	1
Phenol	ND		5.0	0.39	ug/L		05/24/21 15:22	05/27/21 23:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	81		41 - 120	05/24/21 15:22	05/27/21 23:38	1
2-Fluorobiphenyl	86		48 - 120	05/24/21 15:22	05/27/21 23:38	1
2-Fluorophenol	61		35 - 120	05/24/21 15:22	05/27/21 23:38	1
Nitrobenzene-d5	85		46 - 120	05/24/21 15:22	05/27/21 23:38	1
Phenol-d5	43		22 - 120	05/24/21 15:22	05/27/21 23:38	1
p-Terphenyl-d14	76		60 - 148	05/24/21 15:22	05/27/21 23:38	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/24/21 10:55	05/25/21 01:05	1
Arsenic	ND		0.010	0.0056	mg/L		05/24/21 10:55	05/25/21 01:05	1
Barium	0.089		0.0020	0.00070	mg/L		05/24/21 10:55	05/25/21 01:05	1
Cadmium	ND		0.0010	0.00050	mg/L		05/24/21 10:55	05/25/21 01:05	1
Chromium	ND		0.0040	0.0010	mg/L		05/24/21 10:55	05/25/21 01:05	1
Copper	ND		0.010	0.0016	mg/L		05/24/21 10:55	05/25/21 01:05	1
Iron	0.057		0.050	0.019	mg/L		05/24/21 10:55	05/25/21 01:05	1
Lead	ND		0.0050	0.0030	mg/L		05/24/21 10:55	05/25/21 01:05	1
Magnesium	22.9		0.20	0.043	mg/L		05/24/21 10:55	05/25/21 01:05	1
Manganese	0.16		0.0030	0.00040	mg/L		05/24/21 10:55	05/25/21 01:05	1
Nickel	ND		0.010	0.0013	mg/L		05/24/21 10:55	05/25/21 01:05	1
Silver	ND		0.0030	0.0017	mg/L		05/24/21 10:55	05/25/21 01:05	1
Sodium	2.8		1.0	0.32	mg/L		05/24/21 10:55	05/25/21 01:05	1
Zinc	0.0023 J		0.010	0.0015	mg/L		05/24/21 10:55	05/25/21 01:05	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/26/21 13:46	05/26/21 18:25	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill GW Monitoring

Job ID: 480-185012-1

Client Sample ID: TB-051921+052021

Lab Sample ID: 480-185012-18

Date Collected: 05/20/21 00:00

Matrix: Water

Date Received: 05/20/21 18:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/21 18:30	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/21 18:30	1
Acetone	ND		10	3.0	ug/L			05/22/21 18:30	1
Benzene	ND		1.0	0.41	ug/L			05/22/21 18:30	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/21 18:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		77 - 120		05/22/21 18:30	1
Toluene-d8 (Surr)	96		80 - 120		05/22/21 18:30	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/22/21 18:30	1
Dibromofluoromethane (Surr)	98		75 - 123		05/22/21 18:30	1

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-185117-1

Client Sample ID: GW-28S

Lab Sample ID: 480-185117-1

Date Collected: 05/21/21 08:13

Matrix: Water

Date Received: 05/21/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/23/21 17:19	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/23/21 17:19	1
Acetone	ND		10	3.0	ug/L			05/23/21 17:19	1
Benzene	ND		1.0	0.41	ug/L			05/23/21 17:19	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/23/21 17:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		77 - 120		05/23/21 17:19	1
Toluene-d8 (Surr)	96		80 - 120		05/23/21 17:19	1
4-Bromofluorobenzene (Surr)	97		73 - 120		05/23/21 17:19	1
Dibromofluoromethane (Surr)	99		75 - 123		05/23/21 17:19	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		11	0.52	ug/L		05/25/21 08:57	05/28/21 11:54	1
1,4-Dichlorobenzene	ND		11	0.50	ug/L		05/25/21 08:57	05/28/21 11:54	1
Bis(2-ethylhexyl) phthalate	ND		5.4	2.4	ug/L		05/25/21 08:57	05/28/21 11:54	1
Phenol	ND		5.4	0.42	ug/L		05/25/21 08:57	05/28/21 11:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	112		41 - 120	05/25/21 08:57	05/28/21 11:54	1
2-Fluorobiphenyl	109		48 - 120	05/25/21 08:57	05/28/21 11:54	1
2-Fluorophenol	76		35 - 120	05/25/21 08:57	05/28/21 11:54	1
Nitrobenzene-d5	98		46 - 120	05/25/21 08:57	05/28/21 11:54	1
Phenol-d5	58		22 - 120	05/25/21 08:57	05/28/21 11:54	1
p-Terphenyl-d14	99		60 - 148	05/25/21 08:57	05/28/21 11:54	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/21 09:45	05/27/21 23:25	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/21 09:45	05/27/21 23:25	1
Barium	0.075		0.0020	0.00070	mg/L		05/27/21 09:45	05/27/21 23:25	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/21 09:45	05/27/21 23:25	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/21 09:45	05/27/21 23:25	1
Copper	0.0025	J	0.010	0.0016	mg/L		05/27/21 09:45	05/27/21 23:25	1
Iron	0.11		0.050	0.019	mg/L		05/27/21 09:45	05/27/21 23:25	1
Lead	ND		0.0050	0.0030	mg/L		05/27/21 09:45	05/27/21 23:25	1
Magnesium	25.0		0.20	0.043	mg/L		05/27/21 09:45	05/27/21 23:25	1
Manganese	0.81		0.0030	0.00040	mg/L		05/27/21 09:45	05/27/21 23:25	1
Nickel	ND		0.010	0.0013	mg/L		05/27/21 09:45	05/27/21 23:25	1
Silver	ND		0.0030	0.0017	mg/L		05/27/21 09:45	05/27/21 23:25	1
Sodium	8.3		1.0	0.32	mg/L		05/27/21 09:45	05/27/21 23:25	1
Zinc	0.0020	J	0.010	0.0015	mg/L		05/27/21 09:45	05/27/21 23:25	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/25/21 13:34	05/25/21 18:33	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-185117-1

Client Sample ID: GW-29S

Lab Sample ID: 480-185117-2

Date Collected: 05/21/21 09:30

Matrix: Water

Date Received: 05/21/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/23/21 17:42	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/23/21 17:42	1
Acetone	ND		10	3.0	ug/L			05/23/21 17:42	1
Benzene	ND		1.0	0.41	ug/L			05/23/21 17:42	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/23/21 17:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		77 - 120		05/23/21 17:42	1
Toluene-d8 (Surr)	97		80 - 120		05/23/21 17:42	1
4-Bromofluorobenzene (Surr)	97		73 - 120		05/23/21 17:42	1
Dibromofluoromethane (Surr)	105		75 - 123		05/23/21 17:42	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.50	ug/L		05/25/21 08:57	05/28/21 12:21	1
1,4-Dichlorobenzene	ND		10	0.48	ug/L		05/25/21 08:57	05/28/21 12:21	1
Bis(2-ethylhexyl) phthalate	ND		5.2	2.3	ug/L		05/25/21 08:57	05/28/21 12:21	1
Phenol	ND		5.2	0.41	ug/L		05/25/21 08:57	05/28/21 12:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	103		41 - 120	05/25/21 08:57	05/28/21 12:21	1
2-Fluorobiphenyl	95		48 - 120	05/25/21 08:57	05/28/21 12:21	1
2-Fluorophenol	66		35 - 120	05/25/21 08:57	05/28/21 12:21	1
Nitrobenzene-d5	86		46 - 120	05/25/21 08:57	05/28/21 12:21	1
Phenol-d5	51		22 - 120	05/25/21 08:57	05/28/21 12:21	1
p-Terphenyl-d14	78		60 - 148	05/25/21 08:57	05/28/21 12:21	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/21 09:45	05/27/21 23:43	1
Arsenic	0.020		0.010	0.0056	mg/L		05/27/21 09:45	05/27/21 23:43	1
Barium	0.18		0.0020	0.00070	mg/L		05/27/21 09:45	05/27/21 23:43	1
Cadmium	0.00052	J	0.0010	0.00050	mg/L		05/27/21 09:45	05/27/21 23:43	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/21 09:45	05/27/21 23:43	1
Copper	ND		0.010	0.0016	mg/L		05/27/21 09:45	05/27/21 23:43	1
Iron	12.5		0.050	0.019	mg/L		05/27/21 09:45	05/27/21 23:43	1
Lead	0.0030	J	0.0050	0.0030	mg/L		05/27/21 09:45	05/27/21 23:43	1
Magnesium	62.7		0.20	0.043	mg/L		05/27/21 09:45	05/27/21 23:43	1
Manganese	0.59		0.0030	0.00040	mg/L		05/27/21 09:45	05/27/21 23:43	1
Nickel	ND		0.010	0.0013	mg/L		05/27/21 09:45	05/27/21 23:43	1
Silver	ND		0.0030	0.0017	mg/L		05/27/21 09:45	05/27/21 23:43	1
Sodium	9.4		1.0	0.32	mg/L		05/27/21 09:45	05/27/21 23:43	1
Zinc	ND		0.010	0.0015	mg/L		05/27/21 09:45	05/27/21 23:43	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/25/21 13:34	05/25/21 18:35	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-185117-1

Client Sample ID: GW-30S

Lab Sample ID: 480-185117-3

Date Collected: 05/21/21 10:23

Matrix: Water

Date Received: 05/21/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/23/21 18:05	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/23/21 18:05	1
Acetone	ND		10	3.0	ug/L			05/23/21 18:05	1
Benzene	ND		1.0	0.41	ug/L			05/23/21 18:05	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/23/21 18:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		05/23/21 18:05	1
Toluene-d8 (Surr)	95		80 - 120		05/23/21 18:05	1
4-Bromofluorobenzene (Surr)	100		73 - 120		05/23/21 18:05	1
Dibromofluoromethane (Surr)	97		75 - 123		05/23/21 18:05	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.50	ug/L		05/25/21 08:57	05/28/21 12:49	1
1,4-Dichlorobenzene	ND		10	0.48	ug/L		05/25/21 08:57	05/28/21 12:49	1
Bis(2-ethylhexyl) phthalate	ND		5.2	2.3	ug/L		05/25/21 08:57	05/28/21 12:49	1
Phenol	ND		5.2	0.41	ug/L		05/25/21 08:57	05/28/21 12:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	114		41 - 120	05/25/21 08:57	05/28/21 12:49	1
2-Fluorobiphenyl	112		48 - 120	05/25/21 08:57	05/28/21 12:49	1
2-Fluorophenol	81		35 - 120	05/25/21 08:57	05/28/21 12:49	1
Nitrobenzene-d5	100		46 - 120	05/25/21 08:57	05/28/21 12:49	1
Phenol-d5	60		22 - 120	05/25/21 08:57	05/28/21 12:49	1
p-Terphenyl-d14	93		60 - 148	05/25/21 08:57	05/28/21 12:49	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/21 09:45	05/27/21 23:47	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/21 09:45	05/27/21 23:47	1
Barium	0.14		0.0020	0.00070	mg/L		05/27/21 09:45	05/27/21 23:47	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/21 09:45	05/27/21 23:47	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/21 09:45	05/27/21 23:47	1
Copper	ND		0.010	0.0016	mg/L		05/27/21 09:45	05/27/21 23:47	1
Iron	8.4		0.050	0.019	mg/L		05/27/21 09:45	05/27/21 23:47	1
Lead	ND		0.0050	0.0030	mg/L		05/27/21 09:45	05/27/21 23:47	1
Magnesium	31.2		0.20	0.043	mg/L		05/27/21 09:45	05/27/21 23:47	1
Manganese	1.1		0.0030	0.00040	mg/L		05/27/21 09:45	05/27/21 23:47	1
Nickel	ND		0.010	0.0013	mg/L		05/27/21 09:45	05/27/21 23:47	1
Silver	ND		0.0030	0.0017	mg/L		05/27/21 09:45	05/27/21 23:47	1
Sodium	104		1.0	0.32	mg/L		05/27/21 09:45	05/27/21 23:47	1
Zinc	0.26		0.010	0.0015	mg/L		05/27/21 09:45	05/27/21 23:47	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/25/21 13:34	05/25/21 18:42	1

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-185117-1

Client Sample ID: GW-31S

Lab Sample ID: 480-185117-4

Date Collected: 05/21/21 11:30

Matrix: Water

Date Received: 05/21/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/23/21 18:28	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/23/21 18:28	1
Acetone	ND		10	3.0	ug/L			05/23/21 18:28	1
Benzene	ND		1.0	0.41	ug/L			05/23/21 18:28	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/23/21 18:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		77 - 120		05/23/21 18:28	1
Toluene-d8 (Surr)	97		80 - 120		05/23/21 18:28	1
4-Bromofluorobenzene (Surr)	100		73 - 120		05/23/21 18:28	1
Dibromofluoromethane (Surr)	103		75 - 123		05/23/21 18:28	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/25/21 08:57	05/29/21 02:45	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/25/21 08:57	05/29/21 02:45	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/25/21 08:57	05/29/21 02:45	1
Phenol	ND		5.0	0.39	ug/L		05/25/21 08:57	05/29/21 02:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	109		41 - 120	05/25/21 08:57	05/29/21 02:45	1
2-Fluorobiphenyl	110		48 - 120	05/25/21 08:57	05/29/21 02:45	1
2-Fluorophenol	74		35 - 120	05/25/21 08:57	05/29/21 02:45	1
Nitrobenzene-d5	102		46 - 120	05/25/21 08:57	05/29/21 02:45	1
Phenol-d5	56		22 - 120	05/25/21 08:57	05/29/21 02:45	1
p-Terphenyl-d14	92		60 - 148	05/25/21 08:57	05/29/21 02:45	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/21 09:45	05/27/21 23:51	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/21 09:45	05/27/21 23:51	1
Barium	0.085		0.0020	0.00070	mg/L		05/27/21 09:45	05/27/21 23:51	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/21 09:45	05/27/21 23:51	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/21 09:45	05/27/21 23:51	1
Copper	ND		0.010	0.0016	mg/L		05/27/21 09:45	05/27/21 23:51	1
Iron	4.3		0.050	0.019	mg/L		05/27/21 09:45	05/27/21 23:51	1
Lead	ND		0.0050	0.0030	mg/L		05/27/21 09:45	05/27/21 23:51	1
Magnesium	25.0		0.20	0.043	mg/L		05/27/21 09:45	05/27/21 23:51	1
Manganese	0.65		0.0030	0.00040	mg/L		05/27/21 09:45	05/27/21 23:51	1
Nickel	ND		0.010	0.0013	mg/L		05/27/21 09:45	05/27/21 23:51	1
Silver	ND		0.0030	0.0017	mg/L		05/27/21 09:45	05/27/21 23:51	1
Sodium	2.4		1.0	0.32	mg/L		05/27/21 09:45	05/27/21 23:51	1
Zinc	0.0027 J		0.010	0.0015	mg/L		05/27/21 09:45	05/27/21 23:51	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/25/21 13:34	05/25/21 18:44	1

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-185117-1

Client Sample ID: GW-32S

Lab Sample ID: 480-185117-5

Date Collected: 05/21/21 12:35

Matrix: Water

Date Received: 05/21/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/23/21 18:51	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/23/21 18:51	1
Acetone	ND		10	3.0	ug/L			05/23/21 18:51	1
Benzene	ND		1.0	0.41	ug/L			05/23/21 18:51	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/23/21 18:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		77 - 120		05/23/21 18:51	1
Toluene-d8 (Surr)	98		80 - 120		05/23/21 18:51	1
4-Bromofluorobenzene (Surr)	102		73 - 120		05/23/21 18:51	1
Dibromofluoromethane (Surr)	109		75 - 123		05/23/21 18:51	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		11	0.52	ug/L		05/25/21 08:57	05/29/21 03:12	1
1,4-Dichlorobenzene	ND		11	0.50	ug/L		05/25/21 08:57	05/29/21 03:12	1
Bis(2-ethylhexyl) phthalate	ND		5.4	2.4	ug/L		05/25/21 08:57	05/29/21 03:12	1
Phenol	ND		5.4	0.42	ug/L		05/25/21 08:57	05/29/21 03:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	101		41 - 120	05/25/21 08:57	05/29/21 03:12	1
2-Fluorobiphenyl	105		48 - 120	05/25/21 08:57	05/29/21 03:12	1
2-Fluorophenol	76		35 - 120	05/25/21 08:57	05/29/21 03:12	1
Nitrobenzene-d5	97		46 - 120	05/25/21 08:57	05/29/21 03:12	1
Phenol-d5	58		22 - 120	05/25/21 08:57	05/29/21 03:12	1
p-Terphenyl-d14	100		60 - 148	05/25/21 08:57	05/29/21 03:12	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/21 09:45	05/28/21 00:05	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/21 09:45	05/28/21 00:05	1
Barium	0.053		0.0020	0.00070	mg/L		05/27/21 09:45	05/28/21 00:05	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/21 09:45	05/28/21 00:05	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/21 09:45	05/28/21 00:05	1
Copper	ND		0.010	0.0016	mg/L		05/27/21 09:45	05/28/21 00:05	1
Iron	0.023	J	0.050	0.019	mg/L		05/27/21 09:45	05/28/21 00:05	1
Lead	ND		0.0050	0.0030	mg/L		05/27/21 09:45	05/28/21 00:05	1
Magnesium	27.7		0.20	0.043	mg/L		05/27/21 09:45	05/28/21 00:05	1
Manganese	0.37		0.0030	0.00040	mg/L		05/27/21 09:45	05/28/21 00:05	1
Nickel	ND		0.010	0.0013	mg/L		05/27/21 09:45	05/28/21 00:05	1
Silver	ND		0.0030	0.0017	mg/L		05/27/21 09:45	05/28/21 00:05	1
Sodium	2.7		1.0	0.32	mg/L		05/27/21 09:45	05/28/21 00:05	1
Zinc	0.0030	J	0.010	0.0015	mg/L		05/27/21 09:45	05/28/21 00:05	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/25/21 13:34	05/25/21 18:45	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-185117-1

Client Sample ID: GW-33S

Lab Sample ID: 480-185117-6

Date Collected: 05/21/21 13:36

Matrix: Water

Date Received: 05/21/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/23/21 19:14	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/23/21 19:14	1
Acetone	ND		10	3.0	ug/L			05/23/21 19:14	1
Benzene	ND		1.0	0.41	ug/L			05/23/21 19:14	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/23/21 19:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		05/23/21 19:14	1
Toluene-d8 (Surr)	95		80 - 120		05/23/21 19:14	1
4-Bromofluorobenzene (Surr)	97		73 - 120		05/23/21 19:14	1
Dibromofluoromethane (Surr)	100		75 - 123		05/23/21 19:14	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		11	0.52	ug/L		05/25/21 08:57	05/29/21 07:45	1
1,4-Dichlorobenzene	ND		11	0.50	ug/L		05/25/21 08:57	05/29/21 07:45	1
Bis(2-ethylhexyl) phthalate	ND		5.4	2.4	ug/L		05/25/21 08:57	05/29/21 07:45	1
Phenol	ND		5.4	0.42	ug/L		05/25/21 08:57	05/29/21 07:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	98		41 - 120	05/25/21 08:57	05/29/21 07:45	1
2-Fluorobiphenyl	100		48 - 120	05/25/21 08:57	05/29/21 07:45	1
2-Fluorophenol	74		35 - 120	05/25/21 08:57	05/29/21 07:45	1
Nitrobenzene-d5	92		46 - 120	05/25/21 08:57	05/29/21 07:45	1
Phenol-d5	54		22 - 120	05/25/21 08:57	05/29/21 07:45	1
p-Terphenyl-d14	91		60 - 148	05/25/21 08:57	05/29/21 07:45	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/21 09:45	05/28/21 00:09	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/21 09:45	05/28/21 00:09	1
Barium	0.044		0.0020	0.00070	mg/L		05/27/21 09:45	05/28/21 00:09	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/21 09:45	05/28/21 00:09	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/21 09:45	05/28/21 00:09	1
Copper	ND		0.010	0.0016	mg/L		05/27/21 09:45	05/28/21 00:09	1
Iron	0.027	J	0.050	0.019	mg/L		05/27/21 09:45	05/28/21 00:09	1
Lead	ND		0.0050	0.0030	mg/L		05/27/21 09:45	05/28/21 00:09	1
Magnesium	24.2		0.20	0.043	mg/L		05/27/21 09:45	05/28/21 00:09	1
Manganese	0.044		0.0030	0.00040	mg/L		05/27/21 09:45	05/28/21 00:09	1
Nickel	ND		0.010	0.0013	mg/L		05/27/21 09:45	05/28/21 00:09	1
Silver	ND		0.0030	0.0017	mg/L		05/27/21 09:45	05/28/21 00:09	1
Sodium	2.1		1.0	0.32	mg/L		05/27/21 09:45	05/28/21 00:09	1
Zinc	ND		0.010	0.0015	mg/L		05/27/21 09:45	05/28/21 00:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/25/21 13:34	05/25/21 18:46	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-185117-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 480-185117-7

Date Collected: 05/21/21 00:00

Matrix: Water

Date Received: 05/21/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/23/21 19:37	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/23/21 19:37	1
Acetone	ND		10	3.0	ug/L			05/23/21 19:37	1
Benzene	ND		1.0	0.41	ug/L			05/23/21 19:37	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/23/21 19:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		77 - 120		05/23/21 19:37	1
Toluene-d8 (Surr)	94		80 - 120		05/23/21 19:37	1
4-Bromofluorobenzene (Surr)	97		73 - 120		05/23/21 19:37	1
Dibromofluoromethane (Surr)	100		75 - 123		05/23/21 19:37	1

APPENDIX B

SUPPORT DOCUMENTATION

Chain of Custody Record

Client Information Client Contact: <u>Mr. Ann Marie Kropovitch</u> Company: <u>AECOM</u> Address: <u>257 West Genesee Street Suite 400</u> City: <u>Buffalo</u> State: <u>NY</u> Zip: <u>14202-2867</u> Phone: _____ Email: <u>ann.maria.kropovitch@aecom.com</u> Project Name: <u>Flohl Brothers Landfill GW Monitoring</u> Site: _____		Supplier: <u>Lab Muehl / Ann Marie Kropovitch</u> Phone: <u>716-903-1946</u> Lab P/N: <u>Schove, John R</u> E-Mail: <u>John.Schove@Eurofins.com</u>		Carrier Tracking Note: _____ Date of Origin: _____ Job #: _____		COC No: <u>480-180732-13273.1</u> Page: <u>Page 1 of 2</u> Job #: _____	
Analysis Requested Due Date Requested: _____ TAT Requested (days): <u>5 Days</u> Compliance Project: <u>Yes</u> ☐ No ☐				Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHCO ₃ M - Hexane N - None O - AsHClO ₂ P - NaOAc Q - Na ₂ CO ₃ R - Na ₂ SO ₃ S - H ₂ SO ₄ T - TSP Dodecylsulfate U - Acetone V - HClAA W - pH 4.5 Z - other (specify) _____			
Sample Identification Sample Date: _____ Sample Time: _____ Sample Type (G=grab, P=pour, S=sieve, L=leachate, O=other): _____ Matrix (specify): _____ Field Filtered Sample (Yes or No): _____		Sample Date: _____ Sample Time: _____ Sample Type (G=grab, P=pour, S=sieve, L=leachate, O=other): _____ Matrix (specify): _____ Field Filtered Sample (Yes or No): _____		Sample Date: _____ Sample Time: _____ Sample Type (G=grab, P=pour, S=sieve, L=leachate, O=other): _____ Matrix (specify): _____ Field Filtered Sample (Yes or No): _____		Sample Date: _____ Sample Time: _____ Sample Type (G=grab, P=pour, S=sieve, L=leachate, O=other): _____ Matrix (specify): _____ Field Filtered Sample (Yes or No): _____	
GW-07D GW-07S GW-01D GW-01S GW-04S GW-04D GW-04S GW-03D GW-03S GW-07D		5/19/21 0955 5/19/21 1000 5/19/21 1338 5/19/21 1425 5/19/21 1502 5/19/21 1639 5/19/21 1655 5/20/21 0835 5/20/21 1011 5/20/21 1104 5/20/21 1135		G G G G G G G G G G		Water Water Water Water Water Water Water Water Water Water	
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological		Deliverable Requested: I, II, III, IV, Other (specify) _____		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months		Special Instructions/Notes: _____	
Empty Kit Relinquished by: _____ Relinquished by: _____ Relinquished by: _____ Relinquished by: _____				Date: _____ Time: _____ Date: _____ Time: _____ Date: _____ Time: _____ Date: _____ Time: _____			
Custody Seal Intact: ☒ Yes ☐ No		Custody Seal No.: _____		Cooler Temperature(s) °C and Other Remarks: <u>3.3, 3.6, 3.1 #1</u>		Ver: 11/01/2020	

Chain of Custody Record

[illegible]

Case Narrative

Client: AECOM
Project/Site: Pfohl Brothers Landfill GW Monitoring

Job ID: 480-185012-1

Job ID: 480-185012-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-185012-1

Comments

No additional comments.

Receipt

The samples were received on 5/20/2021 6:30 PM. 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 3.1° C, 3.3° C and 3.6° C.

GC/MS VOA

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

GC/MS Semi VOA

Method 8270D: Six surrogates are used for this analysis. The laboratory's SOP allows one acid and one base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: GW-34S (480-185012-8), GW-03D (480-185012-9) and GW-07S (480-185012-12). These results have been reported and qualified.

Method 8270D: The continuing calibration verification (CCV) analyzed in batch 480-582565 was outside the method criteria for the following analyte(s): Phenol-d5 (Surr) and 2,4,6-Tribromophenol. 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 8270D: The continuing calibration verification (CCV) associated with batch 480-582565 recovered above the upper control limit for Phenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: GW-01D (480-185012-3), GW-01S (480-185012-4), GW-04D (480-185012-6), GW-04S (480-185012-7), GW-34S (480-185012-8), GW-03D (480-185012-9), GW-03S (480-185012-10), GW-07D (480-185012-11), GW-07S (480-185012-12) and GW-08D (480-185012-14).

Method 8270D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 480-582383 and analytical batch 480-582565 recovered outside control limits for the following surrogate: 2,4,6-Tribromophenol. This surrogate is biased high and detections were found for associated analyte(s) in the following affected samples: GW-07D (480-185012-11). Spike recoveries were within control limits. Therefore, the data has been reported. GW-07D (480-185012-11)

Method 8270D: The laboratory control sample (LCS) for preparation batch 480-582383 and analytical batch 480-582565 recovered outside control limits for the following surrogate: 2,4,6-Tribromophenol. This surrogate is biased high and no detections were found for associated analytes in the following affected samples: GW-01D (480-185012-3), GW-01S (480-185012-4), GW-04D (480-185012-6), GW-04S (480-185012-7), GW-34S (480-185012-8), GW-03D (480-185012-9), GW-03S (480-185012-10), GW-07S (480-185012-12) and GW-08D (480-185012-14). Therefore, the data has been reported. GW-01D (480-185012-3), GW-01S (480-185012-4), GW-04D (480-185012-6), GW-04S (480-185012-7), GW-34S (480-185012-8), GW-03D (480-185012-9), GW-03S (480-185012-10), GW-07S (480-185012-12) and GW-08D (480-185012-14)

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

Metals

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

Organic Prep

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

Ver: 11:01/2020

Case Narrative

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-185117-1

Job ID: 480-185117-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-185117-1

Comments

No additional comments.

Receipt

The samples were received on 5/21/2021 2:50 PM. 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 was 3.3° C.

GC/MS VOA

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

GC/MS Semi VOA

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

Metals

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

Organic Prep

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 480-582491.

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

ATTACHMENT B

July 2021 – December 2021

Semiannual Report

And

Data Applicability Report

**SEMIANNUAL REPORT
OPERATION AND MAINTENANCE
JULY 2021 TO DECEMBER 2021
PFOHL BROTHERS LANDFILL
CHEEKTOWAGA, NY**

Submitted to:

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
270 MICHIGAN AVENUE
BUFFALO, NEW YORK 14203**

Prepared by:

**URS CORPORATION
1 JOHN JAMES AUDUBON PARKWAY, SUITE 210
AMHERST, NEW YORK 14228**

Prepared for:

**TOWN OF CHEEKTOWAGA
ENGINEERING DEPARTMENT
275 ALEXANDER AVE
CHEEKTOWAGA, NEW YORK 14211**

**APRIL
2022**

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TABLES

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FIGURES

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APPENDICES

Appendix A	Example Daily Inspection Sheets
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Appendix D	Groundwater Purge and Sample Collection Logs
Appendix E	Groundwater Trend Analysis
Appendix F	BSA Permit 19-04-CH016
Appendix G	Discharge Report Summary Tables
Appendix H	Monitoring Well Inspection Logs

1.0 INTRODUCTION

1.1 Background

The Pfohl Brothers Landfill is located on Aero Drive in the Town of Cheektowaga, New York (Figure 1-1). The site is listed as Site No. 915043 on the New York State Department of Environmental Conservation's (NYSDEC's) Registry of Inactive Hazardous Waste Disposal Sites. A Consent Order between NYSDEC and potentially responsible parties (PRPs) for closure of the site was signed in 2001 and remedial construction commenced in 2001. The remedy included consolidation of waste material, capping of the waste disposal and consolidation areas, and encircling the landfill areas with a groundwater collection system to prevent off-site migration. The remedial action was completed in 2002.

Responsibility for implementing the remedy was divided between a "steering committee" of industrial PRPs and the Town of Cheektowaga. The steering committee responsibilities lay generally with the capital construction activities of the remedy including waste consolidation, cap and drainage system installation, etc. The Town of Cheektowaga, which was named as a PRP for disposal of municipal waste at the Pfohl Brothers Landfill when it was operating, is performing the operation and maintenance (O&M) activities at the landfill, pursuant to a settlement agreement between the Town and the steering committee.

1.2 Operation and Maintenance Activities

While construction of the remedy was substantially complete by late 2002, the final O&M Plan which was issued as draft in 2002, was not approved by the NYSDEC until March 10, 2006. However, the Town of Cheektowaga and its consultant (URS Corporation – New York (URS)) assumed most of the operational responsibilities since 2002. This includes a variety of general maintenance activities as outlined in Section 2 and sampling and other monitoring activities outlined in Section 3.

Beginning in 2004, the Town and URS assumed all of the O&M activities described in the O&M Plan. This is the Semiannual Report as called for by Section 3.6 of the O&M Plan.

2.0 GENERAL MAINTENANCE ACTIVITIES

Since completion of construction activities in 2002, personnel from the Town of Cheektowaga Engineering Department have performed general activities to ensure the physical operation of the landfill as intended by the design. The various O&M activities performed by the Town from July through December 2021 included the following actions:

- Recorded the amount of groundwater discharged through the collection system daily. The flow rate displayed by each wet well pump at the time of daily inspection and the total cumulative volume of flow was recorded for each wet well on daily inspection sheets. A few examples of the daily inspection sheet for this reporting period are attached in Appendix A.
- Summarized total cumulative effluent flow rates and volumes on a monthly basis. The monthly totals for the period, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- Shut down the wet well pumps during wet weather flow conditions as necessary at various times throughout the year. Such actions were only taken upon request of the Buffalo Sewer Authority (BSA) during heavy storm events in order to reduce the hydraulic load on the BSA treatment system during such events. Shutdown events are recorded and included with the monthly flow data in Appendix B as previously requested by NYSDEC.
- Cleaned/replaced check valves as necessary at all six (6) wet wells and replaced surge suppressors and fuses as needed for pump station instrumentation equipment.
- Inspected wet wells for excessive corrosion to critical equipment.
- Cleaned upper level equipment and applied corrosion inhibitor fluid.
- Performed bimonthly site/security check, data retrieval, and analysis.
- Repaired issue with the supervisory control and data acquisition (SCADA) system which malfunctioned due to numerous power failures.
- Verizon completed digital phone service upgrades
- Annual flow totals were collected and the totalizer equipment was reset.

- Contractor mowed entire cap and trimmed along the perimeter fence.
- Replaced discharge hose coupling in wet well WW-6.
- Monthly roadside trash removal was completed along Aero Drive.
- Plowed snow to access the Control Building when necessary.

3.0 MONITORING ACTIVITIES

The Town of Cheektowaga retained URS to perform monitoring activities as outlined in Section 3.1 of the O&M Plan. During the period of January 2004 through the present, groundwater hydraulic monitoring (Section 3.1.1.2 of the O&M Plan) and effluent monitoring (Section 3.1.4 of the O&M Plan) was performed on a quarterly basis. Semi-annual groundwater quality monitoring (Section 3.1.1.3 of the O&M Plan) was performed during this reporting period (i.e, July through December 2021). A summary of the monitoring activities is presented in the following subsections. Hydraulic and groundwater sampling locations are shown on Figure 3-1.

3.1 Groundwater Hydraulic Monitoring

Groundwater and surface water elevations were monitored on a quarterly basis at all locations listed in Table 3.1 of the O&M Plan. The hydraulic monitoring data tables showing groundwater elevations are presented in Appendix C. In Appendix C, Table C-1 lists the measured elevations and Table C-2 provides a comparison of the measured levels in the wells and corresponding manholes/wet wells.

The data presented in Appendix C indicate that groundwater levels outside the collection system were higher than the levels measured in the corresponding wet well or manhole for each measurement date. This demonstrates that the collection system is operating as designed.

3.2 Groundwater Quality Monitoring

This semi-annual round of groundwater sampling was conducted between November 22 and 24, 2021. Overburden and bedrock wells listed in Table 3.2 of the O&M Plan were purged and sampled using dedicated/disposable equipment. Figure 3-1 shows the well locations. Low flow sampling techniques were used with the exceptions noted below.

Passive diffusion bags (PDBs) were placed in three monitoring wells with low recharge rates (GW-04S, GW-07S, and GW-07D) on September 16, 2021. The PDBs were removed from the wells during the November 2021 sampling event, and the water was poured into the appropriate sample containers for analysis of volatile organic compounds (VOCs). Following removal of the PDBs, the three wells were purged dry. Field water quality parameters (i.e., pH, specific conductivity, temperature, dissolved oxygen, oxidation reduction potential, and turbidity) were

measured during the purging process. The other required analytical parameters (i.e., semivolatile organic compounds [SVOCs] and metals) were collected after water levels recovered (the next day for monitoring wells GW-07D and GW-07S and later the same day for monitoring well GW-04S).

Purge logs and sampling summary sheets with water quality measurements are provided in Appendix D. Following collection, the samples were packed with ice in coolers and transported under chain-of-custody control to Eurofins TestAmerica Laboratories of Amherst, New York.

The groundwater samples were analyzed for the VOCs, SVOCs, and metals listed in Table 3.2 of the O&M Plan as revised in accordance with Table 3-6 in the Semiannual Report dated September 2007 (January through June 2007) and as approved by the December 6, 2006 and November 29, 2007 correspondence from the NYSDEC authorizing a reduction in the parameters list (included as Table 3-1 in this report).

Laboratory Report

The groundwater analytical data package was prepared by Eurofins TestAmerica in accordance with NYSDEC Category A deliverable requirements. A limited data review was performed by a URS chemist in accordance with the following United States Environmental Protection Agency (USEPA) guidelines:

- *Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B & 8260C, SOP HW-24, Rev. 4, October 2014;*
- *Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8270D, SOP HW-22, Rev. 5, December 2010;*
- *ICP-AES Data Validation, SOP HW-3a, Rev. 1, September 2016; and*
- *Mercury and Cyanide Data Validation, SOP HW-3c, Rev. 1, September 2016.*

Qualifications applied to the data include “J” (estimated concentration) and “U” (not detected).

URS prepared a Data Applicability Report (DAR) following the guidelines provided in NYSDEC Division of Environmental Remediation (DER-10) *Technical Guidance for Site*

Investigation and Remediation, Appendix 2B, dated May 2010. The DAR dated January 2022 is submitted separately from this report.

Results

Table 3-2 of this report presents the groundwater sample results compared with NYSDEC Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Class GA water quality standards.

No VOCs were detected at concentrations above the Class GA water quality standards at any location. One SVOC, 1,4-diclorobenzene, was detected at a concentration above its Class GA water quality standard. 1,4-Diclorobenzene was present in well GW-03D at an estimated concentration of 4.1 micrograms per liter ($\mu\text{g/L}$), slightly exceeding its water quality standard of 3.0 $\mu\text{g/L}$.

The metals iron, magnesium, manganese, and sodium exceeded Class GA standards in most site wells. The sample from well GW-07D also had concentrations of chromium, lead, and nickel exceeding their respective Class GA standards.

Comparison to Historical Results

Organics

Results are consistent with historical results; there have been very few and infrequent detections of most VOCs/SVOCs. 1,4-Diclorobenzene has frequently been detected in GW-03D, with estimated concentrations ranging from 2.4 to 4.2 $\mu\text{g/L}$ over the last five years.

Metals

No significant changes in metals concentrations were observed when compared to previous analytical results. The concentrations of iron, magnesium, manganese, and sodium in most site wells were similar to the concentrations found during previous sampling events.

Sodium concentrations were generally elevated in bedrock wells (GW-01D, GW-03D, GW-08D, and GW-26D) and shallow wells adjacent to roads (GW-01S). The sodium concentrations were also elevated in wells GW-03S and GW-08SR. The higher sodium

concentrations in the bedrock wells may be attributed to the bedrock composition and the elevated concentrations in the shallow wells may be the result of seasonal road de-icing activities.

Trend Analysis

Organics

There is an insufficient number and frequency of detections to define trends.

Metals

A trend analysis of groundwater parameters that routinely exceed Class GA groundwater standards was performed and is presented graphically in Figures E-1 through E-19 of Appendix E. A review of the trend analysis indicated that no significant changes or trends in concentrations of any of the parameters exceeding groundwater standards have occurred over the semi-annual sampling events. The Mann-Kendall Nonparametric Test for Trend was used to determine the trends summarized below (“--” indicates no discernable trend):

Figure	Monitoring Well	Parameters Routinely Exceeding Groundwater Standards and Trend			
		Iron	Magnesium	Manganese	Sodium
E-1	GW-01D	--	--	--	Upward
E-2	GW-01S	Downward	--	Upward	Downward
E-3	GW-03D	Downward	Downward	Downward	Downward
E-4	GW-03S	Downward	Upward	Downward	Upward
E-5	GW-04D	Downward	Upward	Downward	Upward
E-6	GW-04S	--	Upward	Downward	--
E-7	GW-07D	--	Upward	Upward	--
E-8	GW-07S	Downward	Upward	Downward	Upward
E-9	GW-08D	Downward	Downward	Downward	--
E-10	GW-08SR	Downward	Upward	--	--
E-11	GW-26D	Downward	Downward	Downward	Upward
E-12	GW-28S	Downward	Downward	Downward	Downward
E-13	GW-29S	--	--	--	Downward
E-14	GW-30S	Downward (with seasonal variation)	Downward (with seasonal variation)	Downward (with seasonal variation)	Downward (with seasonal variation)

Figure	Monitoring Well	Parameters Routinely Exceeding Groundwater Standards and Trend			
		Iron	Magnesium	Manganese	Sodium
E-15	GW-31S	Upward	Downward	Downward	Downward
E-16	GW-32S	Downward	Downward	Upward	Downward (with seasonal variation)
E-17	GW-33S	Downward	Downward	Downward	Downward
E-18	GW-34S	Downward	Downward	Seasonal Variation	Downward
E-19	GW-35S	Downward	Downward	Downward	Downward

3.3 Groundwater Discharge Monitoring

Two quarterly sampling events (September 2021 and December 2021) of the groundwater collection system discharge were completed since the previous Semiannual Report. The sampling was performed in accordance with the requirements of Discharge Permit No. 19-04-CH016 between the BSA and the Town of Cheektowaga. The permit requires quarterly sampling and analysis of metals (barium, cadmium, chromium, copper, lead, nickel, and zinc) and total suspended solids. A copy of the permit, which shows the monitoring parameters and associated discharge limits, is included as Appendix F.

During the sampling events in September 2021 and December 2021, each regulated parameter was below the limits set by the permits. Copies of the data summary tables that were included with the monitoring reports submitted to the BSA are included as Appendix G.

3.4 Monitoring Well Inspections

During the November 2021 groundwater sampling event, a well inspection was performed. All wells appeared to be in good condition with the exception of previously existing minor damage to the risers on monitoring wells GW-07D, GW-01S, and GW-01D. The wells are still functional. The monitoring well inspection logs may be found in Appendix H.

4.0 SUMMARY AND RECOMMENDATIONS

General Maintenance: The Town of Cheektowaga will continue to maintain mechanical equipment at the landfill on an as-needed basis and operate the groundwater collection and discharge system as designed. The Town will also continue regular inspections, mow the cap once per year, and plow snow to access the Control Building, as necessary.

Groundwater Hydraulic Monitoring: Hydraulic monitoring has been performed on a quarterly basis in conjunction with the discharge monitoring. Water level measurement data demonstrates that the collection trench water levels are maintained at lower elevations than monitoring points outside the landfill system, as designed. Continued quarterly monitoring is recommended.

Groundwater Quality Monitoring: Groundwater sample results indicate that only low levels of SVOCs and metals are present. Similar concentrations of most parameters were found during previous sampling events. The next round of groundwater sampling will be conducted in May 2022. Low flow sampling techniques will be used. Passive diffusion bags will be used again for VOC analyses at the three wells (GW-04S, GW-07S, and GW-07D) that go dry when using low flow sampling techniques.

Groundwater Discharge Monitoring: Groundwater discharges remain within permit limits. Continued quarterly monitoring is recommended.

TABLES

TABLE 3-1

APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

**GROUNDWATER SAMPLING SUMMARY
OPERATION AND MAINTENANCE PLAN
PFOHL BROTHERS LANDFILL SITE, CHEEKTOWAGA, NEW YORK**

LOCATIONS

GW-1D/1S
GW- 3D/3S
GW- 4D/4S
GW- 7D/7S
GW- 8D/8S(R)
GW- 26D/35S
GW- 28S
GW- 29S
GW- 30S
GW- 31S
GW- 32S
GW- 33S
GW- 34S

FREQUENCY

semi-annually for overburden and bedrock groundwater

PARAMETERS

<i>Field</i>	pH conductivity temperature turbidity
<i>VOCs</i>	Acetone Benzene 1,2-Dichloroethene (total) 1,1,2-Trichloroethane Vinyl chloride
<i>SVOCs</i>	Phenol 1,3-Dichlorobenzene 1,4-Dichlorobenzene bis(2-Ethylhexyl)phthalate

TABLE 3-1 (continued)

APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

**GROUNDWATER SAMPLING SUMMARY
OPERATION AND MAINTENANCE PLAN
PFOHL BROTHERS LANDFILL SITE, CHEEKTOWAGA, NEW YORK**

PARAMETERS (cont'd)

<i>Metals</i>	Antimony
	Arsenic
	Barium
	Cadmium
	Chromium
	Copper
	Iron
	Lead
	Magnesium
	Manganese
	Mercury
	Nickel
	Silver
	Sodium
	Zinc

TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2021

Location ID			GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID			GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/22/21	11/22/21	11/23/21	11/23/21	11/22/21
Parameter	Units	*					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3			2.9 J		
1,4-Dichlorobenzene	UG/L	3			4.1 J		
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.097	0.25	0.076	0.095	0.094
Cadmium	MG/L	0.005		0.00075 J		0.0030	0.00082 J
Chromium	MG/L	0.05	0.019	0.0018 J		0.018	0.0016 J
Copper	MG/L	0.2	0.0021 J			0.0041 J	
Iron	MG/L	0.3	0.60	9.8	0.99	0.64	0.031 J
Lead	MG/L	0.025					
Magnesium	MG/L	35	36.8	29.7	14.7	137	76.8
Manganese	MG/L	0.3	0.020	1.3	0.22	0.26	0.018
Nickel	MG/L	0.1	0.0053 J		0.0034 J	0.054	
Sodium	MG/L	20	131	201	167	91.9	96.8
Zinc	MG/L	2	0.0040 J			0.017	0.0017 J

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

Flags assigned during chemistry validation are shown.

 Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed.

Only Detected Results Reported.

TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2021

Location ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/22/21	11/22/21	11/23/21	11/22/21	11/23/21
Parameter	Units	*					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3		NA		NA	
1,4-Dichlorobenzene	UG/L	3		NA		NA	
bis(2-Ethylhexyl)phthalate	UG/L	5		NA	2.2 J	NA	
Metals							
Arsenic	MG/L	0.025		NA		NA	
Barium	MG/L	1	0.13	NA	0.11	NA	0.44
Cadmium	MG/L	0.005	0.0014	NA	0.0036	NA	0.00079 J
Chromium	MG/L	0.05	0.011	NA	0.56	NA	0.0013 J
Copper	MG/L	0.2	0.0034 J	NA	0.037	NA	
Iron	MG/L	0.3	1.4	NA	7.1	NA	0.22
Lead	MG/L	0.025		NA	0.11	NA	
Magnesium	MG/L	35	28.2	NA	35.7	NA	46.3
Manganese	MG/L	0.3	0.13	NA	0.10	NA	0.033
Nickel	MG/L	0.1	0.0079 J	NA	0.25	NA	0.0088 J
Sodium	MG/L	20	29.9	NA	79.3	NA	60.4
Zinc	MG/L	2	0.014	NA	0.078	NA	0.0039 J

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

Flags assigned during chemistry validation are shown.

 Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed.

Only Detected Results Reported.

TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2021

Location ID			GW-08D	GW-08SR	GW-26D	GW-26D	GW-28S
Sample ID			GW-08D	GW-08SR	FD-112321	GW-26D	GW-28S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/23/21	11/23/21	11/23/21	11/23/21	11/24/21
Parameter	Units	*			Field Duplicate (1-1)		
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.077	0.086	0.11	0.11	0.078
Cadmium	MG/L	0.005		0.00058 J			
Chromium	MG/L	0.05	0.014	0.0018 J			
Copper	MG/L	0.2	0.0031 J				
Iron	MG/L	0.3	0.35	5.2	3.1	3.1	0.22
Lead	MG/L	0.025					
Magnesium	MG/L	35	15.7	52.7	17.3	17.4	26.5
Manganese	MG/L	0.3	0.028	0.48	0.35	0.36	0.76
Nickel	MG/L	0.1	0.0062 J		0.0019 J	0.0017 J	
Sodium	MG/L	20	228	114	266	276	8.5
Zinc	MG/L	2	0.0058 J				0.0023 J

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

Flags assigned during chemistry validation are shown.



Concentration Exceeds

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NA - Not Analyzed.

Only Detected Results Reported.

TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2021

Location ID			GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID			GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/24/21	11/24/21	11/24/21	11/24/21	11/24/21
Parameter	Units	*					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Arsenic	MG/L	0.025	0.016				
Barium	MG/L	1	0.18	0.17	0.088	0.055	0.079
Cadmium	MG/L	0.005	0.00050 J				
Chromium	MG/L	0.05				0.0011 J	0.0011 J
Copper	MG/L	0.2				0.0026 J	
Iron	MG/L	0.3	11.1	8.7	2.7	0.042 J	
Lead	MG/L	0.025	0.0041 J	0.0034 J			
Magnesium	MG/L	35	61.5	28.3	26.6	27.4	30.1
Manganese	MG/L	0.3	0.54	1.5	0.57	0.23	0.022
Nickel	MG/L	0.1			0.0019 J	0.0019 J	
Sodium	MG/L	20	9.3	223	2.8	3.3	2.4
Zinc	MG/L	2			0.0041 J	0.0045 J	0.0018 J

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

Flags assigned during chemistry validation are shown.



Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed.

Only Detected Results Reported.

TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2021

Location ID			GW-34S	GW-35S
Sample ID			GW-34S	GW-35S
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			11/23/21	11/23/21
Parameter	Units	*		
Semivolatile Organic Compounds				
1,3-Dichlorobenzene	UG/L	3		
1,4-Dichlorobenzene	UG/L	3		
bis(2-Ethylhexyl)phthalate	UG/L	5		
Metals				
Arsenic	MG/L	0.025		
Barium	MG/L	1	0.11	0.086
Cadmium	MG/L	0.005	0.00066 J	
Chromium	MG/L	0.05	0.0020 J	
Copper	MG/L	0.2		
Iron	MG/L	0.3		0.032 J
Lead	MG/L	0.025		
Magnesium	MG/L	35	42.3	21.5
Manganese	MG/L	0.3	0.073	0.15
Nickel	MG/L	0.1	0.0026 J	
Sodium	MG/L	20	19.2	2.5
Zinc	MG/L	2		

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

Flags assigned during chemistry validation are shown.



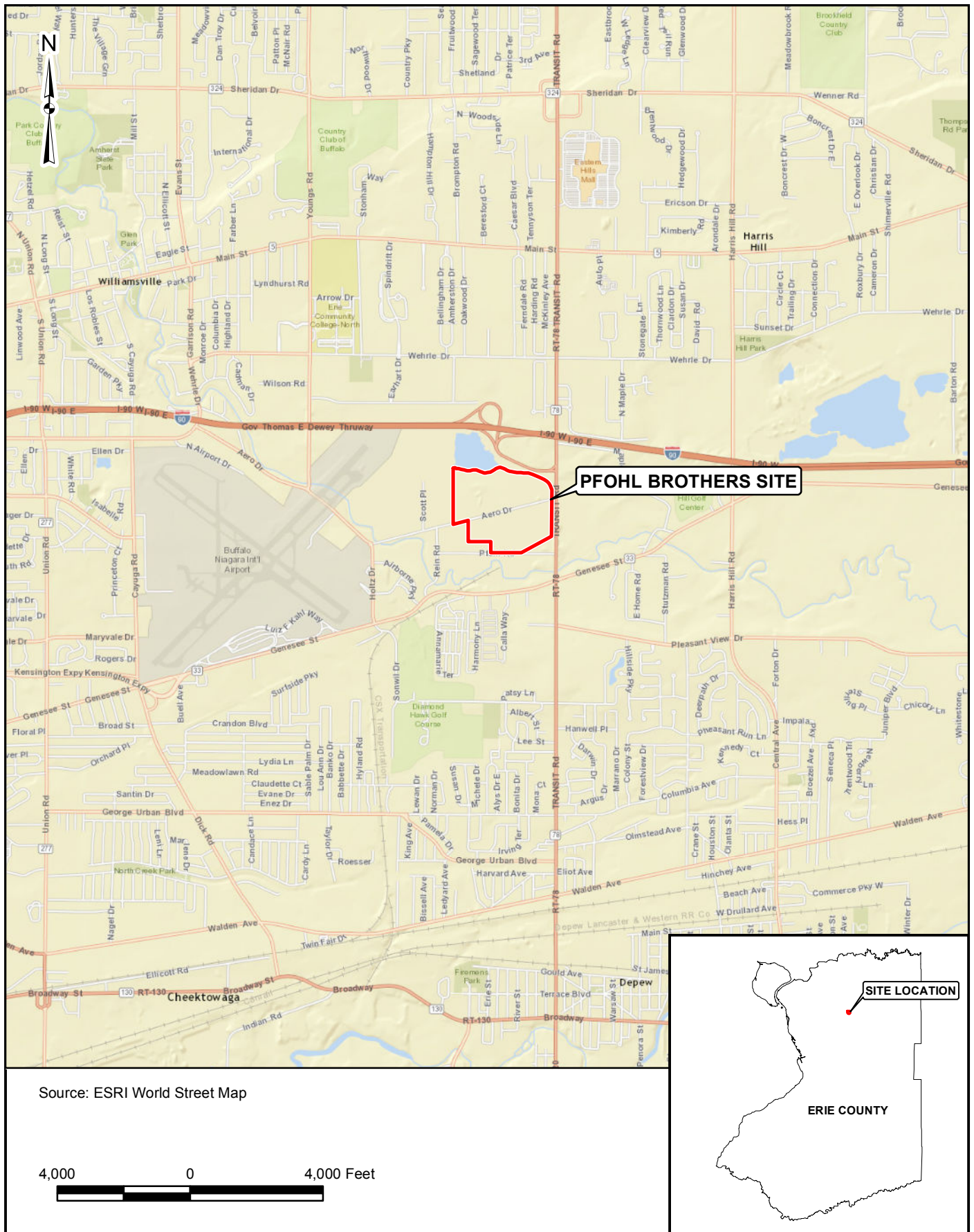
Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed.

Only Detected Results Reported.

FIGURES



J:\Projects\11172700.00000\GIS\ARCMAP\Site Plan.mxd 4/9/2020



APPENDIX A

EXAMPLE DAILY INSPECTION SHEETS

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date

7/1/21
11:17

Weather conditions

Partly Cloudy
Jwal

Time

Read by:

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	1416	2793
WW-2	4.6	0	37208	224
WW-1	4.3	0	442398	8002
WW-6	7.0	0	5019480	20516
WW-4	6.8	0	2595153	10285
WW-5	6.2	0	1703640	190

Flow Totalizer at Meter chamber

10066982

Heat Trace

Outside temp T = 77
Current A = 0

Set point SP = 40

Surge Suppressor events

345

Motor Control Center

Volts 480 volts
Amps 5 amps

Which WW was running?

1 2 3 4 5 6

Filter

Checked

Changed

Comments and/or Current Conditions

Annual Data Reset /

Pfohl Brothers Landfill Site

Daily Logsheets

Town of Cheektowaga

Date 10/28/21
Time 1230

Weather conditions Clear
Read by: JWN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	<u>99.0</u>	<u>0</u>	<u>0</u>	<u>2793</u>
WW-2	<u>4.7</u>	<u>0</u>	<u>-5</u>	<u>224</u>
WW-1	<u>5.1</u>	<u>35.1</u>	<u>412761</u>	<u>8157</u>
WW-6	<u>8.0</u>	<u>46.1</u>	<u>893408</u>	<u>20929</u>
WW-4	<u>8.6</u>	<u>28.6</u>	<u>285698</u>	<u>10416</u>
WW-5	<u>8.6</u>	<u>40.4</u>	<u>1031374</u>	<u>507</u>

Flow Totalizer at Meter chamber 2651485

Heat Trace

Outside temp T = 56
Current A = 0

Set point SP = 40

Surge Suppressor events 388

Motor Control Center

Volts 480 volts
Amps 11 amps

Which WW was running?

1 2 3 4 5 6

Filter Checked Changed

Comments and/or Current Conditions

WW6 Discharge Hose Coupling (Lower) replaced!
JWN

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 11/23/21
Time 0730

Weather conditions 32° CLOUDY
Read by: RM/AECOM

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	<u>99.0</u>	<u>0.0</u>	<u>60566</u>	<u>2815</u>
WW-2	<u>4.6</u>	<u>0.0</u>	<u>-5</u>	<u>224</u>
WW-1	<u>4.0</u>	<u>0.0</u>	<u>514116</u>	<u>8207</u>
WW-6	<u>6.9</u>	<u>0.0</u>	<u>1421026</u>	<u>21074</u>
WW-4	<u>6.8</u>	<u>0.0</u>	<u>363958</u>	<u>10461</u>
WW-5	<u>6.6</u>	<u>0.0</u>	<u>1401586</u>	<u>628</u>
Flow Totalizer at Meter chamber		<u>0.0</u>	<u>3788400</u>	

Heat Trace

Outside temp T = 32°
Current A = 1.7

Set point SP = 40

Surge Suppressor events 433

Motor Control Center

Volts 480 volts
Amps 4 amps

Which WW was running?

1 2 3 4 5 6

NONE

Filter **Checked** **Changed**

Comments and/or Current Conditions

AECOM ONSITE FOR SEMIANNUAL GW SAMPLING

MOWERS ONSITE FINISHED SOUTH SIDE TODAY

APPENDIX B

MONTHLY FLOW SUMMARIES
JULY 2021 – DECEMBER 2021

Direct Discharge Flow Data

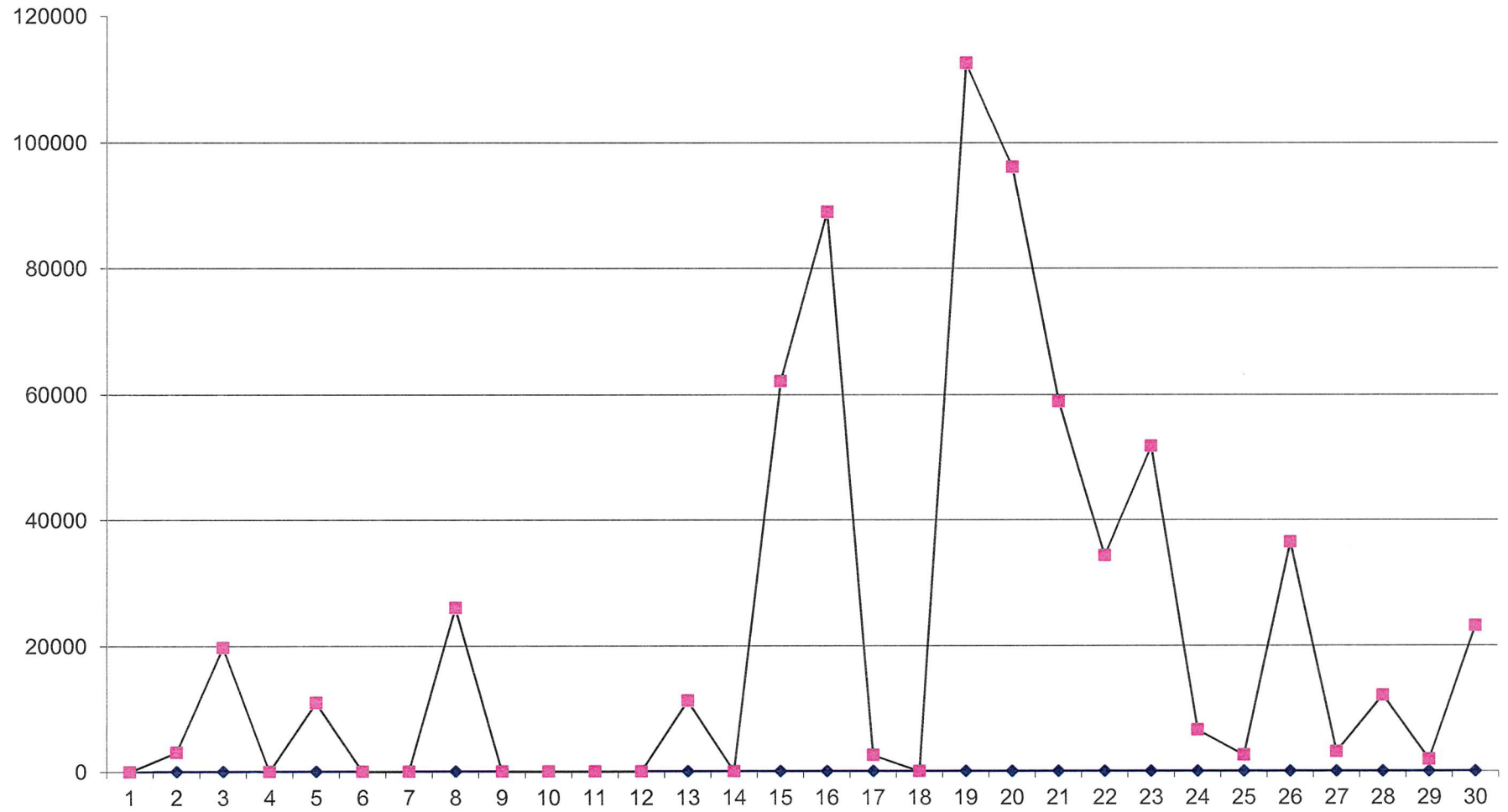
6/30/2021

10,057,894

182

Jul-21	Time; 11:58pm unless otherwise stated	7810536	Daily Total Discharge (Gallons)	Notes
1		0	0	Annual Reset
2		3,074	3,074	16:16 inhibit
3		22,815	19,741	17:15 enable
4		22,815	0	
5		33,797	10,982	
6		33,797	0	
7		33,797	0	
8		59,830	26,033	14:30 inhibit
9		59,830	0	
10		59,830	0	14:44 enable
11		59,830	0	
12		59,830	0	00:28 inhibit
13		71,076	11,245	10:46 enable 17:04 inhibit
14		71,076	0	
15		133,170	62,094	14:14 enable
16		222,064	88,894	
17		224,634	2,569	00:59 inhibit
18		224,634	0	
19		337,185	112,551	07:03 enable
20		433,234	96,048	
21		492,168	58,934	
22		526,519	34,350	
23		578,400	51,881	
24		584,989	6,588	
25		587,549	2,560	
26		624,073	36,524	
27		627,196	3,122	
28		639,285	12,089	
29		641,172	1,886	11:24 inhibit 18:37 enable
30		664,400	23,227	
31		666,818	2,418	
		666,818	666,810	

July
2021



Direct Discharge Flow Data

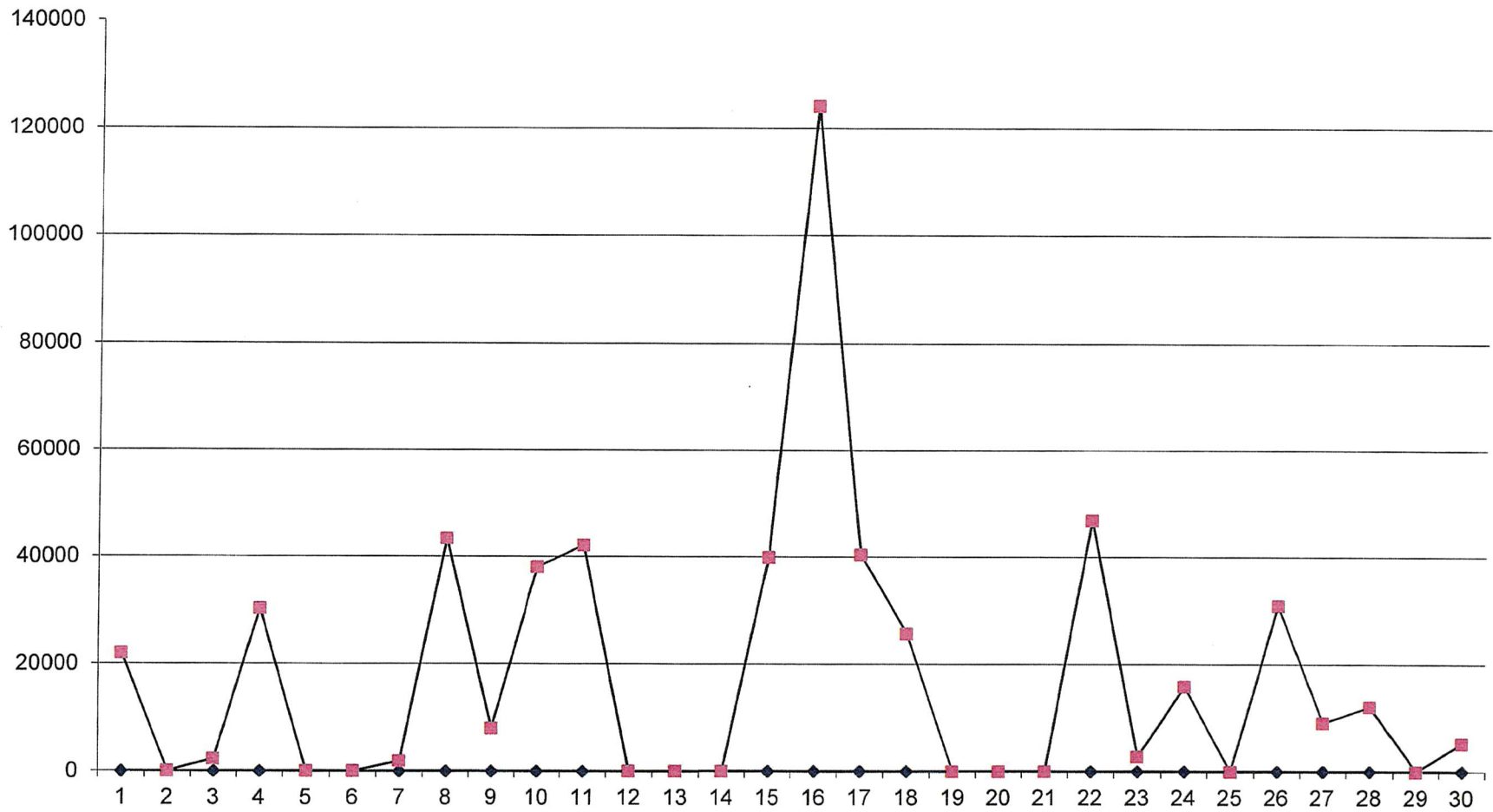
7/31/2021

666,818

2,418

Aug-21	Time; 11:58pm unless otherwise stated	7810536	Daily Total Discharge (Gallons)	Notes
1		688,763	21,944	
2		688,763	0	
3		691,011	2,248	
4		721,266	30,254	
5		721,266	0	
6		721,266	0	
7		723,145	1,879	
8		766,551	43,405	
9		774,551	8,000	
10		812,617	38,066	
11		854,733	42,115	08:30 inhibit
12		854,733	0	
13		854,733	0	
14		854,733	0	
15		894,655	39,922	18:12 enable
16		101,844	124,188	23:38 inhibit
17		1,059,213	40,369	08:07 enable
18		1,084,857	25,644	
19		1,084,857	0	
20		1,084,857	0	
21		1,084,857	0	
22		1,131,712	46,855	
23		1,134,486	2,773	
24		1,150,399	15,913	
25		1,150,399	0	
26		1,181,293	30,893	
27		1,190,405	9,111	
28		1,202,516	12,111	
29		1,202,516	0	22:34 inhibit
30		1,207,832	5,316	16:14 enable
31		1,224,346	16,514	
		557,528	557,520	

August
2021



Direct Discharge Flow Data

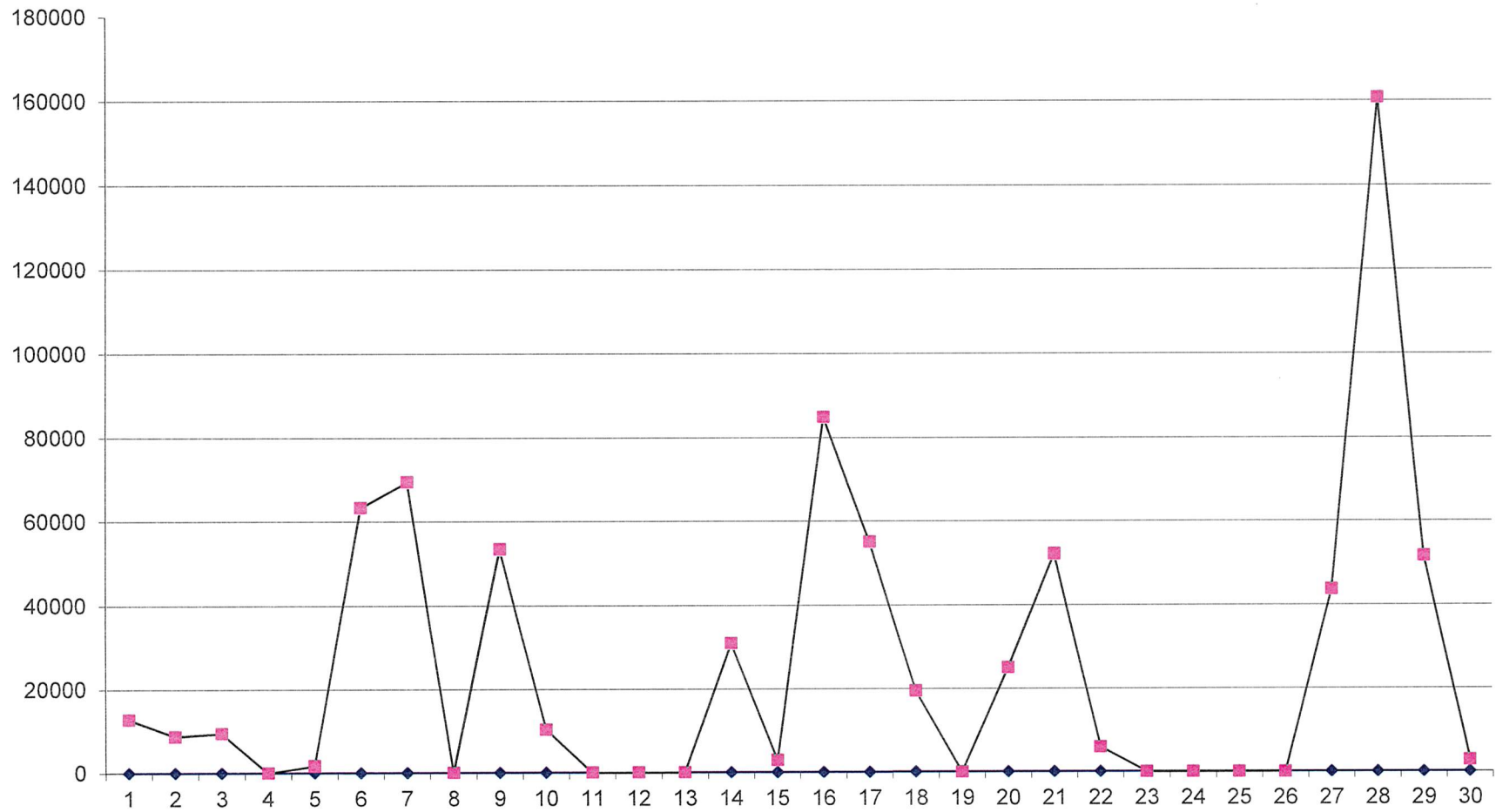
8/31/2021

1,224,346

16,514

Sep-21	Time; 11:58pm unless otherwise stated	7810536	Daily Total Discharge (Gallons)	Notes
1		1,237,159	12,812	
2		1,245,889	8,729	
3		1,255,325	9,435	
4		1,255,325	0	23:32 inhibit
5		1,257,022	1,696	13:56 enable
6		1,320,277	63,255	03:19 inhibit 12:07 enable
7		1,389,729	69,451	22:49 inhibit
8		1,389,729	0	
9		1,443,063	53,334	08:46 enable
10		1,453,363	10,300	
11		1,453,363	0	
12		1,453,363	0	23:40 inhibit
13		1,453,363	0	
14		1,484,234	30,870	13:20 enable 21:56 inhibit
15		1,487,112	2,878	23:26 enable
16		1,571,958	84,845	
17		1,626,926	54,967	
18		1,646,359	19,433	
19		1,646,359	0	
20		1,671,383	25,024	
21		1,723,521	52,138	23:30 inhibit
22		1,729,427	5,905	15:22 enable 22:18 inhibit
23		1,729,427	0	
24		1,729,427	0	Verizon Phone Line Issues
25		1,729,427	0	
26		1,729,427	0	
27		1,773,092	43,665	18:30 enable
28		1,933,828	160,735	
29		1,985,436	51,608	
30		1,988,243	2,807	
31				
		763,897	763,887	

September
2021

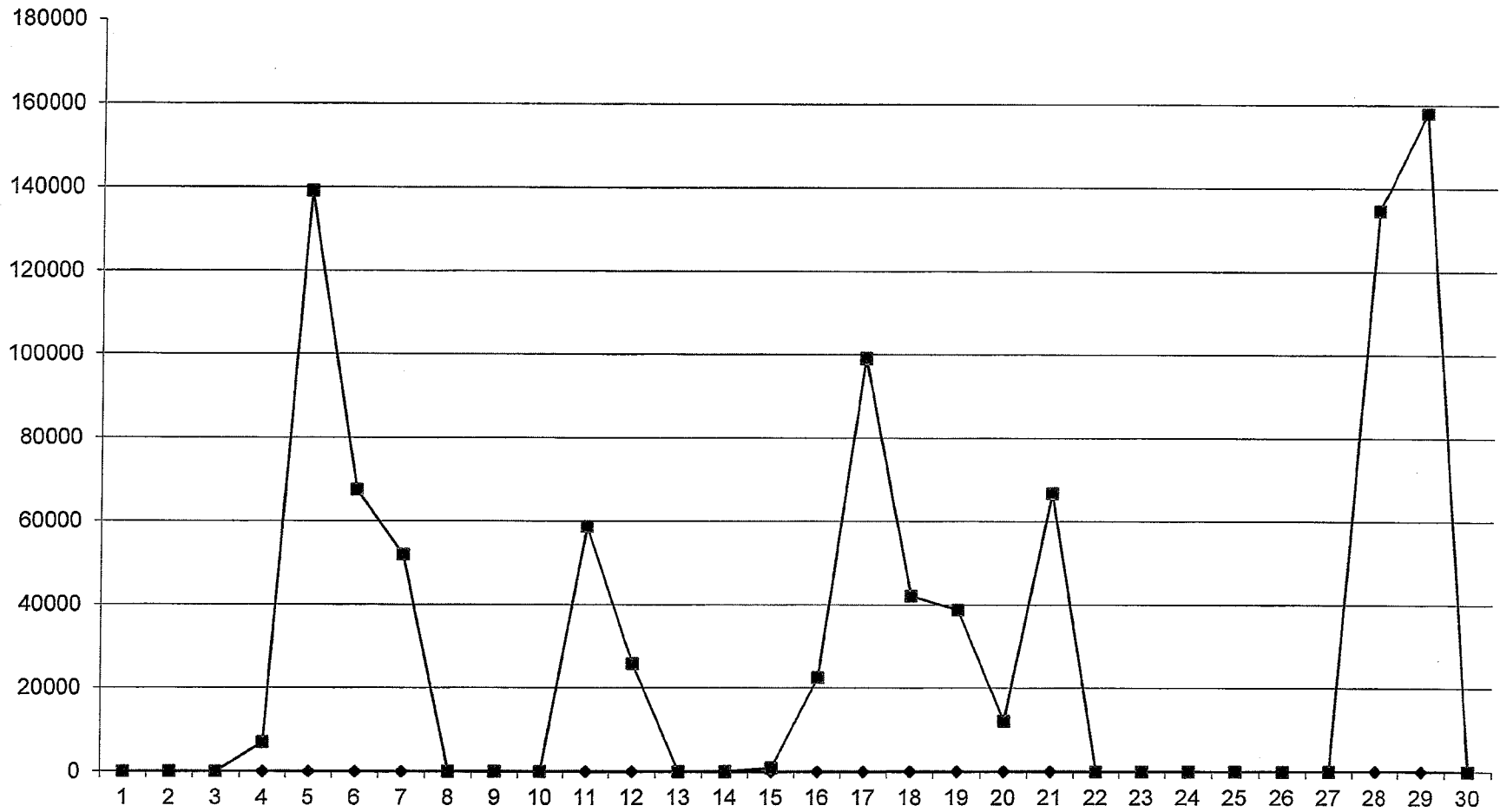


Direct Discharge Flow Data

9/30/2021

Oct-21	Time; 11:58pm unless otherwise stated	1,988,243	2,807	Notes
		Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	
1		1,988,243	0	
2		1,988,243	0	
3		1,988,243	0	15:03 inhibit
4		1,995,159	6,915	22:08 enable
5		2,134,250	139,090	
6		2,201,744	67,494	
7		2,253,663	51,919	
8		2,253,663	0	
9		2,253,663	0	
10		2,253,663	0	
11		2,312,363	58,699	
12		2,338,133	25,770	
13		2,338,133	0	
14		2,338,133	0	
15		2,338,934	801	17:56 inhibit
16		2,361,444	22,509	18:12 enable
17		2,460,548	99,104	
18		2,502,623	42,075	00:03 inhibit 08:49 enable
19		2,541,389	38,766	
20		2,553,462	12,072	
21		2,620,199	66,737	21:44 inhibit 23:33 enable
22		2,620,199	0	
23		2,620,199	0	
24		2,620,199	0	23:13 inhibit
25		2,620,199	0	
26		2,620,199	0	
27		2,620,199	0	
28		2,754,767	134,568	08:18 enable
29		2,912,739	157,972	17:18 inhibit
30		2,912,739	0	
31		2,989,648	76,908	15:31 enable
		1,001,405	1,001,399	

October
2021



Direct Discharge Flow Data

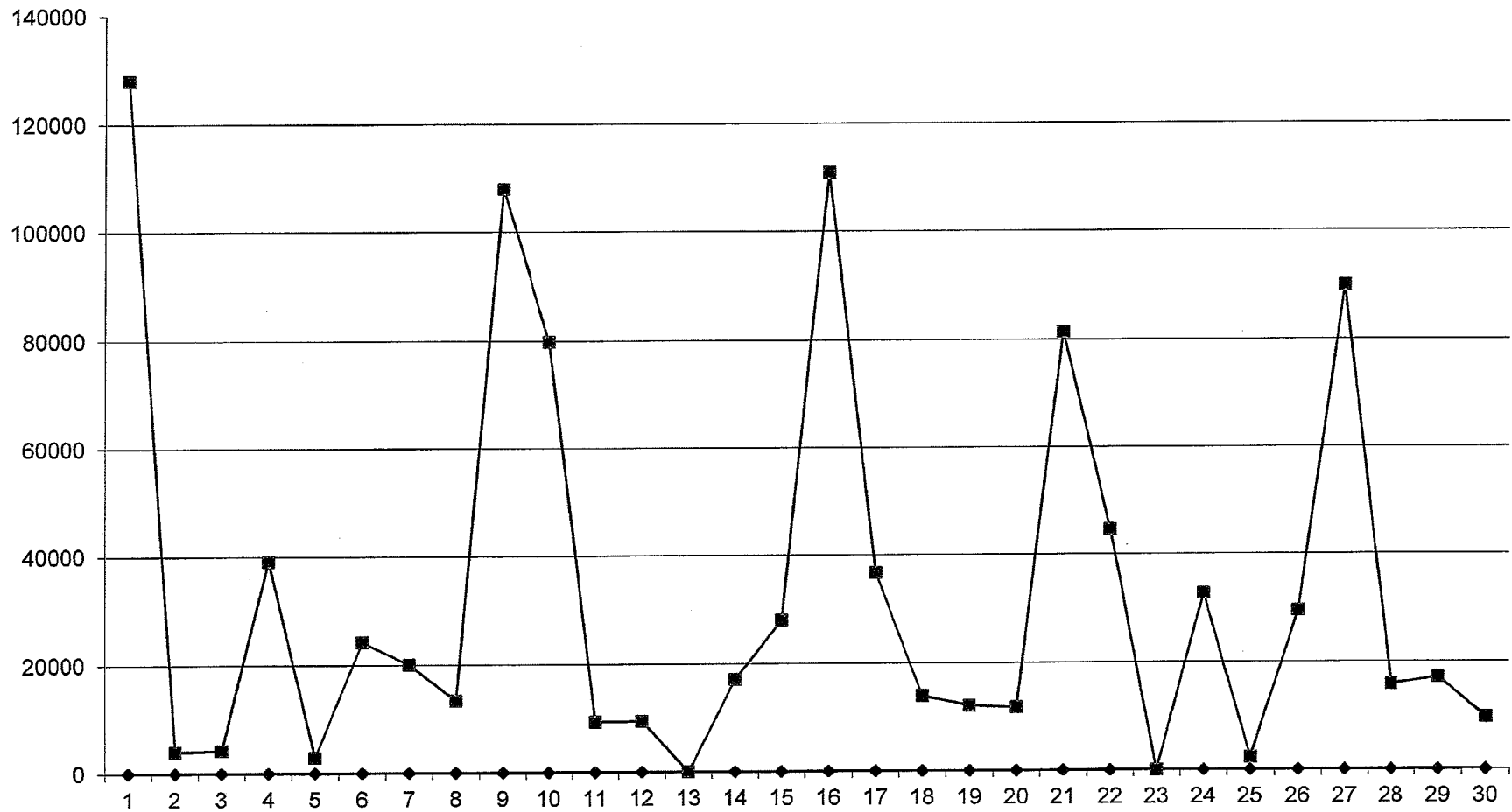
10/31/2021

2,989,648

76,908

Nov-21	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		3,117,696	128,048	
2		3,121,713	4,017	
3		3,125,928	4,215	
4		3,165,063	39,134	
5		3,167,966	2,902	
6		3,192,128	24,161	
7		3,212,188	20,060	
8		3,225,499	13,311	
9		3,333,521	108,021	
10		3,413,340	79,819	
11		3,422,706	9,365	11:17:00 PM inhibit
12		3,432,155	9,449	10:30 enable
13		3,432,155	0	00:46:00 inhibit
14		3,449,246	17,091	07:35 enable 10:00 inhibit
15		3,477,217	27,971	20:03 enable
16		3,588,130	110,913	
17		3,624,781	36,650	22:58 inhibit
18		3,638,656	13,874	16:36 enable
19		3,650,706	12,050	
20		3,662,420	11,714	
21		3,743,791	81,370	
22		3,788,400	44,609	01:34 inhibit 07:08 enable
23		3,788,400	0	
24		3,821,068	32,668	23:40 inhibit
25		3,823,410	2,341	20:35 enable 23:22 inhibit
26		3,852,876	29,466	08:02 enable
27		3,942,727	89,851	
28		3,958,546	15,819	
29		3,975,655	17,108	
30		3,985,373	9,717	
31				
		995,725	995,714	

November
2021



Direct Discharge Flow Data

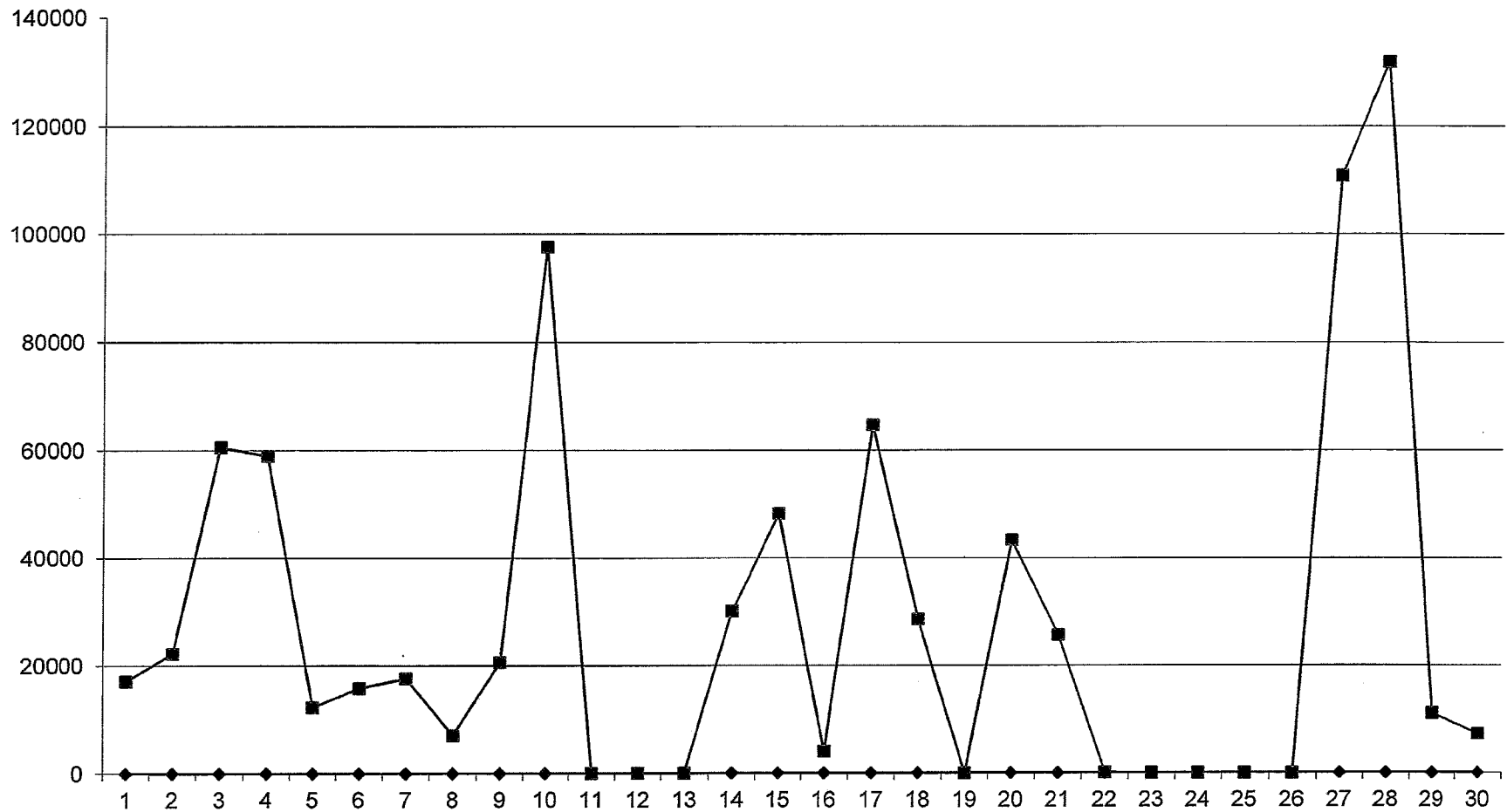
11/30/2021

3,985,373

9,717

Dec-21	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		4,002,473	17,100	
2		4,024,615	22,142	
3		4,085,208	60,592	
4		4,144,122	58,914	
5		4,156,318	12,195	23:42 inhibit
6		4,172,091	15,773	15:00 enable
7		4,189,668	17,577	
8		4,196,703	7,034	
9		4,217,277	20,574	
10		4,314,877	97,599	
11		4,314,877	0	POWER FAILURE
12		4,314,877	0	
13		4,314,877	0	
14		4,344,925	30,048	
15		4,393,229	48,304	
16		4,397,261	4,032	
17		4,461,946	64,684	
18		4,490,494	28,548	12:58 inhibit
19		4,490,494	0	
20		4,533,798	43,303	07:22 enable
21		4,559,461	25,663	
22		4,559,557	96	
23		4,559,557	0	
24		4,559,557	0	
25		4,559,557	0	
26		4,559,557	0	
27		4,670,792	110,935	
28		4,802,376	131,884	
29		4,813,409	11,032	
30		4,820,624	7,215	
31		4,830,899	10,275	
		845,526	845,519	

December
2021



APPENDIX C

HYDRAULIC MONITORING TABLES

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-01D	1073088.634	1117968.213	694.41	NM	696.12	D	1						
MNW								9/16/2021 1156	3.06	693.06	0.00	693.06	
MNW								11/22/2021 1300	2.37	693.75	0.00	693.75	
MNW								12/21/2021 1013	2.60	693.52	0.00	693.52	
GW-01S	1073087.779	1117961.500	694.53	NM	696.19	S	1						
MNW								9/16/2021 1155	3.81	692.38	0.00	692.38	
MNW								11/22/2021 1305	3.12	693.07	0.00	693.07	
MNW								12/21/2021 1012	3.57	692.62	0.00	692.62	
GW-03D	1073819.106	1114602.426	692.35	NM	693.88	D	1						
MNW								9/16/2021 1002	1.65	692.23	0.00	692.23	
MNW								11/22/2021 0844	1.50	692.38	0.00	692.38	
MNW								12/21/2021 0905	1.67	692.21	0.00	692.21	
GW-03S	1073812.622	1114605.762	692.61	NM	693.80	S	1						
MNW								9/16/2021 1003	9.10	684.70	0.00	684.70	
MNW								11/22/2021 0842	2.16	691.64	0.00	691.64	
MNW								12/21/2021 0904	2.12	691.68	0.00	691.68	
GW-04D	1072289.432	1114685.625	690.89	NM	692.75	D	1						
MNW								9/16/2021 1208	12.96	679.79	0.00	679.79	
MNW								11/22/2021 1539	12.04	680.71	0.00	680.71	
MNW								12/21/2021 1022	12.09	680.66	0.00	680.66	
GW-04S	1072284.456	1114685.127	690.76	NM	692.72	S	1						
MNW								9/16/2021 1207	4.33	688.39	0.00	688.39	
MNW								11/22/2021 1538	3.89	688.83	0.00	688.83	
MNW								12/21/2021 1023	4.00	688.72	0.00	688.72	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-07D	1071242.458	1117669.925	697.15	NM	699.94	D	1						
MNW								9/16/2021 1129	48.62	651.32	0.00	651.32	
MNW								11/22/2021 1005	43.66	656.28	0.00	656.28	
MNW								12/21/2021 0959	56.88	643.06	0.00	643.06	
GW-07S	1071238.157	1117666.265	697.47	NM	699.51	S	1						
MNW								9/16/2021 1130	5.98	693.53	0.00	693.53	
MNW								11/22/2021 1004	4.16	695.35	0.00	695.35	
MNW								12/21/2021 0958	4.40	695.11	0.00	695.11	
GW-08D	1073713.617	1116795.328	695.28	NM	697.79	D	1						
MNW								9/16/2021 1015	5.64	692.15	0.00	692.15	
MNW								11/22/2021 0900	5.46	692.33	0.00	692.33	
MNW								12/21/2021 0915	5.63	692.16	0.00	692.16	
GW-08SR	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								9/16/2021 1014	5.13	692.37	0.00	692.37	
MNW								11/22/2021 0902	5.04	692.46	0.00	692.46	
MNW								12/21/2021 0914	5.11	692.39	0.00	692.39	
GW-26D	1071698.573	1115997.470	696.01	NM	698.50	D	1						
MNW								9/16/2021 1109	6.48	692.02	0.00	692.02	
MNW								11/22/2021 0946	6.33	692.17	0.00	692.17	
MNW								12/21/2021 0948	6.48	692.02	0.00	692.02	
GW-28S	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								9/16/2021 1021	10.13	690.82	0.00	690.82	
MNW								11/22/2021 0910	8.19	692.76	0.00	692.76	
MNW								12/21/2021 0921	8.58	692.37	0.00	692.37	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH Manhole Monitoring Point
 MNW Monitoring Well
 SG Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-29S	1072552.638	1117761.993	697.50	NM	699.63	S	1						
MNW								9/16/2021 1042	9.25	690.38	0.00	690.38	
MNW								11/22/2021 0930	6.31	693.32	0.00	693.32	
MNW								12/21/2021 0931	7.43	692.20	0.00	692.20	
GW-30S	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								9/16/2021 1046	7.81	688.77	0.00	688.77	
MNW								11/22/2021 0935	7.43	689.15	0.00	689.15	
MNW								12/21/2021 0936	7.70	688.88	0.00	688.88	
GW-31S	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								9/16/2021 1050	5.11	693.51	0.00	693.51	
MNW								11/22/2021 0943	2.42	696.20	0.00	696.20	
MNW								12/21/2021 0939	2.63	695.99	0.00	695.99	
GW-32S	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								9/16/2021 1056	4.57	693.80	0.00	693.80	
MNW								11/22/2021 0944	2.16	696.21	0.00	696.21	
MNW								12/21/2021 0943	2.46	695.91	0.00	695.91	
GW-33S	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								9/16/2021 1115	4.03	694.21	0.00	694.21	
MNW								11/22/2021 0950	3.06	695.18	0.00	695.18	
MNW								12/21/2021 0951	3.78	694.46	0.00	694.46	
GW-34S	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								9/16/2021 0952	3.25	691.52	0.00	691.52	
MNW								11/22/2021 0837	2.16	692.61	0.00	692.61	
MNW								12/21/2021 0855	2.77	692.00	0.00	692.00	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH Manhole Monitoring Point
 MNW Monitoring Well
 SG Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-35S	1071701.925	1115985.585	696.19	NM	697.39	S	1						
MNW								9/16/2021 1108	5.06	692.33	0.00	692.33	
MNW								11/22/2021 0945	2.96	694.43	0.00	694.43	
MNW								12/21/2021 0947	3.22	694.17	0.00	694.17	
MH-01	1073806.665	1114810.501	698.62	NM	698.62	NA	1						
MH								9/16/2021 0959	9.86	688.76	0.00	688.76	
MH								11/22/2021 0839	11.43	687.19	0.00	687.19	
MH								12/21/2021 0900	10.19	688.43	0.00	688.43	
MH-03	1073736.789	1115259.334	699.40	NM	699.40	NA	1						
MH								9/16/2021 1008	10.77	688.63	0.00	688.63	
MH								11/22/2021 0852	11.25	688.15	0.00	688.15	
MH								12/21/2021 0909	11.06	688.34	0.00	688.34	
MH-07	1073838.229	1116243.757	696.82	NM	696.82	NA	1						
MH								9/16/2021 1011	8.96	687.86	0.00	687.86	
MH								11/22/2021 0854	9.46	687.36	0.00	687.36	
MH								12/21/2021 0911	9.28	687.54	0.00	687.54	
MH-10	1073540.729	1117381.524	703.01	NM	703.01	NA	1						
MH								9/16/2021 1018	14.54	688.47	0.00	688.47	
MH								11/22/2021 0905	14.51	688.50	0.00	688.50	
MH								12/21/2021 0918	14.52	688.49	0.00	688.49	
MH-15	1072531.567	1117761.125	699.02	NM	699.02	NA	1						
MH								9/16/2021 1039	15.18	683.84	0.00	683.84	
MH								11/22/2021 0932	14.62	684.40	0.00	684.40	
MH								12/21/2021 0932	14.92	684.10	0.00	684.10	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH Manhole Monitoring Point
 MNW Monitoring Well
 SG Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
MH-16 MH	1072133.714	1117748.238	698.57	NM	698.57	NA	1	9/16/2021 1045	14.51	684.06	0.00	684.06	
								11/22/2021 0933	14.15	684.42	0.00	684.42	
								12/21/2021 0935	15.56	683.01	0.00	683.01	
MH-17 MH	1071813.137	1117180.019	702.16	NM	702.16	NA	1	9/16/2021 1049	18.14	684.02	0.00	684.02	
								11/22/2021 0940	17.78	684.38	0.00	684.38	
								12/21/2021 0938	18.25	683.91	0.00	683.91	
MH-20 MH	1071756.395	1115997.024	706.20	NM	706.20	NA	1	9/16/2021 1106	19.73	686.47	0.00	686.47	
								11/22/2021 0945	19.75	686.45	0.00	686.45	
								12/21/2021 0946	19.77	686.43	0.00	686.43	
MH-22 MH	1072158.023	1115589.309	698.05	NM	698.05	NA	1	9/16/2021 1114	8.91	689.14	0.00	689.14	
								11/22/2021 0949	8.92	689.13	0.00	689.13	
								12/21/2021 0950	9.06	688.99	0.00	688.99	
MH-25 MH	1072483.928	1114820.313	698.17	NM	698.17	NA	1	9/16/2021 0944	9.43	688.74	0.00	688.74	
								11/22/2021 0830	10.70	687.47	0.00	687.47	
								12/21/2021 0849	9.78	688.39	0.00	688.39	
SG-01 SG	1073882.887	1114813.101	NM	NM	690.00	NA	1	9/16/2021 1000	NM	-	NM	-	Dry @ -0.82'
								11/22/2021 0840	-0.82	690.82	0.00	690.82	
								12/21/2021 0901	-0.75	690.75	0.00	690.75	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
SG-02 SG	1073738.27	1116805.85	NM	NM	690.00	NA	1	9/16/2021 1016	-3.35	693.35	0.00	693.35	
								11/22/2021 0905	-3.40	693.40	0.00	693.40	
								12/21/2021 0916	-3.37	693.37	0.00	693.37	
WW-01 MH	1073676.903	1115710.476	NM	NM	684.02	NA	1	9/16/2021 0830	-4.50	688.52	0.00	688.52	
								11/22/2021 0700	-4.00	688.02	0.00	688.02	
								12/21/2021 0820	-4.20	688.22	0.00	688.22	
WW-02 MH	1073684.724	1116792.311	NM	NM	684.18	NA	1	9/16/2021 0830	-4.60	688.78	0.00	688.78	
								11/22/2021 0700	-4.60	688.78	0.00	688.78	
								12/21/2021 0820	-4.60	688.78	0.00	688.78	
WW-03 MH	1073140.339	1117618.499	NM	NM	683.80	NA	1	9/16/2021 1022	-4.75	688.55	0.00	688.55	
								11/22/2021 0915	-4.63	688.43	0.00	688.43	
								12/21/2021 0921	-4.72	688.52	0.00	688.52	
WW-04 MH	1072057.563	1117610.508	NM	NM	676.62	NA	1	9/16/2021 0830	-6.80	683.42	0.00	683.42	
								11/22/2021 0700	-7.20	683.82	0.00	683.82	
								12/21/2021 0820	-5.70	682.32	0.00	682.32	
WW-05 MH	1071661.368	1116370.876	NM	NM	676.14	NA	1	9/16/2021 0830	-5.50	681.64	0.00	681.64	
								11/22/2021 0700	-7.00	683.14	0.00	683.14	
								12/21/2021 0820	-6.60	682.74	0.00	682.74	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH Manhole Monitoring Point
 MNW Monitoring Well
 SG Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2021

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
WW-06	1072988.420	1114811.518	NM	NM	681.89	NA	1						
MH								9/16/2021 0830	-7.30	689.19	0.00	689.19	
MH								11/22/2021 0700	-5.80	687.69	0.00	687.69	
MH								12/21/2021 0820	-7.10	688.99	0.00	688.99	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-2
PFOHL BROTHERS LANDFILL SITE
OVERBURDEN HYDRAULIC GRADIENT**

WELL PAIR:	WW-1	*	Level	WW-2	GW-8SR	Level	SG-02	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft)
9/16/2021	688.52	---	---	688.78	692.37	3.59	693.35	4.57
11/22/2021	688.02	---	---	688.78	692.46	3.68	693.40	4.62
12/21/2021	688.22	---	---	688.78	692.39	3.61	693.37	4.59

WELL PAIR:	WW-3	GW-28S	Level	WW-4	*	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/16/2021	688.55	690.82	2.27	683.42	---	---
11/22/2021	688.43	692.76	4.33	683.82	---	---
12/21/2021	688.52	692.37	3.85	682.32	---	---

WELL PAIR:	WW-5	GW-32S	Level	WW-6	GW-34S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/16/2021	681.64	693.80	12.16	689.19	691.52	2.33
11/22/2021	683.14	696.21	13.07	687.69	695.61	7.92
12/21/2021	682.74	695.91	13.17	688.99	692.00	3.01

WELL PAIR:	MH-1	SG-1	Level	MH-15	GW-29S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/16/2021	688.76	DRY	NA	683.84	690.38	6.54
11/22/2021	687.19	690.82	3.63	684.40	693.32	8.92
12/21/2021	688.43	690.75	2.32	684.10	692.20	8.10

WELL PAIR:	MH-16	GW-30S	Level	MH-17	GW-31S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/16/2021	684.06	688.77	4.71	684.02	693.51	9.49
11/22/2021	684.42	689.15	4.73	684.38	696.20	11.82
12/21/2021	683.01	688.88	5.87	683.91	695.99	12.08

WELL PAIR:	MH-20	GW-35S	Level	MH-22	GW-33S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/16/2021	686.47	692.33	5.86	689.14	694.21	5.07
11/22/2021	686.45	694.43	7.98	689.13	695.18	6.05
12/21/2021	686.43	694.17	7.74	688.99	694.46	5.47

Notes:

* = No corresponding monitoring well.
NA = Not applicable

APPENDIX D

**GROUNDWATER PURGE AND SAMPLE COLLECTION
LOGS**

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-01S

Date: 11/22/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.12'	Depth to Well Bottom:	14.94'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	7.3	Estimated Purge Volume (liters):	7.8
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Sample ID:	GW-01S	Sample Time:	15:10	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Riser pipe is bulged inwards, could not remove stainless steel bailer from within well, sampled around it.

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-01D

Date: 11/22/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.37'	Depth to Well Bottom:	39.65'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	92.1	Estimated Purge Volume (liters):	45.0
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Sample ID:	GW-01D	Sample Time:	14:20	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-03S

Date: 11/23/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.25'	Depth to Well Bottom:	13.22'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.8	Estimated Purge Volume (liters):	4.0
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Sample ID:	GW-03S	Sample Time:	10:12	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-03D

Date: 11/23/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	1.61'	Depth to Well Bottom:	35.70'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	84.2	Estimated Purge Volume (liters):	48.0
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Sample ID:	GW-03D	Sample Time:	11:28	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:28	7.13	11.6	1.398	2.48	4.70	-17.4	800	1.61
10:33	7.16	11.8	1.380	0.80	5.78	-56.0	800	1.61
10:38	7.15	11.8	1.384	0.71	4.74	-68.5	800	1.61
10:43	7.15	11.8	1.383	0.70	5.20	-73.0	800	1.61
10:48	7.15	11.9	1.383	0.68	5.84	-78.3	800	1.61
10:53	7.15	11.8	1.384	0.67	5.55	-81.4	800	1.61
10:58	7.16	11.7	1.383	0.67	4.63	-84.6	800	1.61
11:03	7.15	11.8	1.384	0.66	3.29	-85.8	800	1.61
11:08	7.13	11.8	1.387	0.66	3.02	-86.2	800	1.61
11:13	7.15	11.9	1.387	0.65	5.02	-89.2	800	1.61
11:18	7.15	11.9	1.388	0.64	4.04	-90.6	800	1.61
11:23	7.14	11.9	1.388	0.64	3.61	-91.9	800	1.61
11:28	7.15	11.9	1.389	0.64	3.62	-93.1	800	1.61
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-04S

Date: 11/22/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.89'	Depth to Well Bottom:	16.23'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	7.6	Estimated Purge Volume (liters):	15.1
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Sample ID:	GW-4S	Sample Time:	15:45 (VOCs) & 17:22 (SVOCs/Metals)	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Placed passive diffusion bag (PDB) in well 9/21/2021, sampled VOCs from PDB at 15:45 on 11/22/2021.

Well historically goes dry at very low purge rates (<75ml/min). Bailed dry and sampled for SVOCs and Metals after recovery at 17:22.

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:52	9.32	8.7	0.554	5.44	18.07	-41.6	Initial	3.89
15:55	9.33	10.1	0.532	7.83	10.35	-26.0	1 Gallon	-
15:58	9.09	10.8	0.546	6.82	28.3	-12.6	2 Gallons	-
15:59	8.98	11.0	0.544	4.91	50.5	-7.4	3 Gallons	-
16:00	8.73	11.3	0.549	5.16	86.6	-13.7	4 Gallons	-
17:22	8.28	10.0	0.611	3.04	29.10	-103.4	Sample	12.21
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-04D

Date: 11/22/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	12.04'	Depth to Well Bottom:	45.57'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	82.8	Estimated Purge Volume (liters):	10.7
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Sample ID:	GW-4D	Sample Time:	17:11	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
16:10	7.40	9.5	1.778	1.92	3.8	-152.7	175	12.04
16:15	7.38	9.6	1.795	1.07	1.59	-180.3	175	12.48
16:20	7.38	9.8	1.798	0.89	1.37	-187.5	175	12.67
16:25	7.38	9.6	1.798	0.81	1.49	-188.2	175	12.88
16:30	7.38	9.6	1.796	0.75	1.62	-190.0	175	13.03
16:35	7.38	9.6	1.798	0.71	2.30	-194.4	175	13.20
16:40	7.38	9.8	1.799	0.70	1.66	-199.2	175	13.28
16:45	7.39	9.6	1.798	0.68	2.14	-207.3	175	13.38
16:50	7.38	9.7	1.799	0.67	3.52	-220.6	175	13.47
16:55	7.38	9.6	1.811	0.66	1.24	-232.5	175	13.53
17:00	7.35	9.5	1.815	0.68	1.51	-242.8	175	13.60
17:05	7.34	9.5	1.825	0.65	2.77	-253.8	175	13.66
17:08	7.33	9.5	1.829	0.65	1.97	-259.3	175	13.68
17:11	7.33	9.5	1.827	0.65	1.65	-263.7	175	13.72
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

WELL PURGING LOG

URS Corporation

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-07S
PROJECT NO.:	60411174		
STAFF:	Rob Murphy, Ann Marie Kropovitch		
DATE(S):	11/22/2021 & 11/23/2021		

1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	<u>35.33</u>	WELL ID. 1"	VOL. (GAL/FT) 0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	<u>4.16</u>	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	<u>31.17</u>	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	<u>0.17</u>	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	<u>5.30</u>	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	<u> </u>	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	<u>8.0</u>	8"	2.60

$V=0.0408 \times (\text{CASING DIAMETER [INCHES]})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	Initial	2.0	4.0	6.0	8.0		Sample				
pH	8.06	8.10	8.09	8.16	8.21		7.64				
SPEC. COND. (mS/cm)	0.791	0.797	0.790	0.787	0.774		0.883				
DO (mg/l)	7.23	88.34	7.95	9.05	9.14		6.67				
TEMPERATURE (°C)	9.4	10.8	11.3	10.3	9.5		9.6				
TURBIDITY (NTU)	6.77	6.96	7.63	12.50	40.50		10.75				
ORP (millivolts)	-52.8	-12	5.4	27.1	50.1		-39.1				
TIME	11:50	11:53	11:55	12:01	12:08		12:15 on 11/23/21				

COMMENTS: 10:20 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 9/16/2021.
 11:50 - Begin hand bailing well.
 12:08 - Well dry after removing 8.0 gallons.
 11/23/2021 12:15 - Return to well, depth to water = 4.25 feet.
 12:15 - Collect sample for SVOCs and Metals.

WELL PURGING LOG

URS Corporation

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-07D
PROJECT NO.:	60411174		
STAFF:	Rob Murphy, Ann Marie Kropovitch		
DATE(S):	11/22/2021 & 11/23/2021		

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	<u>60.83</u>	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	<u>43.66</u>	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	<u>17.17</u>	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	<u>0.66</u>	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	<u>11.33</u>	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	<u></u>	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	<u>11.3</u>	8"	2.60

$V=0.0408 \times (\text{CASING DIAMETER [INCHES]})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	Initial	3.0	6.0	9.0	11.3		Sample				
pH	7.61	7.76	7.78	7.73	8.04		7.84				
SPEC. COND. (mS/cm)	0.773	0.788	0.804	0.893	0.991		1.035				
DO (mg/l)	2.45	5.43	6.52	5.48	7.13		6.30				
TEMPERATURE (°C)	9.5	10.2	9.7	10.2	8.1		10.3				
TURBIDITY (NTU)	5.53	5.80	12.60	7.96	32.50		40.08				
ORP (millivolts)	42.5	12.0	-60.6	-115.6	-129.0		-45.9				
TIME	10:30	10:44	10:57	11:07	11:45		12:00 on 11/23/21				

COMMENTS: 10:15 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 9/16/2021.
 10:30 - Begin hand bailing well.
 11:45 - Well dry after removing 11.3 gallons.
 11/23/2021 12:00 - return to well, depth to water = 59.11 feet.
 12:00 - Collect sample for SVOCs and Metals.

Strong Sulfur Odor

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-08SR

Date: 11/23/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.08'	Depth to Well Bottom:	13.02'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.9	Estimated Purge Volume (liters):	7.8
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Sample ID:	GW-8SR	Sample Time:	15:15	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-08D

Date: 11/23/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.59'	Depth to Well Bottom:	36.54'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	76.4	Estimated Purge Volume (liters):	45.0
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Sample ID:	GW-8D	Sample Time:	13:54	QA/QC:	MS/MSD
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-26D

Date: 11/23/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.44'	Depth to Well Bottom:	40.70'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	84.6	Estimated Purge Volume (liters):	43.8
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Sample ID:	GW-26D	Sample Time:	17:20	QA/QC:	Field Dup. FD-112321
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-28S

Date: 11/24/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	8.42'	Depth to Well Bottom:	15.52'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.4	Estimated Purge Volume (liters):	5.0
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Sample ID:	GW-28S	Sample Time:	8:25	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-29S

Date: 11/24/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.96'	Depth to Well Bottom:	20.04'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	8.1	Estimated Purge Volume (liters):	8.1
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Sample ID:	GW-29S	Sample Time:	9:36	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-30S

Date: 11/24/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	7.62'	Depth to Well Bottom:	17.97'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.4	Estimated Purge Volume (liters):	6.8
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Sample ID:	GW-30S	Sample Time:	10:20	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-31S

Date: 11/24/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.55'	Depth to Well Bottom:	9.57'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.3	Estimated Purge Volume (liters):	7.0
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Sample ID:	GW-31S	Sample Time:	11:18	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-32S

Date: 11/24/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.46'	Depth to Well Bottom:	9.93'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.6	Estimated Purge Volume (liters):	4.5
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Sample ID:	GW-32S	Sample Time:	12:15	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-33S

Date: 11/24/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.89'	Depth to Well Bottom:	8.21'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	2.7	Estimated Purge Volume (liters):	6.5
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Sample ID:	GW-33S	Sample Time:	13:10	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-34S

Date: 11/23/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.45'	Depth to Well Bottom:	10.01'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.7	Estimated Purge Volume (liters):	7.2
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Sample ID:	GW-34S	Sample Time:	9:17	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-35S

Date: 11/23/2021 Sampling Personnel: Rob Murphy, Ann Marie Kropovitch Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.06'	Depth to Well Bottom:	7.46'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	2.7	Estimated Purge Volume (liters):	4.8
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Sample ID:	GW-35S	Sample Time:	16:07	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date of Sampling: November 22, 2022

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-07D	GW-07D	42.9	42.9	10:15	Groundwater	VOCs	Not Applicable
GW-07S	GW-07S	20.1	30.3	10:20	Groundwater		Not Applicable
GW-01D	GW-01D	92.1	45.0	14:20	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-01S	GW-01S	7.3	7.8	15:10	Groundwater		Not Applicable
GW-04S	GW-04S	7.6	15.1	15:45,17:22	Groundwater		Not Applicable
GW-04D	GW-04D	82.8	10.7	17:11	Groundwater		Not Applicable
							Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization with the exception of wells GW-04S, GW-07D, and GW-07S that were sampled for VOCs using passive diffusion bags (PDBs).
GW-04S, GW-07D, and GW-07S were then purged dry. Remaining parameters were collected after recovery at GW-04S.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date of Sampling: November 23, 2022

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-34S	GW-34S	4.7	7.2	9:17	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-03S	GW-03S	6.8	4.0	10:12	Groundwater		Not Applicable
GW-03D	GW-03D	84.2	48.0	11:28	Groundwater		Not Applicable
GW-07D	GW-07D	42.9	42.9	12:00	Groundwater	SVOCs/ Metals	Not Applicable
GW-07S	GW-07S	20.1	30.3	12:15	Groundwater		Not Applicable
GW-08D	GW-08D	76.4	45.0	13:54	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-08D	GW-08D	76.4	45.0	13:54	Matrix Spike		Not Applicable

Additional Comments: GW-07D and GW-07S were sampled for SVOCs and Metals after recharging overnight.
All other wells were purged using low flow methods until parameter stabilization.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date of Sampling: November 23, 2022

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-08D	GW-08D	76.4	45.0	13:54	Spike Duplicate	VOCs/SVOCs/ TAL Metals	Not Applicable
GW-08SR	GW-08SR	4.9	7.8	15:15	Groundwater		Not Applicable
GW-35S	GW-35S	2.7	4.8	16:07	Groundwater		Not Applicable
GW-26D	GW-26D	84.6	43.8	17:20	Groundwater		Not Applicable
FD-112321	GW-26D	84.6	43.8	17:20	Duplicate		Not Applicable
TB- 112221+112321	-	-	-	-	Trip Blank	VOCs	Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date of Sampling: November 24, 2022

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-28S	GW-28S	4.4	5.0	8:25	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-29S	GW-29S	8.1	8.1	9:36	Groundwater		Not Applicable
GW-30S	GW-30S	6.4	6.8	10:20	Groundwater		Not Applicable
GW-31S	GW-31S	4.3	7.0	11:18	Groundwater		Not Applicable
GW-32S	GW-32S	4.6	4.5	12:15	Groundwater		Not Applicable
GW-33S	GW-33S	2.7	6.5	13:10	Groundwater		Not Applicable
TB-112421	-	-	-	-	Trip Blank	VOCs	Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization.

APPENDIX E

GROUNDWATER TREND ANALYSIS

FIGURE E-1
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-01D

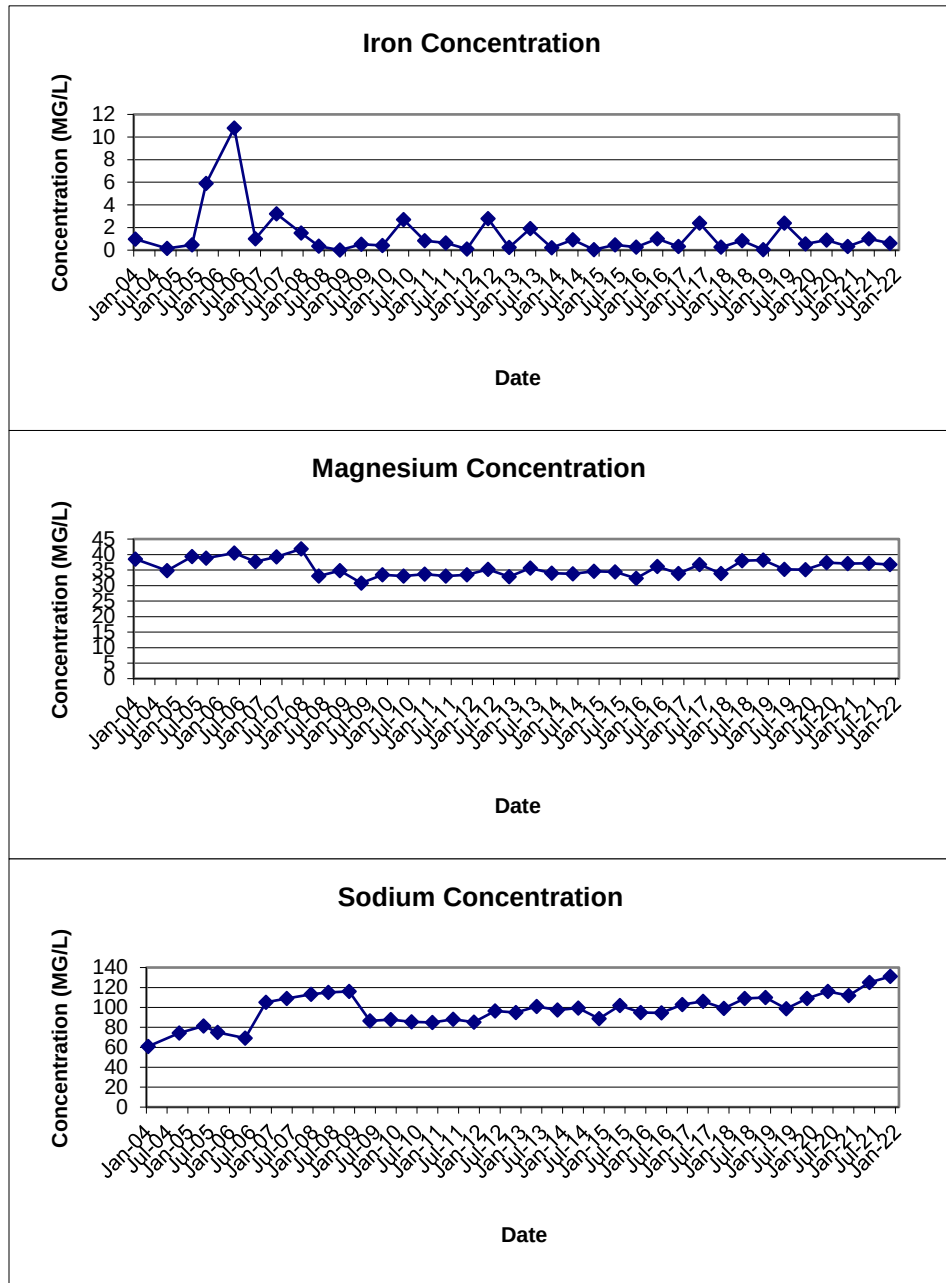


FIGURE E-2
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-01S

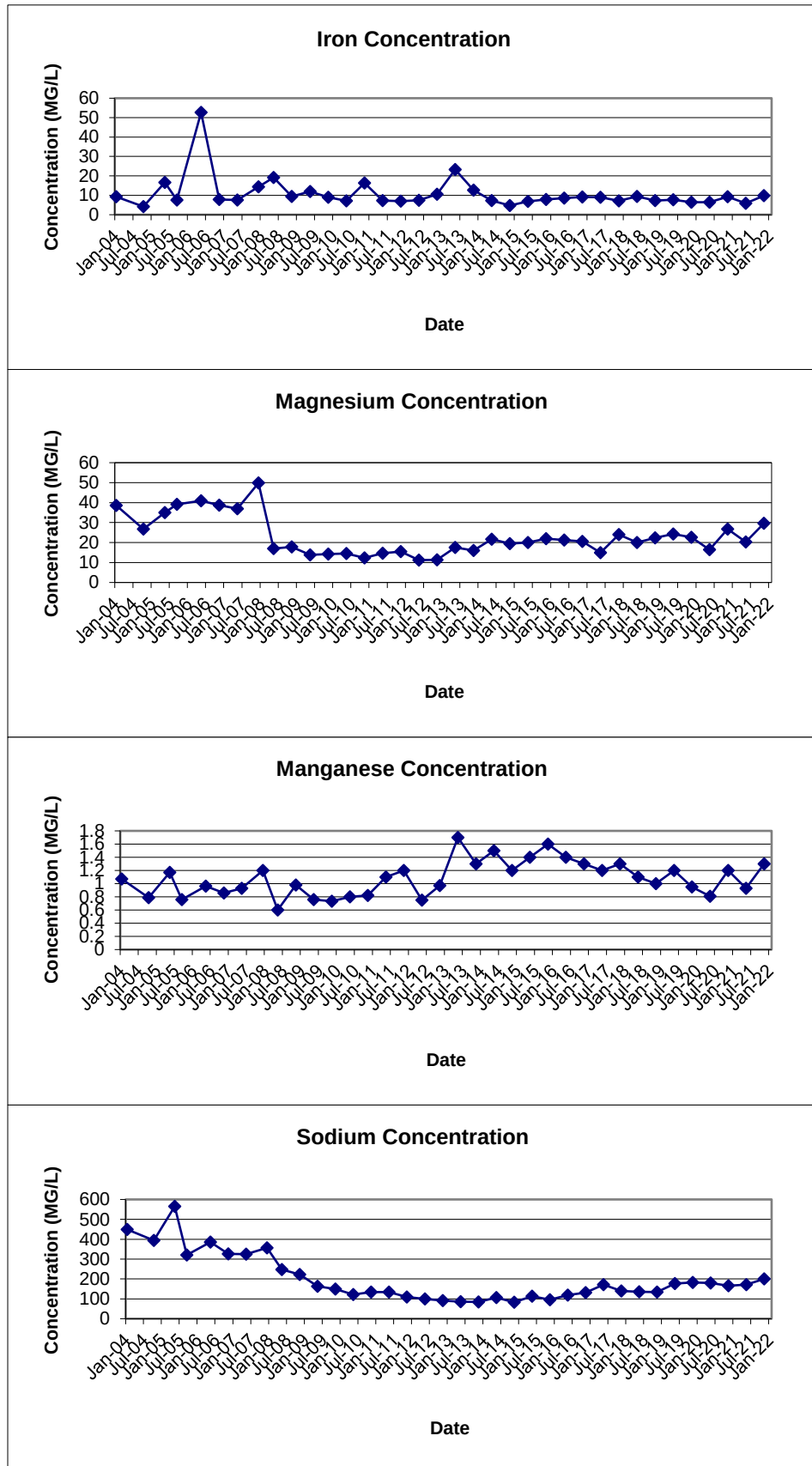


FIGURE E-3
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-03D

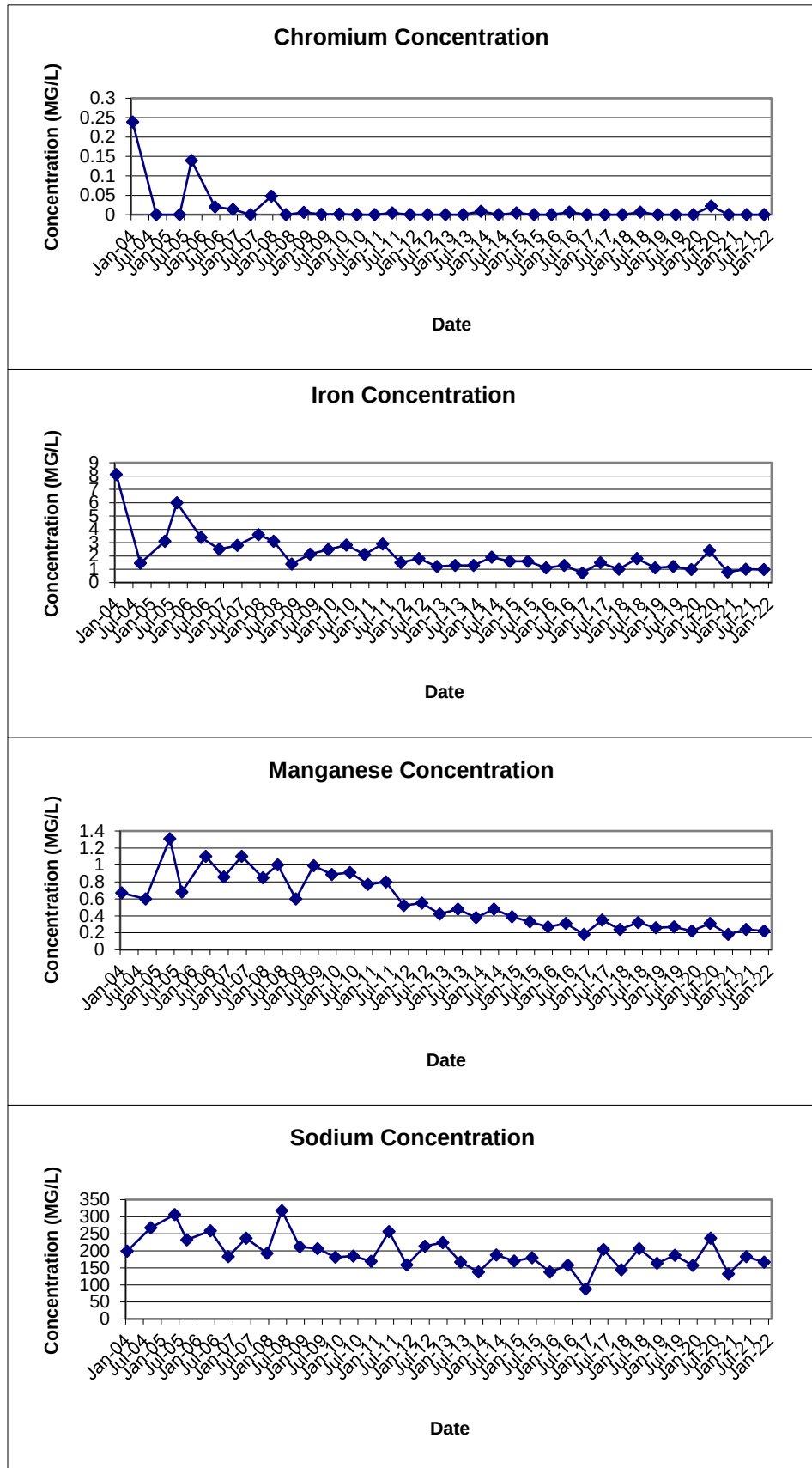


FIGURE E-3
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-03D

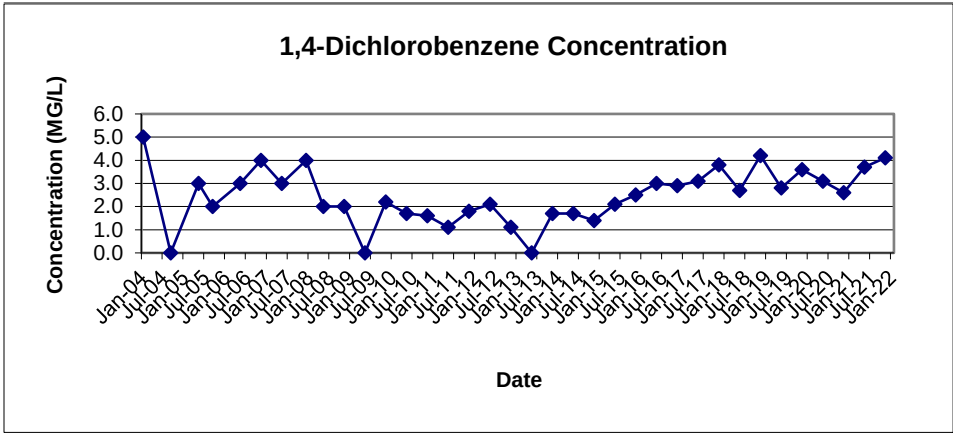
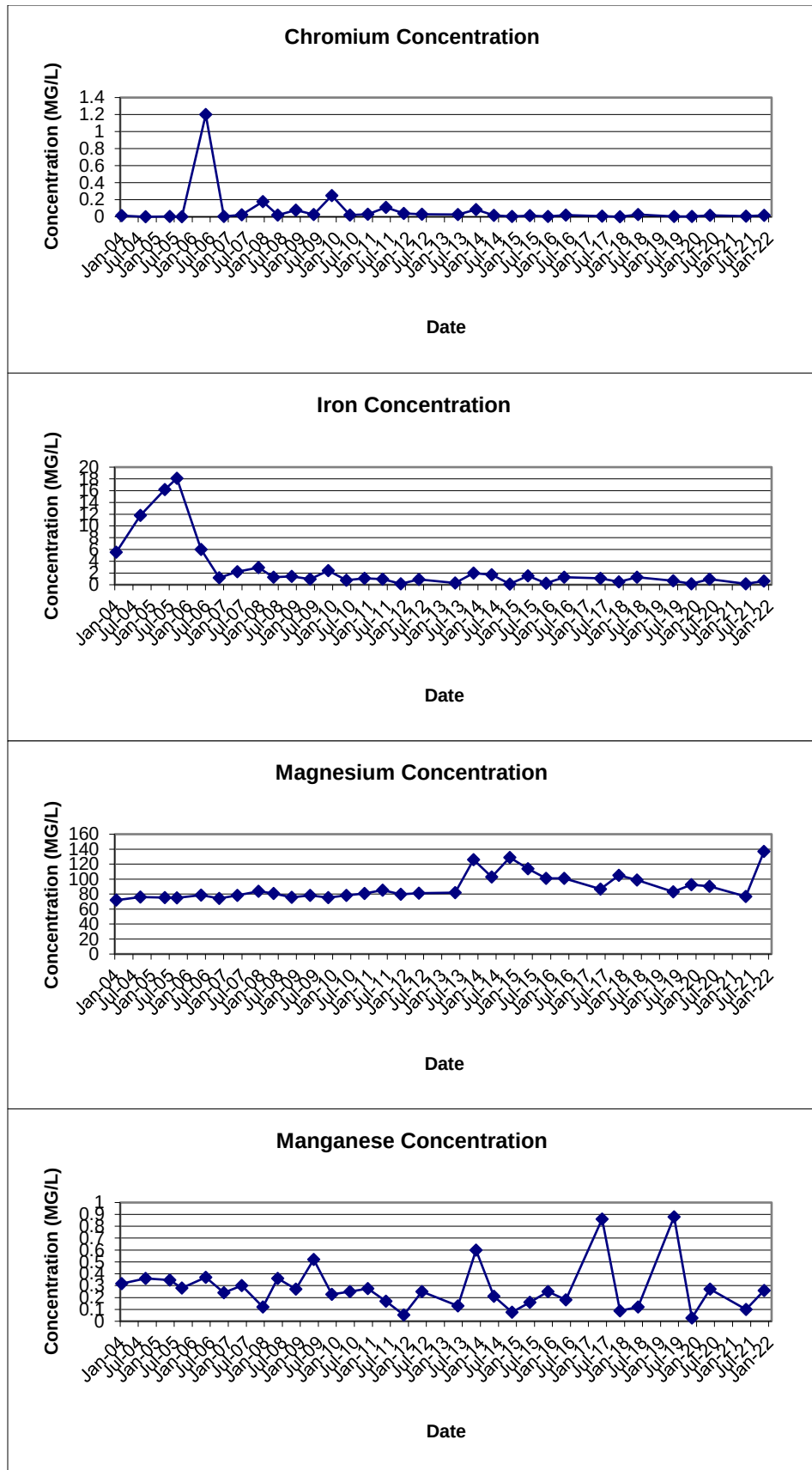
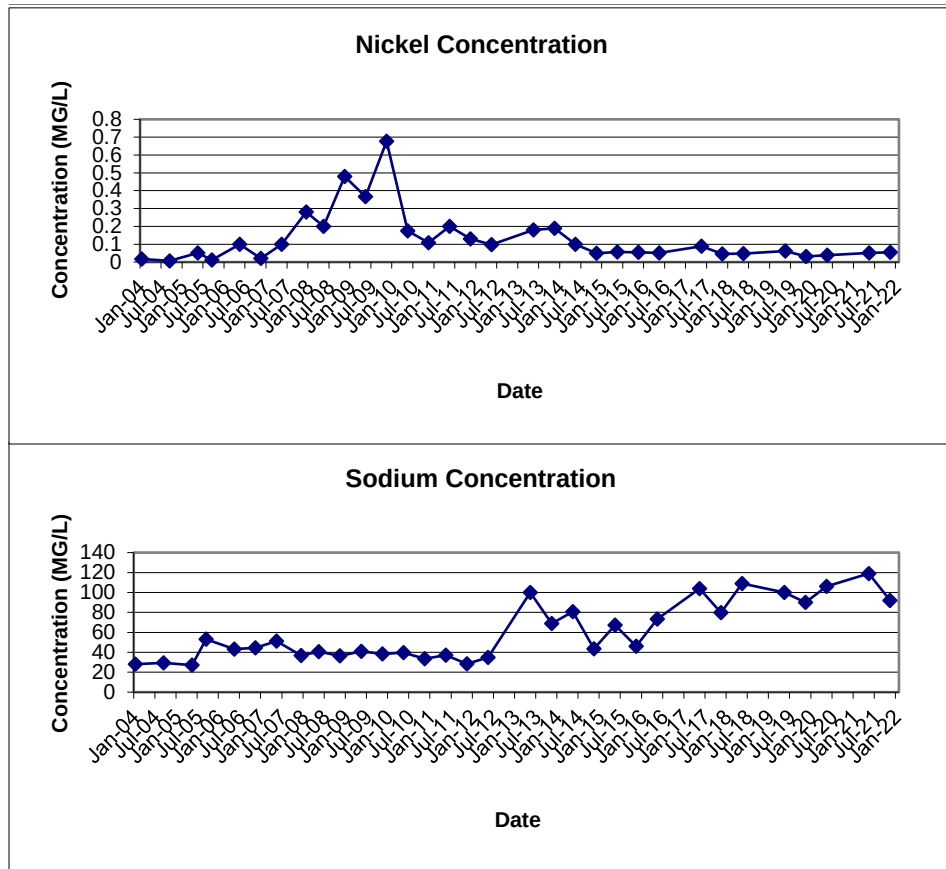


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-03S



Well was dry and was not sampled in November 2016, 2018, and 2020

FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-03S



Well was dry and was not sampled in November 2016, 2018, and 2020

FIGURE E-5
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-04D

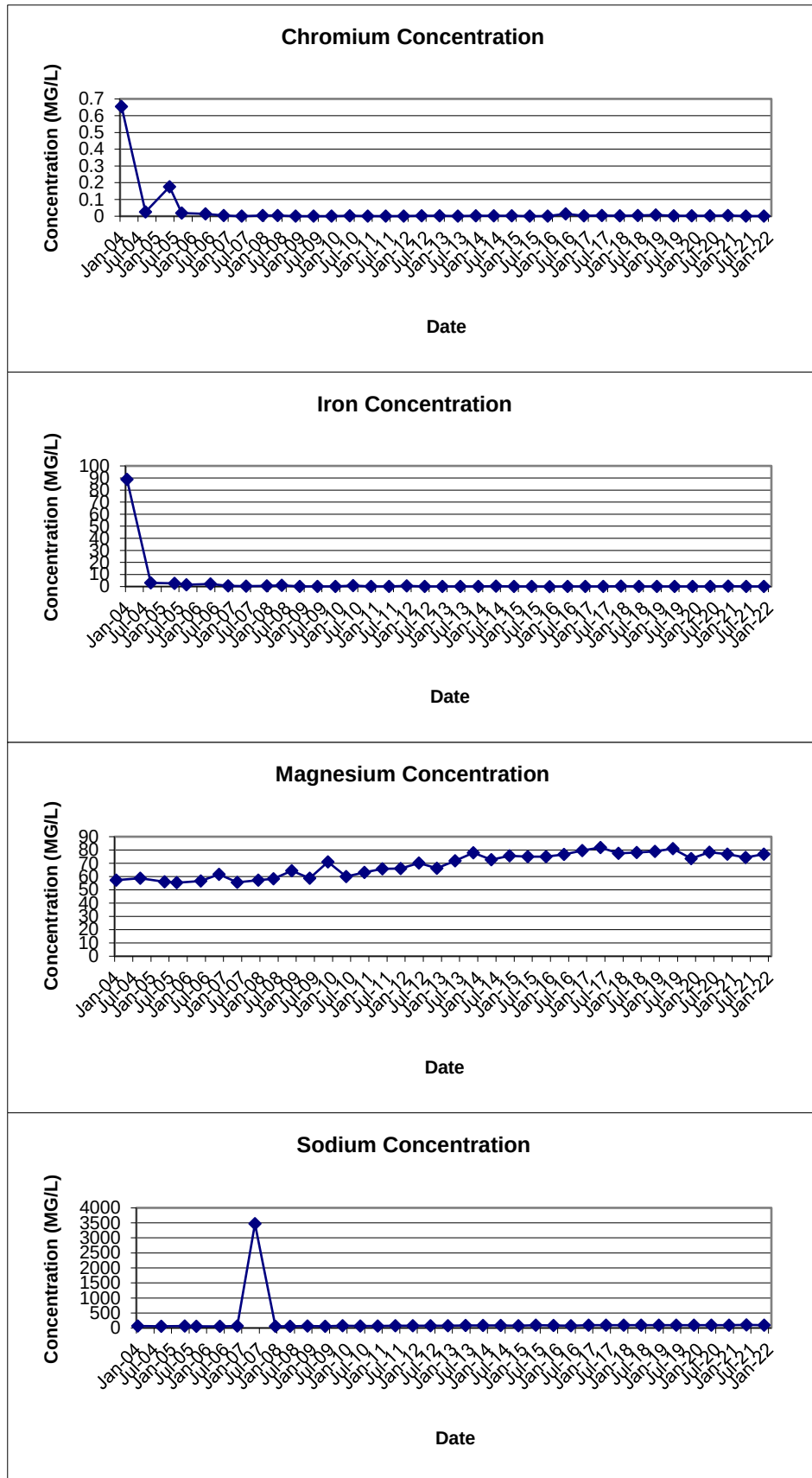


FIGURE E-6
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-04S

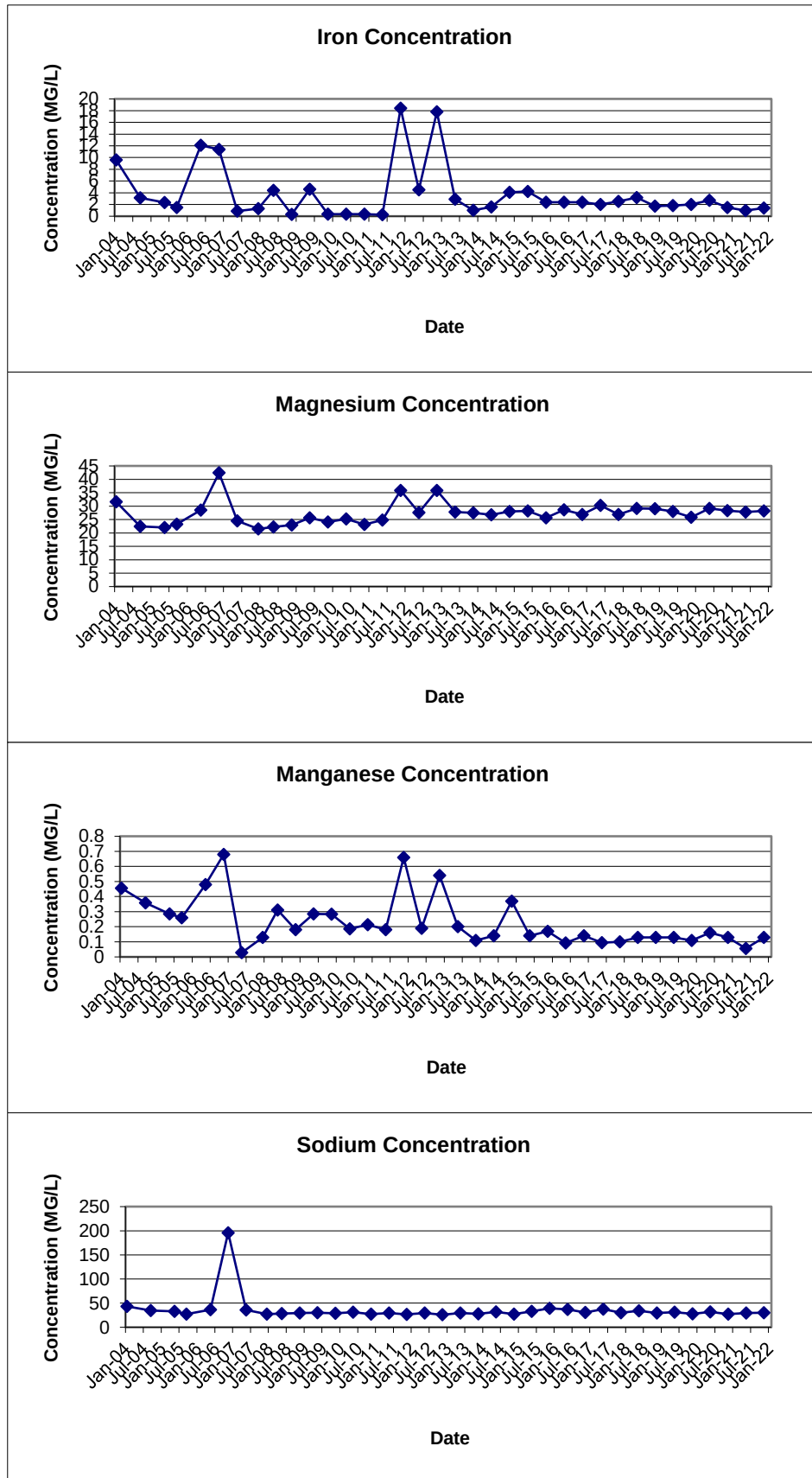


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07D

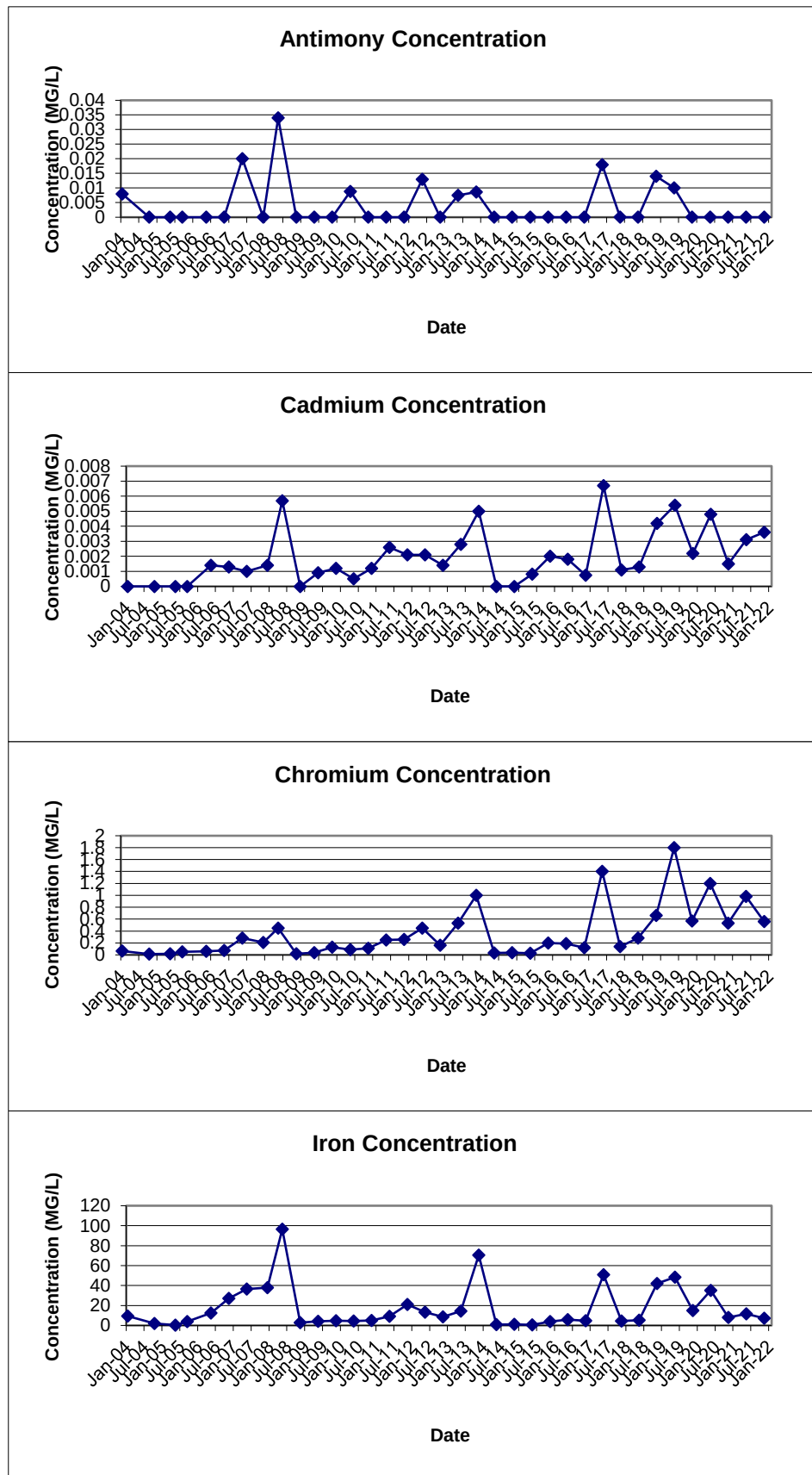


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07D

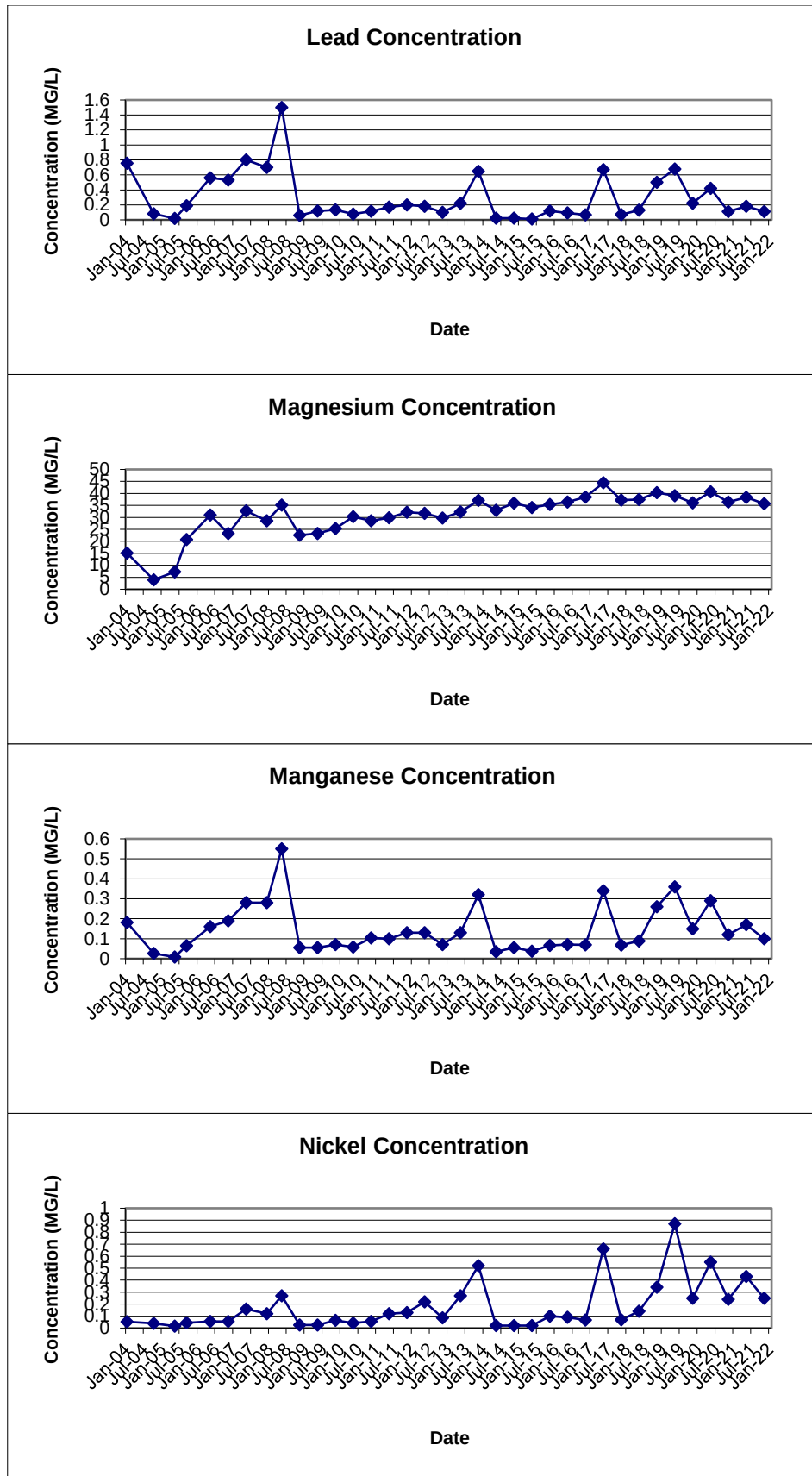


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07D

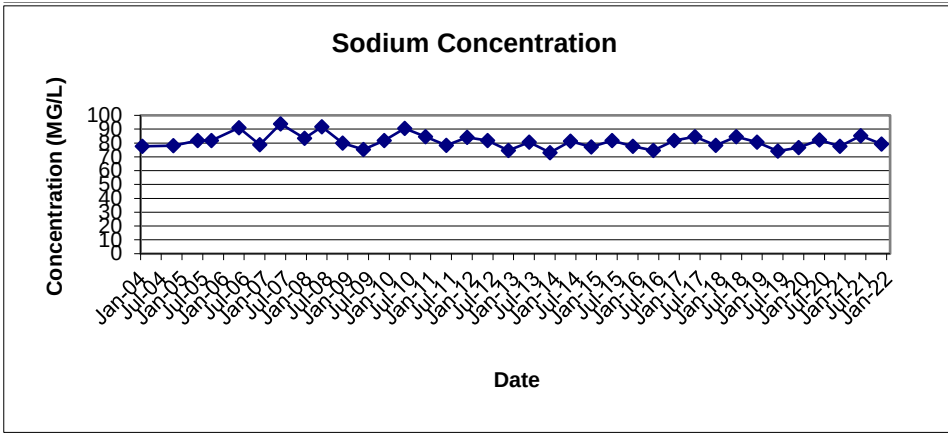


FIGURE E-8
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07S

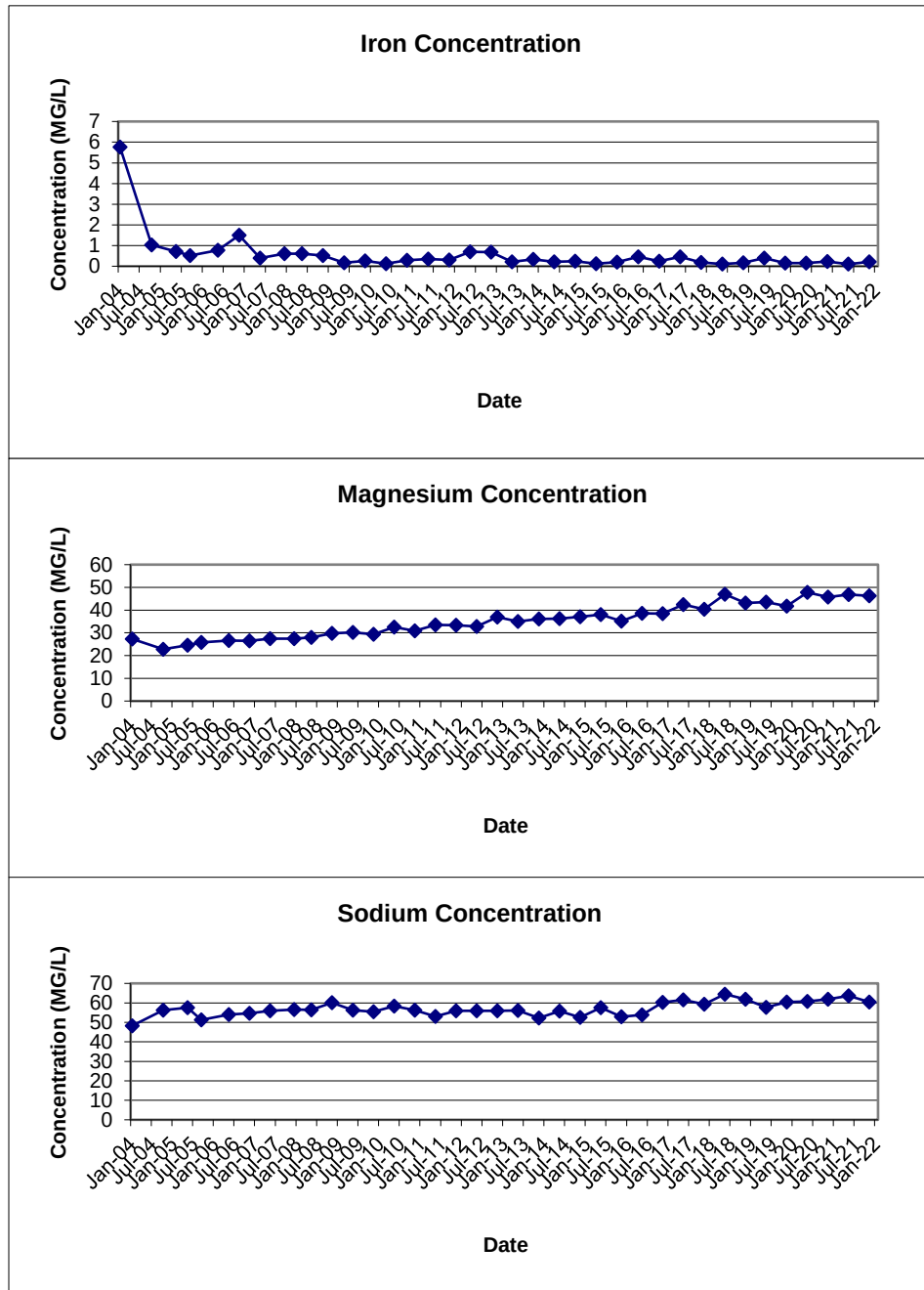


FIGURE E-9
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-08D

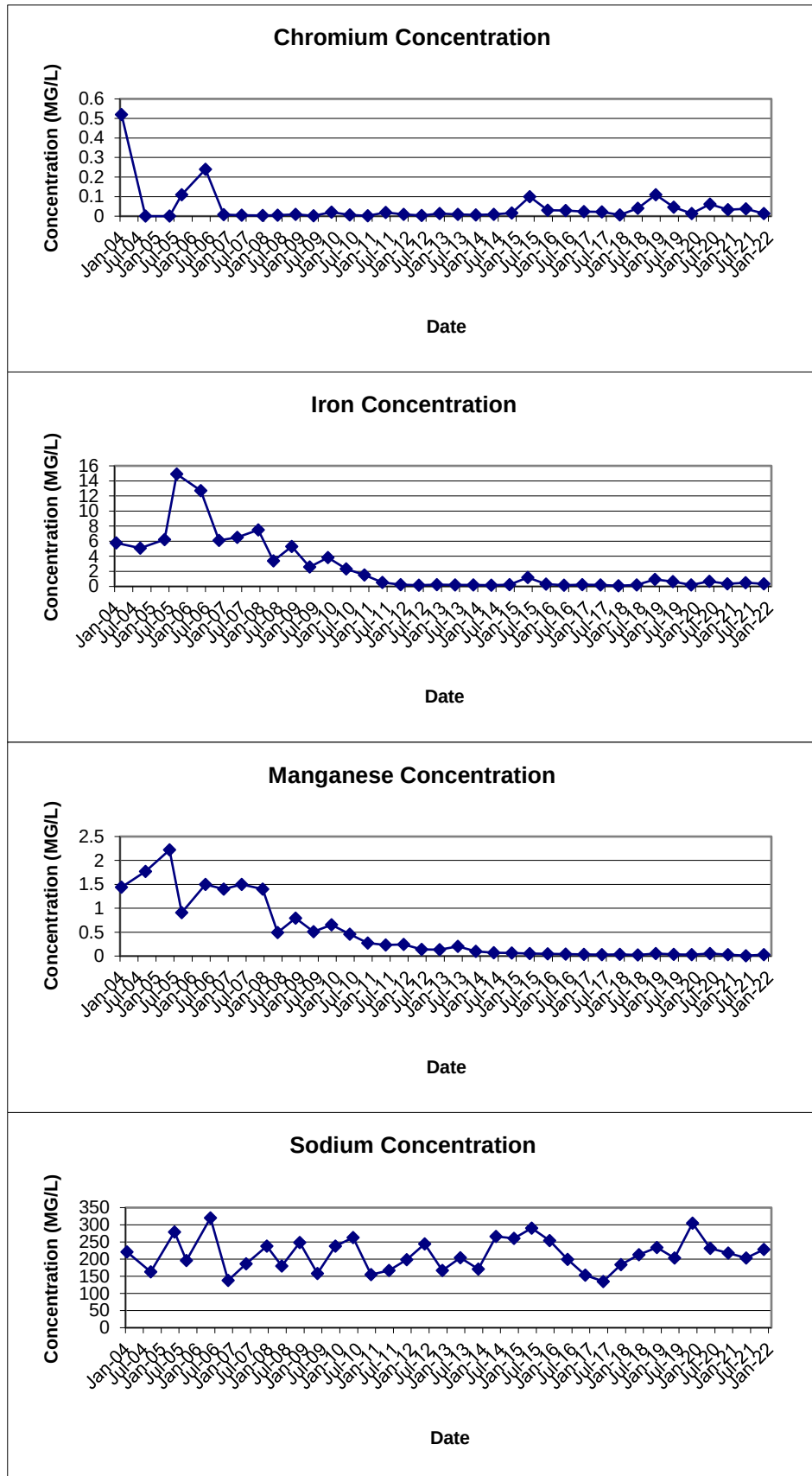


FIGURE E-10
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-08SR

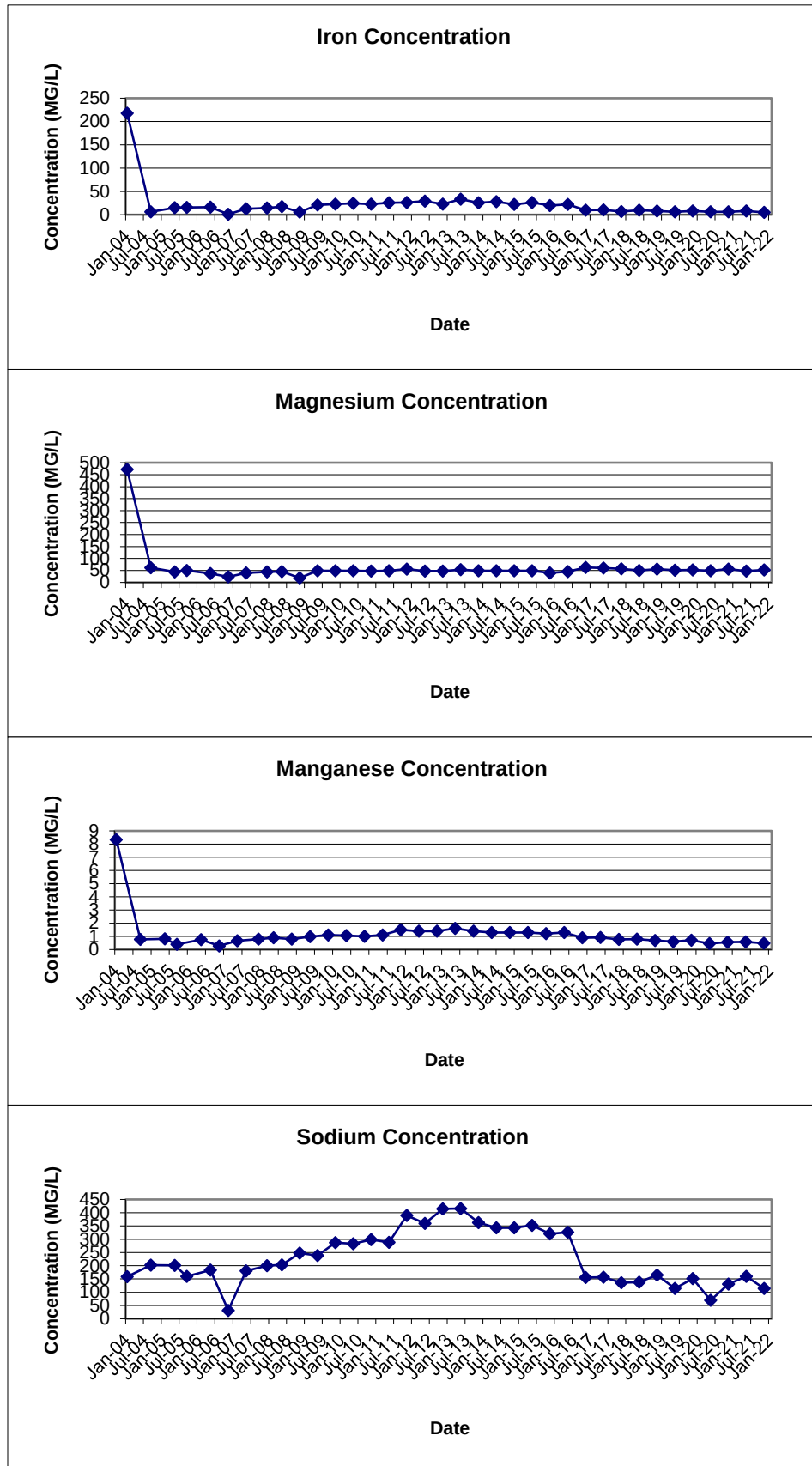


FIGURE E-11
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-26D

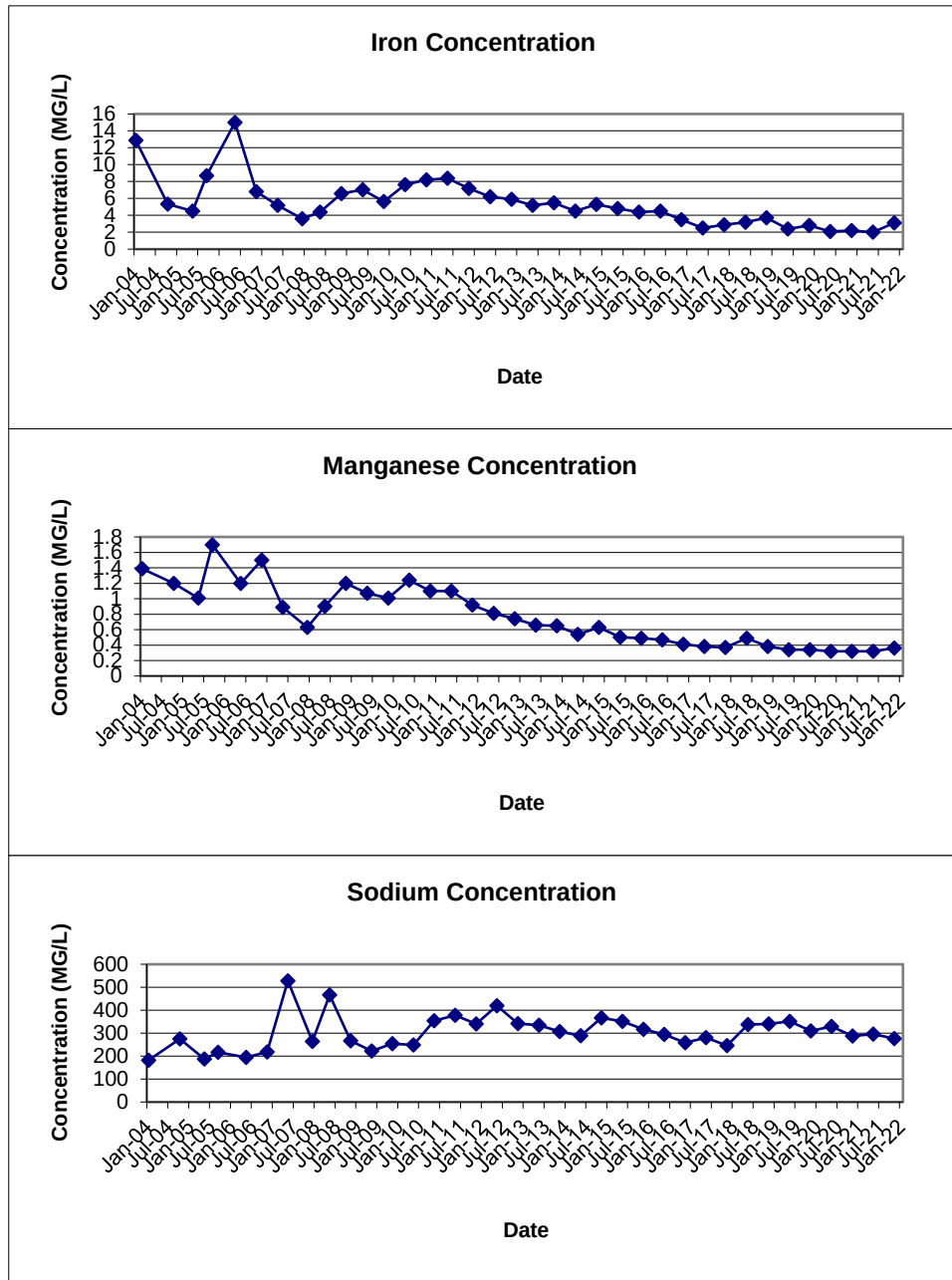


FIGURE E-12
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-28S

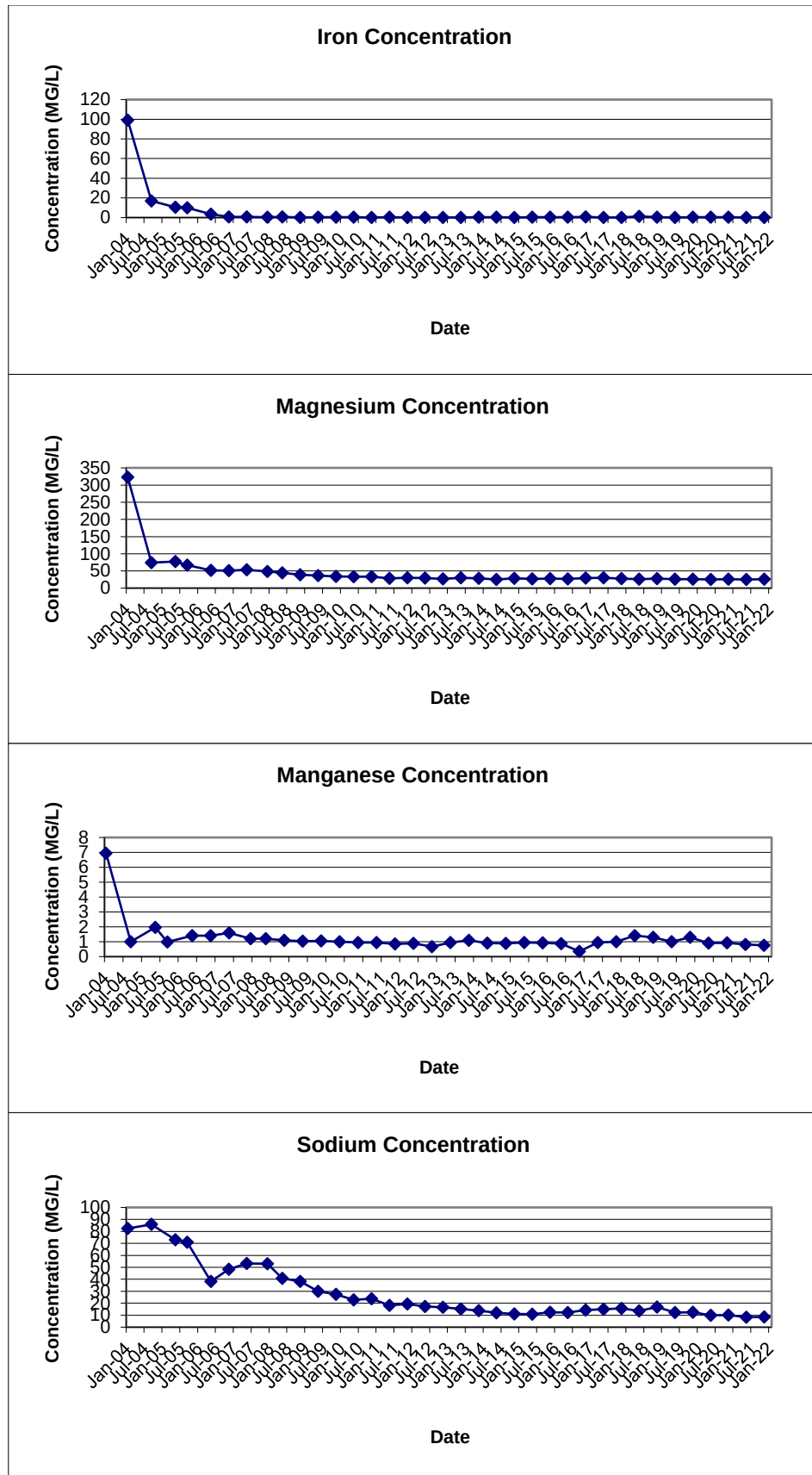


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

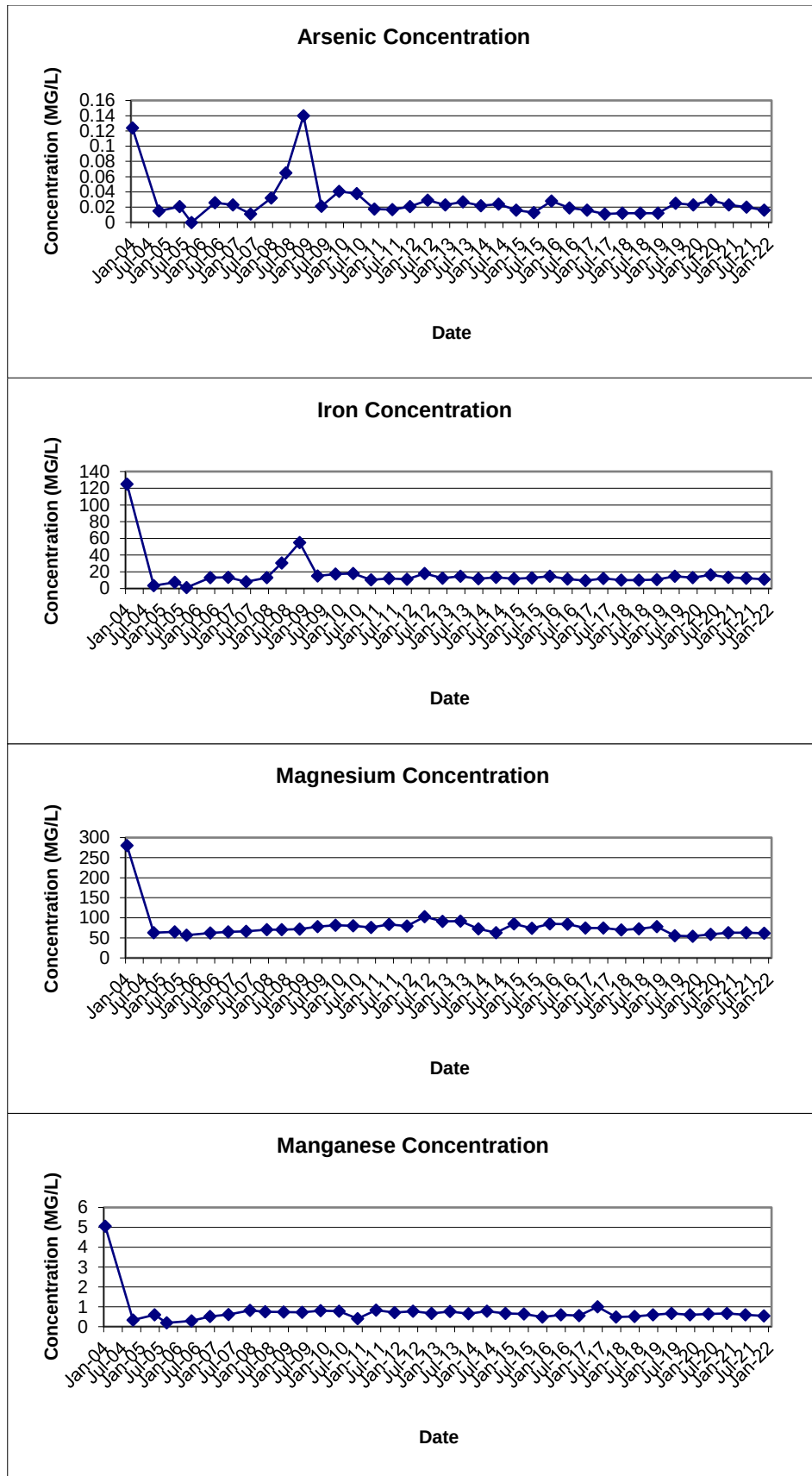


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

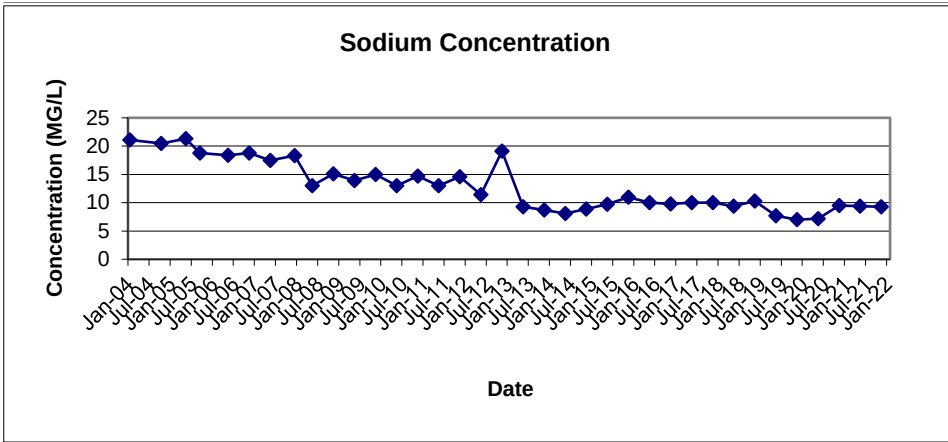


FIGURE E-14
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-30S

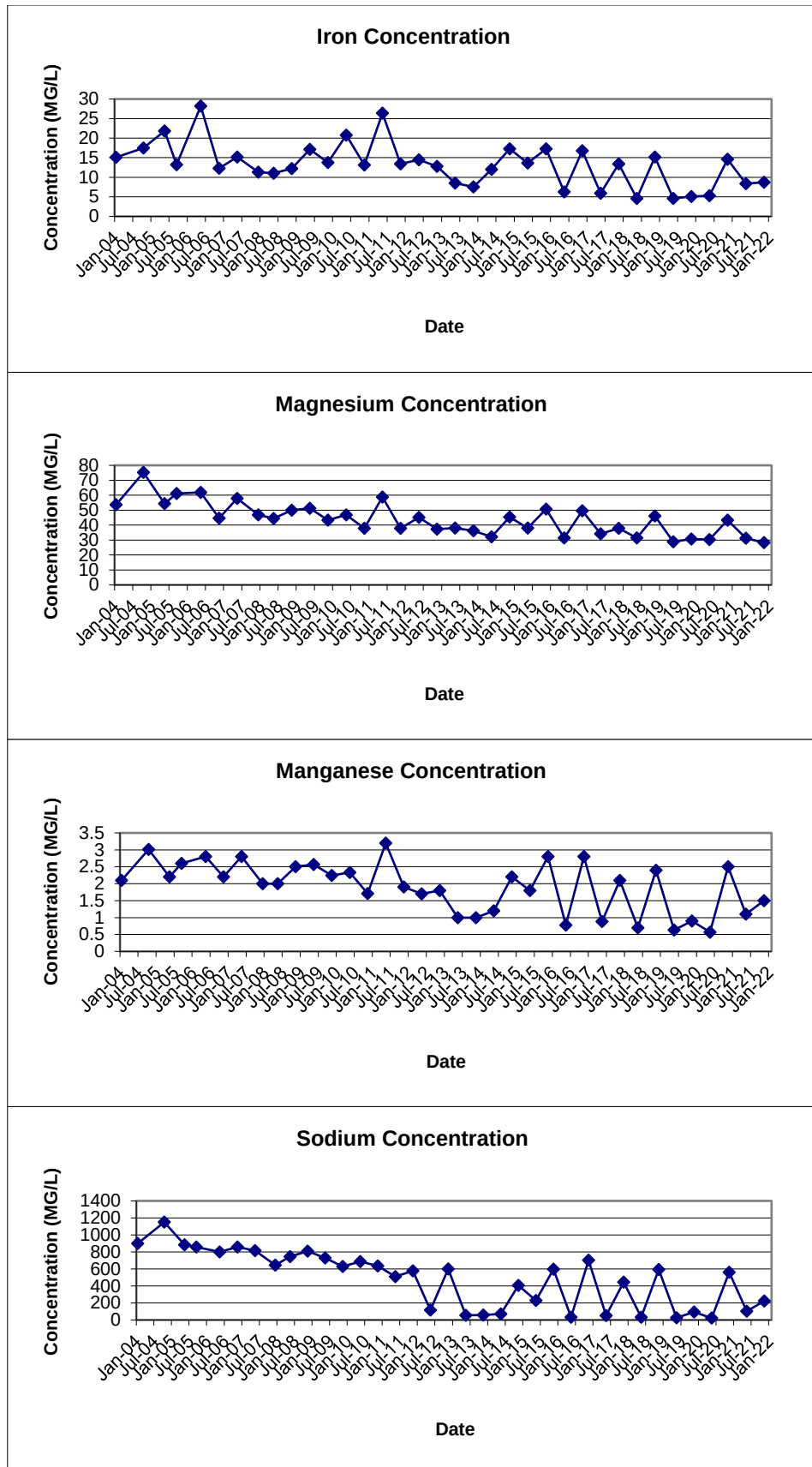


FIGURE E-15
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-31S

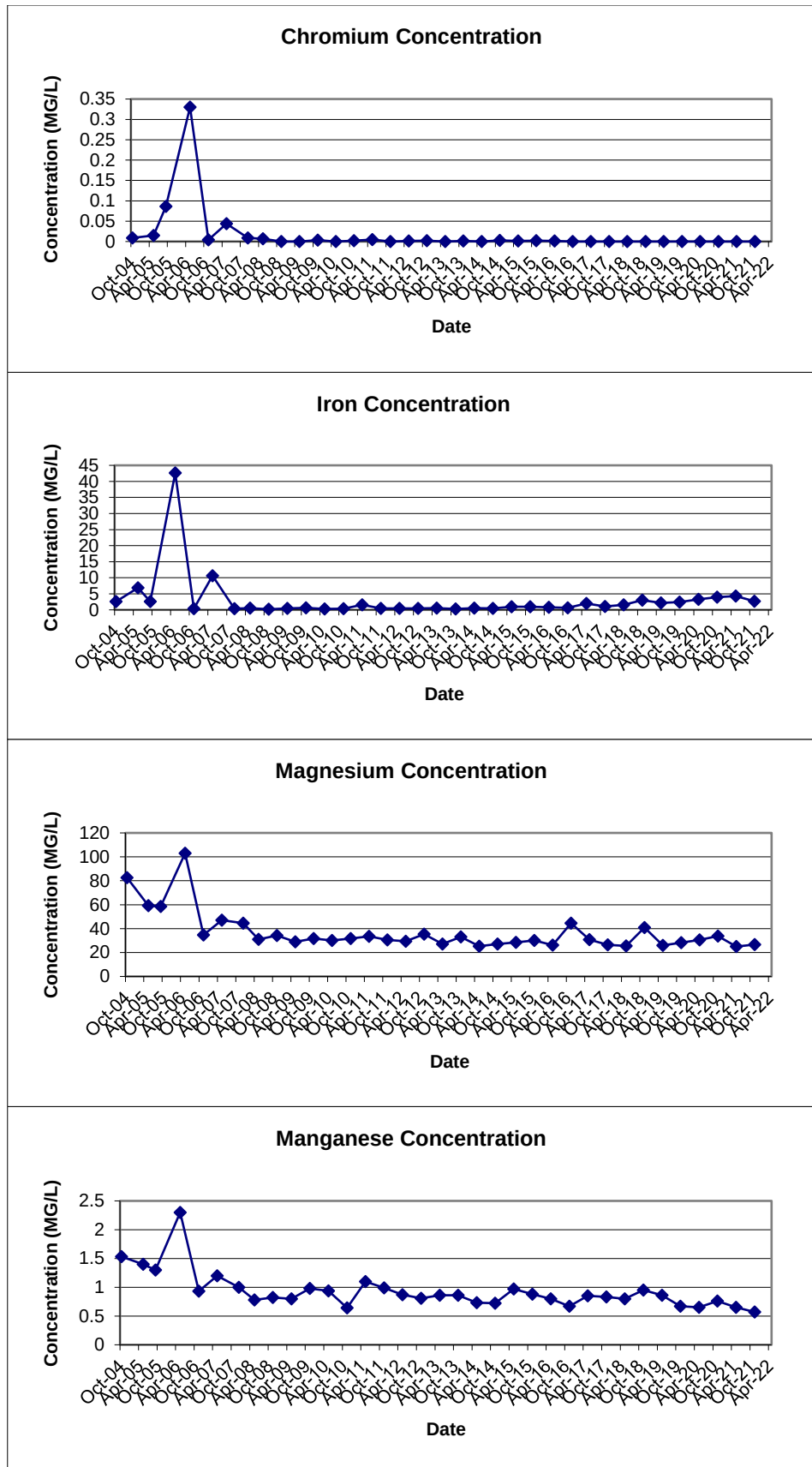


FIGURE E-16
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-32S

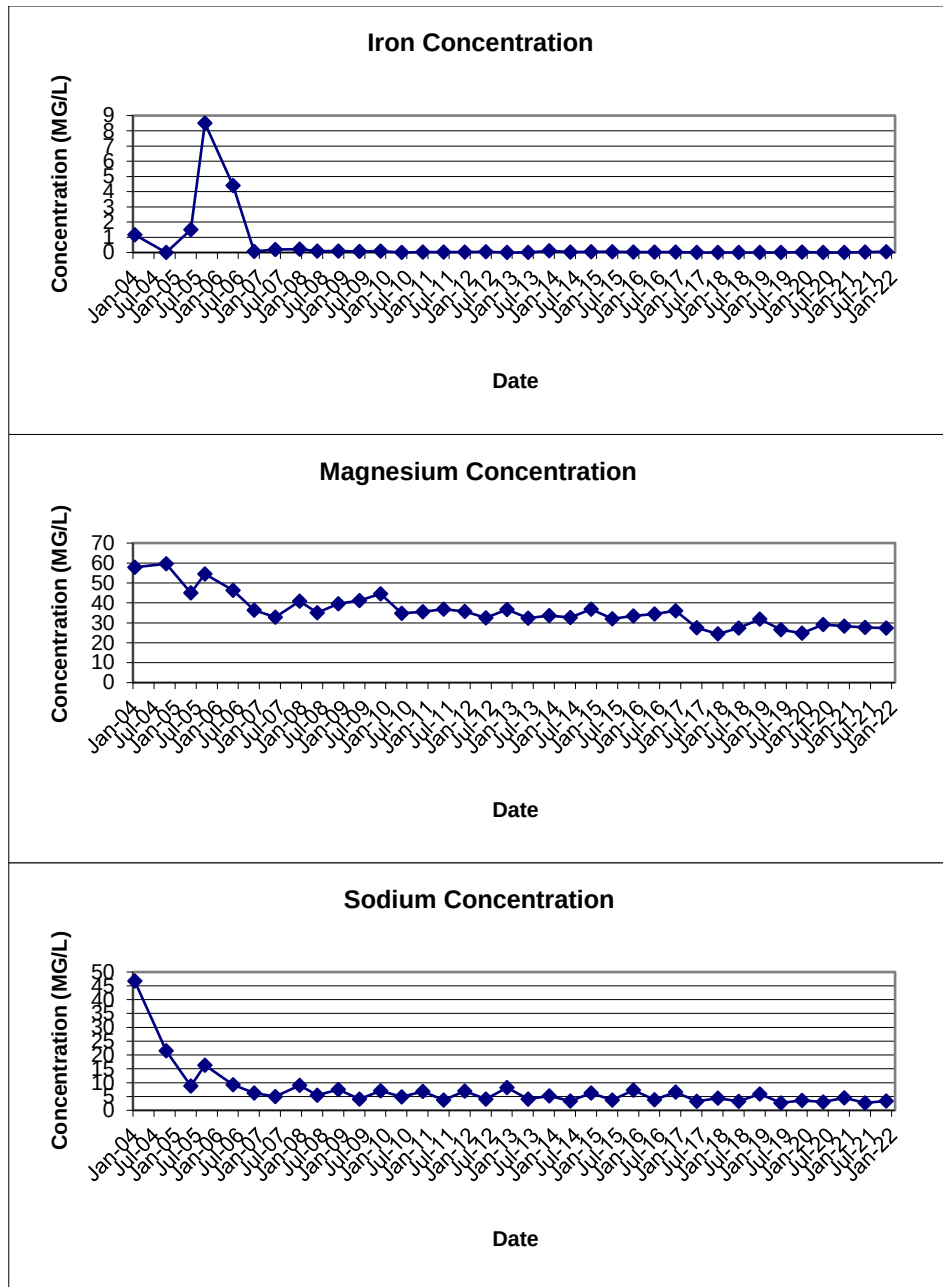


FIGURE E-17
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-33S

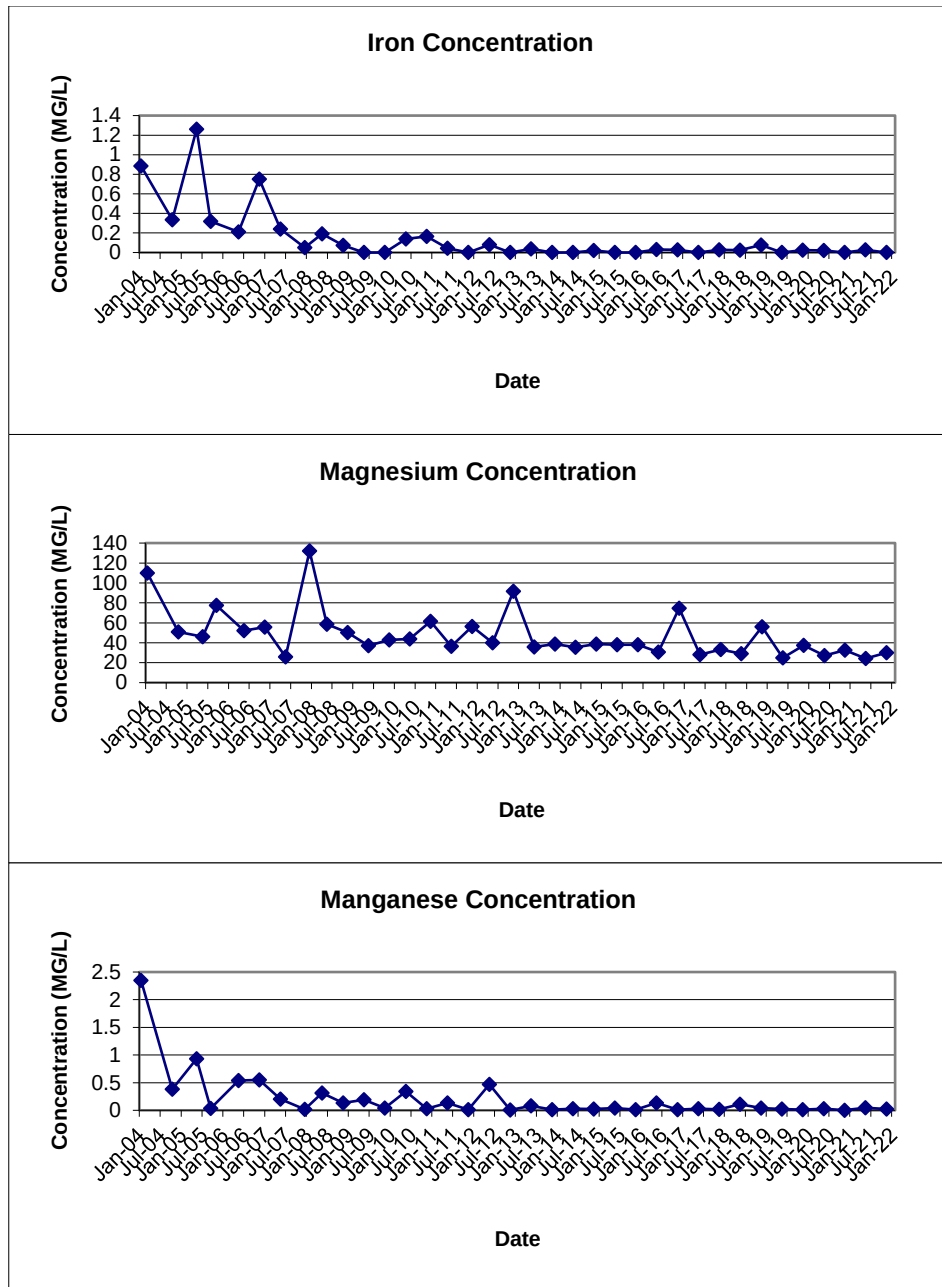


FIGURE E-18
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-34S

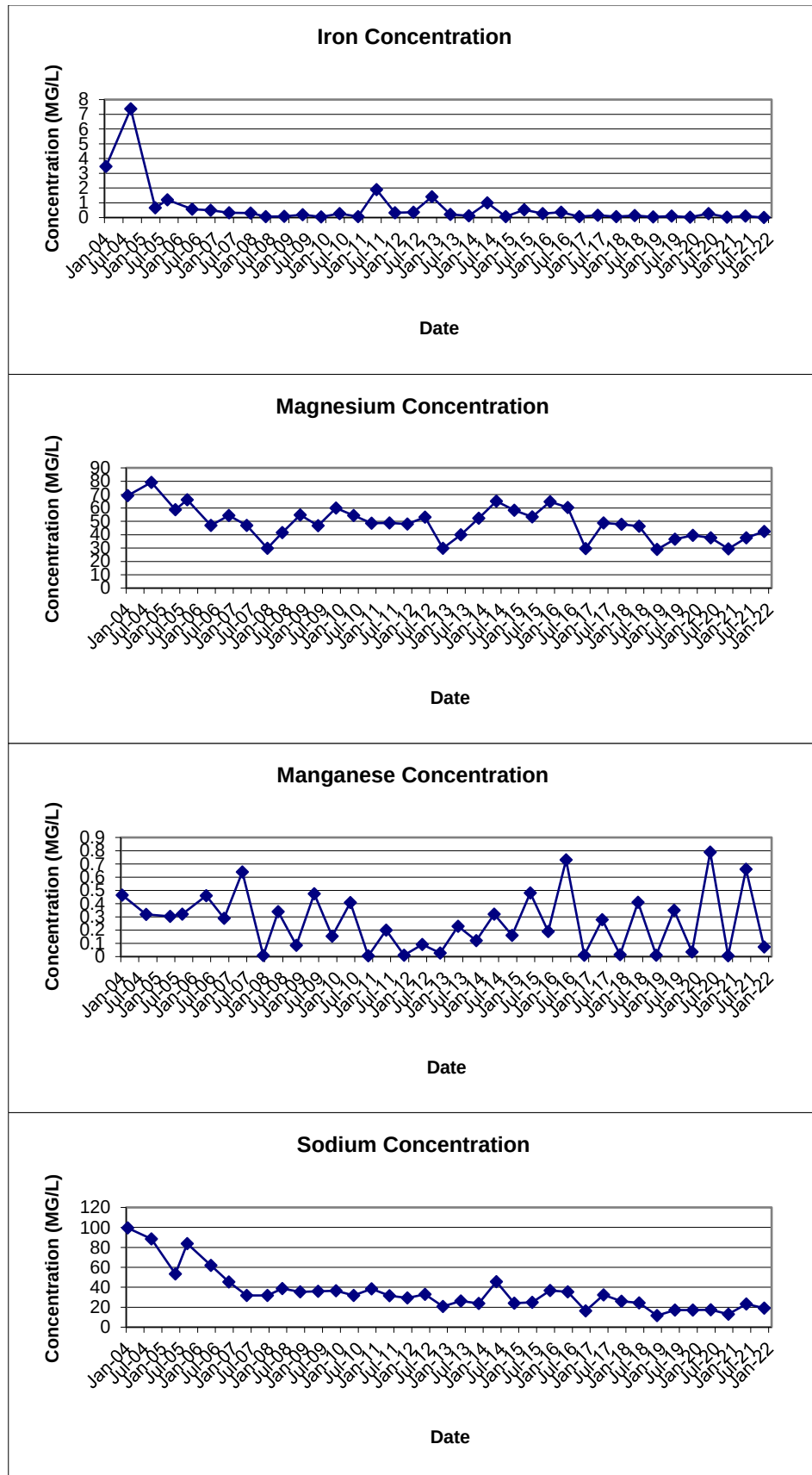
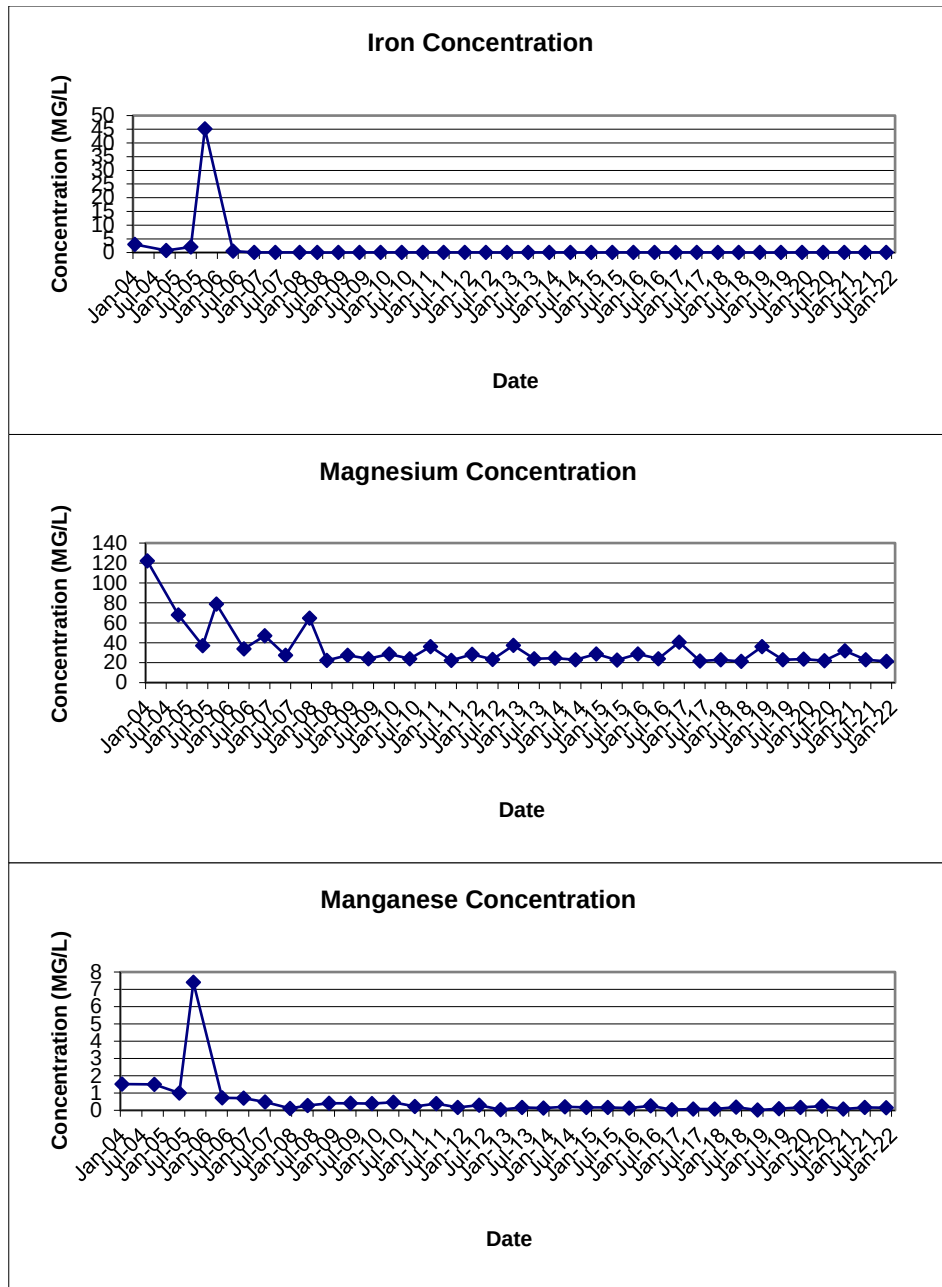


FIGURE E-19
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-35S



APPENDIX F

BSA PERMIT 19-04-CH016

**AUTHORIZATION TO DISCHARGE UNDER THE BUFFALO
POLLUTANT DISCHARGE ELIMINATION SYSTEM**

PERMIT NO. 19-04-CH016

USEPA Category 40 CFR Part 403

In accordance with the provisions of the Federal Water Pollution Control Act, as amended, and the
Sewer Regulations of the Buffalo Sewer Authority, authorization is hereby granted to:

THE TOWN OF CHEEKTOWAGA

to discharge wastewater from a facility located at:

PFOHL BROTHERS LANDFILL REMEDIATION SITE

1000 AERO DRIVE

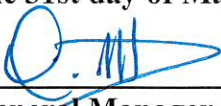
CHEEKTOWAGA, NEW YORK 14225

The wastewater permitted herein shall be discharged to the Town of Cheektowaga sewer system,
which is connected to the Buffalo Municipal Sewer System and Treatment facilities, and which
wastewater will be treated at the Buffalo Sewer Authority's Treatment Plant.

Issuance of this permit is based upon a permit application filed on **February 19, 2019** analytical
data. This permit is granted in accordance with discharge limitations, monitoring requirements and
other conditions set forth in Parts I and II hereof.

Effective this 1st^{day} of April, 2019

To Expire the 31st day of March, 2022



General Manager

Signed this 20th day of MARCH, 2019

RECEIVED

MAR 27 2019

ENGINEERING DEPT.

PART I: SPECIFIC CONDITIONS**A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS**

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **quarterly** by the permittee as specified below.

Sample Point	Parameter	Discharge Limitations ⁽¹⁾	Sampling Requirements	
		Daily Max	Period	Type
001	pH	5.0 – 12.0 S.U.	1 day	Composite ²
	Total Cadmium	1.17 lbs.	1 day	Composite ²
	Total Chromium	1.17 lbs.	1 day	Composite ²
	Total Copper	3.74 lbs.	1 day	Composite ²
	Total Lead	1.17 lbs.	1 day	Composite ²
	Total Nickel	3.27 lbs.	1 day	Composite ²
	Total Zinc	5.84 lbs.	1 day	Composite ²
	Total Barium	2.34 lbs.	1 day	Composite ²
	Total Suspended Solids ⁵	250 mg/l	1 day	Composite ²
	Total Flow	140,100 gallons ⁶	1 day	Discharge meter reading

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS**A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS**

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **once** by the permittee as specified below.

Sample Point	Parameter	Discharge Limitations⁽¹⁾	Sampling Requirements	
		Daily Max	Period	Type
001	Total Mercury	0.001 lbs.	1 day	Composite ²
	USEPA Test Method 608 ⁴	To be monitored	1 day	Grab ³
	USEPA Test Method 624 ⁴	To be monitored	1 day	Grab ³
	USEPA Test Method 625 ⁴	To be monitored	1 day	Grab ³

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS

B. DISCHARGE MONITORING REPORTING REQUIREMENTS

During the period beginning the effective date of this permit and lasting until the expiration date, discharge monitoring results shall be summarized and reported **quarterly** by the permittee on the days specified below:

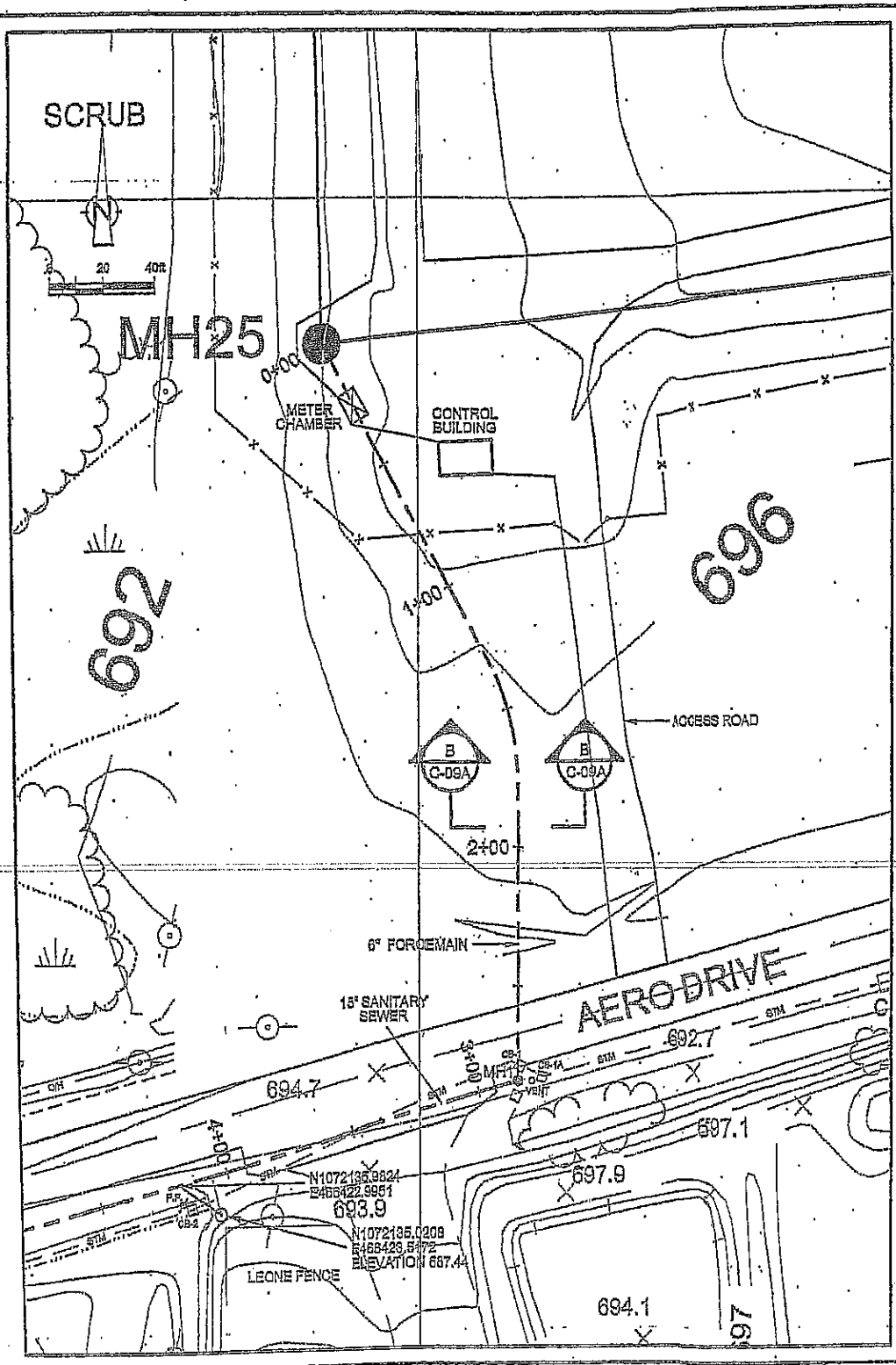
Sample Point	Parameter	Reporting Requirements	
		Initial Report	Subsequent Reports
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	June 30, 2019	Every March 31 st , June 30 th , September 30 th and December 31 st
	USEPA Test Methods 608, 624 and 625 & T Mercury	June 30, 2019	

* Please submit new discharge permit application 6 months prior to the expiration of this permit*

PART I: SPECIFIC CONDITIONS

C. SPECIAL REQUIREMENTS

1. Mass limits based on an average discharge of 140,100 gpd.
2. Composite samples may be time proportioned.
3. Four grab samples must be collected at equally spaced intervals throughout the sample day. The four (4) grab samples must be composited by a NYSDOH certified laboratory prior to analysis.
4. The permittee must report any compound whose concentration is equal to or greater than 0.01 mg/L. The permittee is not authorized to discharge any of the parameters evaluated by these test procedures which may cause or contribute to a violation of water quality standards or harm the sewerage system. Any parameter detected may, at the discretion of the BSA, be specifically limited and incorporated in this permit.
5. Surchargeable over 250 mg/L.
6. Flow is an action level only. If the permittee consistently exceeds this level, the BSA must be notified so that this permit can be modified.



**TOWN OF CHEEKTOWAGA/BUFFALO POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT**

PART II GENERAL CONDITIONS

A. MONITORING AND REPORTING

1. Local Limits

Except as otherwise specified in this permit, the permit holder shall comply with all specific prohibitions, limits on pollutants or pollutant parameters set forth in the Buffalo Sewer Authority Sewer Use Regulations, as amended from time to time, and such prohibitions, limits and parameters shall be deemed pretreatment standards for purposes of the Clean Water Act

2. Definitions

Definitions of terms contained in this permit are as defined in the Town of Cheektowaga Local Law No. 2 and the Buffalo Sewer Authority Sewer Use Regulations.

3. Discharge Sampling Analysis

All Wastewater discharge samples and analyses and flow measurements shall be representative of the volume and character of the monitored discharge. Methods employed for flow measurements and sample collections and analyses shall conform to the Buffalo Sewer Authority "Sampling Measurement and Analytical Guidelines Sheet."

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of the permit, the Permittee shall record the information as required in the "Sampling Measurement and Analytical Guidelines Sheet."

5. Additional Monitoring by Permittee

If the Permittee monitors any pollutants at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified in 40 CFR Part 136 the results of such monitoring shall be included in the calculation and reporting of values required under Part I, B. Such increased frequency shall also be indicated.

6. Reporting

All reports prepared in accordance with this Permit shall be submitted to:

**Patrick Bowen, P.E.
Town Engineer
275 Alexander Ave.
Cheektowaga, New York, 14211**

All self-monitoring reports shall be prepared in accordance with the BSA "Sampling Measurement and Analytical Guidelines Sheet." These reporting requirements shall not relieve the Permittee of any other reports, which may be required by the

N.Y.S.D.E.C. or the U.S.E.P.A.

B. PERMITTEE REQUIREMENTS

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit and with the information contained in the TC/BPDES Permit Application on which basis this permit is granted. In the event of any facility expansions, production increases, process modifications or the installation, modification or repair of any pretreatment equipment which may result in new, different or increased discharges of pollutants, a new TC/BPDES Permit Application must be submitted prior to any change. Following receipt of an amended application, the BSA may modify this permit to specify and limit any pollutants not previously limited. In the event that the proposed change will be covered under an applicable Categorical Standard, a Baseline Monitoring Report must be submitted at least ninety (90) days prior to any discharge.

2. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, calibration and maintenance of instrumentation, and recordings from continuous monitoring instrumentation shall be retained at this facility for a minimum of three (3) years, or longer if requested by the General Manager and/or Town Engineer.

3. Notification of Slug, Accidental Discharge or Spill

In the event that a slug, accidental discharge or any spill occurs at the facility for which this permit is issued, it is the responsibility of the Permittee to immediately notify the B.S.A. Treatment Plant at 883-1820 of the quantity and character of such discharge. If requested by the B.S.A., within five (5) days following all such discharges, the Permittee shall submit a report describing the character and duration of the discharge, the cause of the discharge, and measures taken or that will be taken to prevent a recurrence of such discharge.

4. Noncompliance Notification

If, for any reason, the Permittee does not comply with or will be unable to comply with any discharge limitation specified in this permit, the Permittee or their assigns must verbally notify the Industrial Waste Section at 883-1820 within twenty-four (24) hours of becoming aware of the violation. The Permittee shall provide the Industrial Waste Section with the following information, in writing, within five (5) days of becoming aware of such condition:

- a. a description of the discharge and cause of noncompliance and;
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

5. Adverse Impact

The Permittee shall take all reasonable steps to minimize any adverse impact to the Buffalo and Town Sewerage System resulting from noncompliance with any discharge limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

6. Waste Residuals

Solids, sludges, filter backwash or other pollutants removed in the course of treatment or control of wastewaters and/or the treatment of intake waters, shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the Buffalo or Town Sewer System.

7. Power Failures

In order to maintain compliance with the discharge limitations and prohibitions of this permit, the Permittee shall provide an alternative power source sufficient to operate the wastewater control facilities; or, if such alternative power source is not provided the Permittee shall halt, reduce or otherwise control production and/or controlled discharges upon the loss of power to the wastewater control facilities.

8. Treatment Upsets

- a. Any industrial user which experiences an upset in operations that places it in a temporary state of noncompliance, which is not the result of operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation, shall inform the Industrial Waste Section immediately upon becoming aware of the upset. Where such information is given verbally, a written report shall be filed by the user within five (5) days. The report shall contain:
 - (i) A description of the upset, its cause(s) and impact on the discharger's compliance status.
 - (ii) The duration of noncompliance, including exact dates and times of noncompliance, and if the noncompliance is continuing, the time by which compliance is reasonably expected to be restored
 - (iii) All steps taken or planned to reduce, eliminate, and prevent recurrence of such an upset.
- b. An industrial user which complies with the notification provisions of this Section in a timely manner shall have an affirmative defense to any enforcement action brought by the Industrial Waste Section/Town Engineer for any noncompliance of the limits in this permit, which arises out of violations attributable to and alleged to have occurred during the period of the documented and verified upset.

9. Treatment Bypasses

- a. A bypass of the treatment system is prohibited unless the following conditions are met:
 - (i) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; or
 - (ii) There was no feasible alternative to the bypass, including the use of auxiliary treatment or retention of the wastewater; and
 - (iii) The industrial user properly notified the Industrial Waste Section as described in paragraph b. below.
- b. Industrial users must provide immediate notice to the Industrial Waste Section upon delivery of an unanticipated bypass. If necessary, the Industrial Waste Section may require the industrial user to submit a written report explaining the cause(s), nature, and duration of the bypass, and the steps being taken to prevent its recurrence.
- c. An industrial user may allow a bypass to occur which does not cause pretreatment standards or requirements to be violated, but only if it is for essential maintenance to ensure efficient operation of the treatment system. Industrial users anticipating a bypass must submit notice to the Industrial Waste Section at least ten (10) days in advance. The Industrial Waste Section may only approve the anticipated bypass if the circumstances satisfy those set forth in paragraph a. above.

C. PERMITTEE RESPONSIBILITIES

1. Permit Availability

The originally signed permit must be available upon request at all times for review at the address stated on the first page of this permit.

2. Inspections

The Permittee shall allow the representatives of the Buffalo Sewer Authority or Town of Cheektowaga upon the presentation of credentials and during normal working hours or at any other reasonable times, to have access to and copy any records required in this permit; and to sample any discharge of pollutants.

3. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities for which this permit has been issued the permit shall become null and void. The succeeding owner shall submit a completed Town of Cheektowaga/ Buffalo Sewer Authority permit application prior to discharge to the sewer system.

D. PERMITTEE LIABILITIES

1. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to the following:

- a. Violation of any terms or conditions of this permit,
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts,
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

2. Imminent Danger

In the event there exists an imminent danger to health or property, the permitter reserves the right to take immediate action to halt the permitted discharge to the sewerage works.

3. Civil and Criminal Liability

Nothing in this permit shall relieve the Permittee from any requirements, liabilities, or penalties under provisions of the Town of Cheektowaga Local Law No. 2, the "Sewer Regulations of the Buffalo Sewer Authority" or any Federal, State and/or local laws or regulations.

4. Penalties for Violations of Permit Conditions

The "Sewer Regulations of the Buffalo Sewer Authority" and Town of Cheektowaga Local Law No. 2, provide that any person who violates a B.P.D.E.S. permit condition is liable to the Authority and/or the Town for a civil penalty of up to \$10,000 per day for each violation. Any person who willfully or negligently violates permit conditions will be referred to the New York State Attorney General.

E. NATIONAL PRETREATMENT STANDARDS

If a pretreatment standard or prohibition (including any Schedule of Compliance specified in such pretreatment standard or prohibition) is established under Section 307 (b) of the Act for a pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with such pretreatment standard or prohibition.

F. PLANT CLOSURE

In the event of plant closure, the Permittee is required to notify the Industrial Waste Section/Town Engineer in writing as soon as an anticipated closure date is determined, but in no case later than five (5) days of the actual closure.

G. CONFIDENTIALITY

Except for data determined to be confidential under Section 308 of the Act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Buffalo Sewer Authority or Town Engineer of the Town of Cheektowaga. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

H. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

APPENDIX G

DISCHARGE REPORT SUMMARY TABLES

SAMPLING FIELD SHEET



Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

Contact: Patrick T. Bowen, P.E. Phone: 716-897-7288

Installation:

Sample Point: SP-001

Sample Location: Meter Chamber - ball valve on 6" HDPE forcemain

Date: 9/16/21 Crew: R. Murphy, T. Urban

Weather: 65 °F, mostly sunny

Sampling Device: NA

Time of Installation: 9:15 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: Wells WW-05 and WW-06 running at the time of sample set-up.

PLC display volumes: WW-01 (171,305 gals), WW-02 (-5 gals), WW-03 (0 gals),

WW-04 (34,422 gals), WW-05 (777,101 gals), WW-06 (525,072 gals) & MH-25 (1,536,993 gals).

Date: 9/17/21 Crew: R. Murphy, T. Urban

Weather: 72 °F, sunny

Time of Collection: 9:45

Field Measurements:

9:45/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10
(time/initial)

pH Measurement: 7.43 Oakton pH Tester30, s/n T311487089

Temperature: 19.1 °C

Identification: EFF-091721

Physical Observations: Light red tint, some floating iron particulates

Laboratory: Eurofins TestAmerica, Buffalo, NY

Comments: Well WW-06 running at the time of sample collection.

PLC display volumes: WW-01 (171,305 gals), WW-02 (-5 gals), WW-03 (0 gals),

WW-04 (34,422 gals), WW-05 (777,380 gals), WW-06 (580,052 gals) & MH-25 (1,592,123 gals).

Reviewed By: Robert J. Murphy Date: 9/17/21
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
SEPTEMBER 2021**

Sample ID	EFF-091721			
Matrix	Effluent Water			
Date Sampled	9/17/2021			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Yes/No)
Total Barium	0.23	0.11	2.34	No
Total Cadmuim	< ⁽¹⁾ 0.0005	< 0.00023	1.17	No
Total Chromium	< 0.0010	< 0.0005	1.17	No
Total Copper	0.0047 J	0.0022	3.74	No
Total Lead	< 0.0030	< 0.0014	1.17	No
Total Nickel	0.0018 J	0.0008	3.27	No
Total Zinc	0.0011 B	0.0005	5.84	No
Total Suspended Solids	11.6	NA ⁽²⁾	250 ⁽³⁾	No
pH ⁽⁴⁾	7.43	NA	5.0 - 12.0	No
Total Flow ⁽⁵⁾		55,130	140,100	No

Notes:

- (1) < = Compound not detected, method detection limit shown
- (2) NA = Not Applicable
- (3) Discharge Limitation in units of mg/L
- (4) pH measurement and Discharge Limitation in Standard Units
- (5) Total Flow reported in gallons, sample was collected over a 24 hour period
- J Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
- B Compound was found in the blank and sample.

$$\text{Calculation: } \left(\frac{x \text{ mg}}{\text{L}} \right) \left(\frac{y \text{ gal}}{\text{day}} \right) \left(\frac{1 \text{ lb}}{453,600 \text{ mg}} \right) \left(\frac{3.785 \text{ L}}{\text{gal}} \right) = \frac{x \times y}{119,841} \frac{\text{lb}}{\text{day}}$$

mg = milligrams
gal = gallons
L = Liters
lb(s) = pound(s)

SAMPLING FIELD SHEET



Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

Contact: Patrick T. Bowen, P.E. Phone: 716-897-7288

Installation:

Sample Point: SP-001

Sample Location: Meter Chamber - ball valve on 6" HDPE forcemain

Date: 12/21/21 Crew: R. Murphy, T. Urban

Weather: 31 °F, partly sunny

Sampling Device: NA

Time of Installation: 8:40 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: Well WW-04 running at the time of sample set-up.

PLC display volumes: WW-01 (514,116 gals), WW-02 (-5 gals), WW-03 (60,566 gals),
WW-04 (499,762 gals), WW-05 (1,677,395 gals), WW-06 (1,775,542 gals) & MH-25 (4,554,841 gals).

Date: 12/22/21 Crew: R. Murphy, T. Urban

Weather: 31 °F, cloudy

Time of Collection: 9:45

Field Measurements:

8:40/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10
(time/initial)

pH Measurement: 7.89 Oakton pH Tester30, s/n T311487089

Temperature: 7.9 °C

Identification: EFF-122221

Physical Observations: Light red tint, trace floating iron particulates

Laboratory: Eurofins TestAmerica, Buffalo, NY

Comments: No wells running at the time of sample collection.

PLC display volumes: WW-01 (514,116 gals), WW-02 (-5 gals), WW-03 (60,566 gals),
WW-04 (504,464 gals), WW-05 (1,677,395 gals), WW-06 (1,775,542 gals) & MH-25 (4,559,461 gals).

Reviewed By: Robert J. Murphy Date: 12/22/21
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
DECEMBER 2021**

Sample ID	EFF-122221			
Matrix	Effluent Water			
Date Sampled	12/22/2021			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Yes/No)
Total Barium	0.24	0.01	2.34	No
Total Cadmuim	< ⁽¹⁾ 0.0005	< 0.00002	1.17	No
Total Chromium	< 0.0010	< 0.00004	1.17	No
Total Copper	< 0.0016	< 0.0001	3.74	No
Total Lead	< 0.0030	< 0.0001	1.17	No
Total Nickel	0.0023 J	0.0001	3.27	No
Total Zinc	0.0026 J	0.0001	5.84	No
Total Suspended Solids	10.0	NA ⁽²⁾	250 ⁽³⁾	No
pH ⁽⁴⁾	7.89	NA	5.0 - 12.0	No
Total Flow ⁽⁵⁾		4,620	140,100	No

Notes:

- (1) < = Compound not detected, method detection limit shown
- (2) NA = Not Applicable
- (3) Discharge Limitation in units of mg/L
- (4) pH measurement and Discharge Limitation in Standard Units
- (5) Total Flow reported in gallons, sample was collected over a 24 hour period
- J Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

$$\text{Calculation: } \left(\frac{x \text{ mg}}{\text{L}} \right) \left(\frac{y \text{ gal}}{\text{day}} \right) \left(\frac{1 \text{ lb}}{453,600 \text{ mg}} \right) \left(\frac{3.785 \text{ L}}{\text{gal}} \right) = \frac{x \times y}{119,841} \frac{\text{lb}}{\text{day}}$$

mg = milligrams
gal = gallons
L = Liters
lb(s) = pound(s)

APPENDIX H

MONITORING WELL INSPECTION LOGS

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date(s) of Inspection: November 22, 2021

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-01S	OK	OK	OK	Bulged	3.12	14.94	
GW-01D	OK	OK	OK	Bulged	2.37	39.65	
GW-03S	OK	OK	OK	OK	2.16	13.22	
GW-03D	OK	OK	OK	OK	1.5	35.70	
GW-04S	OK	OK	OK	OK	3.89	16.23	
GW-04D	OK	OK	OK	OK	12.04	45.57	
GW-07S	OK	OK	OK	OK	4.16	35.33	
GW-07D	OK	OK	OK	Damaged	43.66	60.83	

Additional Comments:

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date(s) of Inspection: November 22, 2021

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-08SR	OK	OK	OK	OK	5.04	13.02	
GW-08D	OK	OK	OK	OK	5.46	36.54	
GW-26D	OK	OK	OK	OK	6.33	40.70	
GW-28S	OK	OK	OK	OK	8.19	15.52	
GW-29S	OK	OK	OK	OK	6.31	20.04	
GW-30S	OK	OK	OK	OK	7.43	17.97	
GW-31S	OK	OK	OK	OK	2.42	9.57	
GW-32S	OK	OK	OK	OK	2.16	9.93	

Additional Comments:

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, A. M. Kropovitch Supervisor: R. Murphy

Date(s) of Inspection: November 22, 2021

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-33S	OK	OK	OK	OK	3.06	8.21	
GW-34S	OK	OK	OK	OK	2.16	10.01	
GW-35S	OK	OK	OK	OK	2.96	7.46	

Additional Comments:

DATA APPLICABILITY REPORT

SEMI-ANNUAL GROUNDWATER MONITORING

PFOHL BROTHERS LANDFILL SITE

Analyses Performed by:

**EUROFINS TESTAMERICA, BUFFALO
10 HAZELWOOD DRIVE
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Prepared for:

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JANUARY 2022

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TABLES (Following Text)

Table 1	Validated Groundwater Sample Results
Table 2	Validated Field QC Sample Results

APPENDICES

Appendix A – Validated Sample Reporting Forms
Appendix B – Support Documentation

I. INTRODUCTION

This Data Applicability Report (DAR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 2B-Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, May 2010. This DAR discusses the usability of the analytical data for groundwater samples collected during the May 2021 semi-annual monitoring program at the Pfohl Brothers Landfill Site, located in Cheektowaga, NY.

II. ANALYTICAL METHODOLOGIES and DATA APPLICABILITY PROCEDURES

The data being evaluated are from the November 22-24, 2021 sampling of nineteen (19) groundwater samples, one (1) field duplicate, one (1) matrix spike (MS)/matrix spike duplicate (MSD) pair, and two (2) trip blanks. The analytical laboratory that performed the analyses was Eurofins TestAmerica, Buffalo located in Amherst, NY. The samples were analyzed for the following project specific parameters: Volatile Organic Compounds (VOCs) following United States Environmental Protection Agency (USEPA) Method 8260C, Semivolatile Organic Compounds (SVOCs) by USEPA Method 8270D, and metals by USEPA Methods 6010C/7470A. Not all samples were analyzed for all parameters.

A limited data review was performed in accordance with the following USEPA guidelines:

- *Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B & 8260C, SOP HW-24, Rev. 4, October 2014;*
- *Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8270D, SOP HW-22, Rev. 5, December 2010;*
- ICP-AES Data Validation, SOP HW-3a, Rev. 1, September 2016; and
- Mercury and Cyanide Data Validation, SOP HW-3c, Rev. 1, September 2016.

The data applicability evaluation included a review of completeness of all required deliverables; holding times; quality control (QC) results (blanks, matrix spike recoveries, duplicate analyses, and laboratory control sample recoveries) to determine if the data are within the protocol-required QC limits and specifications; a determination that all samples were analyzed using established and agreed upon analytical protocols; and a review of laboratory data qualifiers.

Definitions of USEPA data qualifiers are presented at the end of this text. The analytical results are presented on Table 1 (groundwater) and Table 2 (field QC). Copies of the laboratory results (i.e., sample reporting forms) are presented in Appendix A. Documentation supporting the qualification of data is presented in Appendix B. Only analytical deviations affecting data usability are discussed in this report.

III. DATA DELIVERABLE COMPLETENESS

In accordance with the project requirements, limited deliverable data packages (level 2) were provided by the laboratory, which only consisted of analytical summaries, QC reporting forms, case narratives, and chain-of-custody documentation.

IV. SAMPLE RECEIPT/PRESERVATION/HOLDING TIMES

All samples were received by the laboratory intact, properly preserved and under proper chain-of-custody (COC). All samples were analyzed within the required holding times (HT).

Due to the low recharge rates of monitoring wells GW-07D and GW-07S, the VOC aliquots were collected on 11/22/21, while the SVOC/metals aliquots were collected on 11/23/21. For the same reason sample GW-04S had the VOC aliquots collected at 1545 and the SVOC/metals aliquots collected at 1722 on 11/22/21.

V. NON-CONFORMANCES

Laboratory Method Blanks

Manganese (Mn) was detected in the laboratory method blank at a concentration greater than the reporting limit (RL). Since the concentration of Mn in the associated samples were greater than

the 10x the blank concentration, the 'B' qualifier applied by the laboratory has been removed. Those samples that had low levels of Mn were re-digested and re-analyzed with a non-detect method blank.

VI. SAMPLE RESULTS AND REPORTING

All RLs were reported in accordance with method requirements and were adjusted for sample size and dilution factors (if applicable). Results for compounds/analytes detected below the RL are qualified 'J' by the laboratory.

A field duplicate was collected at groundwater location GW-26D. The field duplicate results exhibited good field and analytical precision.

VII. SUMMARY

All sample analyses were found to be compliant with the method criteria, except where previously noted. All results qualified 'J' are conditionally usable. All other sample results are usable as reported. AECOM does not recommend the recollection of any samples.

Prepared By: Ann Marie Kropovitch, Chemist

Date: 1/27/22

Reviewed by: Peter R. Fairbanks, Senior Chemist

Date: 1/27/22

DEFINITIONS OF USEPA DATA QUALIFIERS

- U – The analyte was analyzed for, but was not detected above the level of the sample reporting limit.
- J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ – The metal result is an estimated quantity, but the result may be biased high.
- J- – The metal result is an estimated quantity, but the result may be biased low.
- UJ – The analyte was analyzed for, but not detected. The reporting limit is approximate and may be inaccurate or imprecise.
- R – The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID		GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/22/21	11/22/21	11/23/21	11/23/21	11/22/21
Parameter	Units					
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	10 U	10 U	2.9 J	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	4.1 J	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenol	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.097	0.25	0.076	0.095	0.094
Cadmium	MG/L	0.0010 U	0.00075 J	0.0010 U	0.0030	0.00082 J
Chromium	MG/L	0.019	0.0018 J	0.0040 U	0.018	0.0016 J
Copper	MG/L	0.0021 J	0.010 U	0.010 U	0.0041 J	0.010 U
Iron	MG/L	0.60	9.8	0.99	0.64	0.031 J
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	36.8	29.7	14.7	137	76.8
Manganese	MG/L	0.020	1.3	0.22	0.26	0.018
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.0053 J	0.010 U	0.0034 J	0.054	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 1/24/22

CHECKED BY: _PRF 1/27/22

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID		GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/22/21	11/22/21	11/23/21	11/23/21	11/22/21
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	131	201	167	91.9	96.8
Zinc	MG/L	0.0040 J	0.010 U	0.010 U	0.017	0.0017 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 1/24/22

CHECKED BY: __PRF 1/27/22

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/22/21	11/22/21	11/23/21	11/22/21	11/23/21
Parameter	Units					
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	NA	1.0 U	NA
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	NA	2.0 U	NA
Acetone	UG/L	10 U	10 U	NA	10 U	NA
Benzene	UG/L	1.0 U	1.0 U	NA	1.0 U	NA
Vinyl chloride	UG/L	1.0 U	1.0 U	NA	1.0 U	NA
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	10 U	NA	10 U	NA	10 U
1,4-Dichlorobenzene	UG/L	10 U	NA	10 U	NA	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	NA	2.2 J	NA	5.0 U
Phenol	UG/L	5.0 U	NA	5.0 U	NA	5.0 U
Metals						
Antimony	MG/L	0.020 U	NA	0.020 U	NA	0.020 U
Arsenic	MG/L	0.010 U	NA	0.010 U	NA	0.010 U
Barium	MG/L	0.13	NA	0.11	NA	0.44
Cadmium	MG/L	0.0014	NA	0.0036	NA	0.00079 J
Chromium	MG/L	0.011	NA	0.56	NA	0.0013 J
Copper	MG/L	0.0034 J	NA	0.037	NA	0.010 U
Iron	MG/L	1.4	NA	7.1	NA	0.22
Lead	MG/L	0.0050 U	NA	0.11	NA	0.0050 U
Magnesium	MG/L	28.2	NA	35.7	NA	46.3
Manganese	MG/L	0.13	NA	0.10	NA	0.033
Mercury	MG/L	0.00020 U	NA	0.00020 U	NA	0.00020 U
Nickel	MG/L	0.0079 J	NA	0.25	NA	0.0088 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 1/24/22

CHECKED BY: __PRF 1/27/22

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/22/21	11/22/21	11/23/21	11/22/21	11/23/21
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	NA	0.0030 U	NA	0.0030 U
Sodium	MG/L	29.9	NA	79.3	NA	60.4
Zinc	MG/L	0.014	NA	0.078	NA	0.0039 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 1/24/22

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Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-08D	GW-08SR	GW-26D	GW-26D	GW-28S
Sample ID		GW-08D	GW-08SR	FD-112321	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/23/21	11/23/21	11/23/21	11/23/21	11/24/21
Parameter	Units			Field Duplicate (1-1)		
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenol	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.077	0.086	0.11	0.11	0.078
Cadmium	MG/L	0.0010 U	0.00058 J	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.014	0.0018 J	0.0040 U	0.0040 U	0.0040 U
Copper	MG/L	0.0031 J	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	0.35	5.2	3.1	3.1	0.22
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	15.7	52.7	17.3	17.4	26.5
Manganese	MG/L	0.028	0.48	0.35	0.36	0.76
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.0062 J	0.010 U	0.0019 J	0.0017 J	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 1/24/22

CHECKED BY: _PRF 1/27/22

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-08D	GW-08SR	GW-26D	GW-26D	GW-28S
Sample ID		GW-08D	GW-08SR	FD-112321	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/23/21	11/23/21	11/23/21	11/23/21	11/24/21
Parameter	Units			Field Duplicate (1-1)		
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	228	114	266	276	8.5
Zinc	MG/L	0.0058 J	0.010 U	0.010 U	0.010 U	0.0023 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 1/24/22

CHECKED BY: __PRF 1/27/22

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/24/21	11/24/21	11/24/21	11/24/21	11/24/21
Parameter	Units					
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenol	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.016	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.18	0.17	0.088	0.055	0.079
Cadmium	MG/L	0.00050 J	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0040 U	0.0040 U	0.0040 U	0.0011 J	0.0011 J
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.0026 J	0.010 U
Iron	MG/L	11.1	8.7	2.7	0.042 J	0.050 U
Lead	MG/L	0.0041 J	0.0034 J	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	61.5	28.3	26.6	27.4	30.1
Manganese	MG/L	0.54	1.5	0.57	0.23	0.022
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.010 U	0.010 U	0.0019 J	0.0019 J	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 1/24/22

CHECKED BY: PRF 1/27/22

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/24/21	11/24/21	11/24/21	11/24/21	11/24/21
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	9.3	223	2.8	3.3	2.4
Zinc	MG/L	0.010 U	0.010 U	0.0041 J	0.0045 J	0.0018 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 1/24/22

CHECKED BY: _PRF 1/27/22

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-34S	GW-35S
Sample ID		GW-34S	GW-35S
Matrix		Groundwater	Groundwater
Depth Interval (ft)		-	-
Date Sampled		11/23/21	11/23/21
Parameter	Units		
Volatile Organic Compounds			
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U
Semivolatile Organic Compounds			
1,3-Dichlorobenzene	UG/L	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U
Phenol	UG/L	5.0 U	5.0 U
Metals			
Antimony	MG/L	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U
Barium	MG/L	0.11	0.086
Cadmium	MG/L	0.00066 J	0.0010 U
Chromium	MG/L	0.0020 J	0.0040 U
Copper	MG/L	0.010 U	0.010 U
Iron	MG/L	0.050 U	0.032 J
Lead	MG/L	0.0050 U	0.0050 U
Magnesium	MG/L	42.3	21.5
Manganese	MG/L	0.073	0.15
Mercury	MG/L	0.00020 U	0.00020 U
Nickel	MG/L	0.0026 J	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 1/24/22

CHECKED BY: _PRF 1/27/22

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-34S	GW-35S
Sample ID		GW-34S	GW-35S
Matrix		Groundwater	Groundwater
Depth Interval (ft)		-	-
Date Sampled		11/23/21	11/23/21
Parameter	Units		
Metals			
Silver	MG/L	0.0030 U	0.0030 U
Sodium	MG/L	19.2	2.5
Zinc	MG/L	0.010 U	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 1/24/22

CHECKED BY: _PRF 1/27/22_

Detection Limits shown are PQL

TABLE 2
VALIDATED FIELD QC SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		FIELDQC	FIELDQC
Sample ID		TB-112221	TB-112421
Matrix		Quality Control	Quality Control
Depth Interval (ft)		-	-
Date Sampled		11/23/21	11/24/21
Parameter	Units	Trip Blank (1-1)	Trip Blank (1-1)
Volatile Organic Compounds			
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 1/24/22

CHECKED BY: _PRF 1/27/22

Detection Limits shown are PQL

APPENDIX A

VALIDATED SAMPLE REPORTING FORMS

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-07S

Lab Sample ID: 480-192800-1

Date Collected: 11/22/21 10:20

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 16:06	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 16:06	1
Acetone	ND		10	3.0	ug/L			11/26/21 16:06	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 16:06	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 16:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		77 - 120		11/26/21 16:06	1
Toluene-d8 (Surr)	97		80 - 120		11/26/21 16:06	1
4-Bromofluorobenzene (Surr)	101		73 - 120		11/26/21 16:06	1
Dibromofluoromethane (Surr)	95		75 - 123		11/26/21 16:06	1

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-07D

Lab Sample ID: 480-192800-2

Date Collected: 11/22/21 10:15

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 16:29	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 16:29	1
Acetone	ND		10	3.0	ug/L			11/26/21 16:29	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 16:29	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 16:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		77 - 120		11/26/21 16:29	1
Toluene-d8 (Surr)	93		80 - 120		11/26/21 16:29	1
4-Bromofluorobenzene (Surr)	94		73 - 120		11/26/21 16:29	1
Dibromofluoromethane (Surr)	95		75 - 123		11/26/21 16:29	1

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-01D

Lab Sample ID: 480-192800-3

Date Collected: 11/22/21 14:20

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 16:52	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 16:52	1
Acetone	ND		10	3.0	ug/L			11/26/21 16:52	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 16:52	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 16:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120		11/26/21 16:52	1
Toluene-d8 (Surr)	92		80 - 120		11/26/21 16:52	1
4-Bromofluorobenzene (Surr)	93		73 - 120		11/26/21 16:52	1
Dibromofluoromethane (Surr)	98		75 - 123		11/26/21 16:52	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 17:47	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 17:47	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 17:47	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 17:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	81		41 - 120	11/24/21 14:25	12/01/21 17:47	1
2-Fluorobiphenyl	96		48 - 120	11/24/21 14:25	12/01/21 17:47	1
2-Fluorophenol	64		35 - 120	11/24/21 14:25	12/01/21 17:47	1
Nitrobenzene-d5	80		46 - 120	11/24/21 14:25	12/01/21 17:47	1
Phenol-d5	46		22 - 120	11/24/21 14:25	12/01/21 17:47	1
p-Terphenyl-d14	105		60 - 148	11/24/21 14:25	12/01/21 17:47	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/29/21 09:40	11/29/21 22:16	1
Arsenic	ND		0.010	0.0056	mg/L		11/29/21 09:40	11/29/21 22:16	1
Barium	0.097		0.0020	0.00070	mg/L		11/29/21 09:40	11/29/21 22:16	1
Cadmium	ND		0.0010	0.00050	mg/L		11/29/21 09:40	11/29/21 22:16	1
Chromium	0.019		0.0040	0.0010	mg/L		11/29/21 09:40	11/29/21 22:16	1
Copper	0.0021	J	0.010	0.0016	mg/L		11/29/21 09:40	11/29/21 22:16	1
Iron	0.60		0.050	0.019	mg/L		11/29/21 09:40	11/29/21 22:16	1
Lead	ND		0.0050	0.0030	mg/L		11/29/21 09:40	11/29/21 22:16	1
Magnesium	36.8		0.20	0.043	mg/L		11/29/21 09:40	11/29/21 22:16	1
Manganese	0.020		0.0030	0.00040	mg/L		12/02/21 09:05	12/02/21 23:32	1
Nickel	0.0053	J	0.010	0.0013	mg/L		11/29/21 09:40	11/29/21 22:16	1
Silver	ND		0.0030	0.0017	mg/L		11/29/21 09:40	11/29/21 22:16	1
Sodium	131		1.0	0.32	mg/L		11/29/21 09:40	11/29/21 22:16	1
Zinc	0.0040	J	0.010	0.0015	mg/L		11/29/21 09:40	11/29/21 22:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/26/21 09:37	11/26/21 12:48	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-01S

Lab Sample ID: 480-192800-4

Date Collected: 11/22/21 15:10

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 17:15	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 17:15	1
Acetone	ND		10	3.0	ug/L			11/26/21 17:15	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 17:15	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 17:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120		11/26/21 17:15	1
Toluene-d8 (Surr)	97		80 - 120		11/26/21 17:15	1
4-Bromofluorobenzene (Surr)	100		73 - 120		11/26/21 17:15	1
Dibromofluoromethane (Surr)	102		75 - 123		11/26/21 17:15	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 18:14	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 18:14	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 18:14	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 18:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	84		41 - 120	11/24/21 14:25	12/01/21 18:14	1
2-Fluorobiphenyl	114		48 - 120	11/24/21 14:25	12/01/21 18:14	1
2-Fluorophenol	81		35 - 120	11/24/21 14:25	12/01/21 18:14	1
Nitrobenzene-d5	99		46 - 120	11/24/21 14:25	12/01/21 18:14	1
Phenol-d5	57		22 - 120	11/24/21 14:25	12/01/21 18:14	1
p-Terphenyl-d14	95		60 - 148	11/24/21 14:25	12/01/21 18:14	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/29/21 09:40	11/29/21 22:31	1
Arsenic	ND		0.010	0.0056	mg/L		11/29/21 09:40	11/29/21 22:31	1
Barium	0.25		0.0020	0.00070	mg/L		11/29/21 09:40	11/29/21 22:31	1
Cadmium	0.00075	J	0.0010	0.00050	mg/L		11/29/21 09:40	11/29/21 22:31	1
Chromium	0.0018	J	0.0040	0.0010	mg/L		11/29/21 09:40	11/29/21 22:31	1
Copper	ND		0.010	0.0016	mg/L		11/29/21 09:40	11/29/21 22:31	1
Iron	9.8		0.050	0.019	mg/L		11/29/21 09:40	11/29/21 22:31	1
Lead	ND		0.0050	0.0030	mg/L		11/29/21 09:40	11/29/21 22:31	1
Magnesium	29.7		0.20	0.043	mg/L		11/29/21 09:40	11/29/21 22:31	1
Manganese	1.3		0.0030	0.00040	mg/L		11/29/21 09:40	11/29/21 22:31	1
Nickel	ND		0.010	0.0013	mg/L		11/29/21 09:40	11/29/21 22:31	1
Silver	ND		0.0030	0.0017	mg/L		11/29/21 09:40	11/29/21 22:31	1
Sodium	201		1.0	0.32	mg/L		11/29/21 09:40	11/29/21 22:31	1
Zinc	ND		0.010	0.0015	mg/L		11/29/21 09:40	11/29/21 22:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/26/21 09:37	11/26/21 12:49	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-04S

Lab Sample ID: 480-192800-5

Date Collected: 11/22/21 15:45

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 17:38	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 17:38	1
Acetone	ND		10	3.0	ug/L			11/26/21 17:38	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 17:38	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 17:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		77 - 120		11/26/21 17:38	1
Toluene-d8 (Surr)	91		80 - 120		11/26/21 17:38	1
4-Bromofluorobenzene (Surr)	91		73 - 120		11/26/21 17:38	1
Dibromofluoromethane (Surr)	99		75 - 123		11/26/21 17:38	1

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-04D

Lab Sample ID: 480-192800-6

Date Collected: 11/22/21 17:11

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 18:01	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 18:01	1
Acetone	ND		10	3.0	ug/L			11/26/21 18:01	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 18:01	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 18:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		77 - 120		11/26/21 18:01	1
Toluene-d8 (Surr)	95		80 - 120		11/26/21 18:01	1
4-Bromofluorobenzene (Surr)	95		73 - 120		11/26/21 18:01	1
Dibromofluoromethane (Surr)	98		75 - 123		11/26/21 18:01	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 19:09	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 19:09	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 19:09	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 19:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		41 - 120	11/24/21 14:25	12/01/21 19:09	1
2-Fluorobiphenyl	113		48 - 120	11/24/21 14:25	12/01/21 19:09	1
2-Fluorophenol	79		35 - 120	11/24/21 14:25	12/01/21 19:09	1
Nitrobenzene-d5	98		46 - 120	11/24/21 14:25	12/01/21 19:09	1
Phenol-d5	57		22 - 120	11/24/21 14:25	12/01/21 19:09	1
p-Terphenyl-d14	103		60 - 148	11/24/21 14:25	12/01/21 19:09	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/29/21 09:40	11/29/21 22:38	1
Arsenic	ND		0.010	0.0056	mg/L		11/29/21 09:40	11/29/21 22:38	1
Barium	0.094		0.0020	0.00070	mg/L		11/29/21 09:40	11/29/21 22:38	1
Cadmium	0.00082 J		0.0010	0.00050	mg/L		11/29/21 09:40	11/29/21 22:38	1
Chromium	0.0016 J		0.0040	0.0010	mg/L		11/29/21 09:40	11/29/21 22:38	1
Copper	ND		0.010	0.0016	mg/L		11/29/21 09:40	11/29/21 22:38	1
Iron	0.031 J		0.050	0.019	mg/L		11/29/21 09:40	11/29/21 22:38	1
Lead	ND		0.0050	0.0030	mg/L		11/29/21 09:40	11/29/21 22:38	1
Magnesium	76.8		0.20	0.043	mg/L		11/29/21 09:40	11/29/21 22:38	1
Manganese	0.018		0.0030	0.00040	mg/L		12/02/21 09:05	12/02/21 23:47	1
Nickel	ND		0.010	0.0013	mg/L		11/29/21 09:40	11/29/21 22:38	1
Silver	ND		0.0030	0.0017	mg/L		11/29/21 09:40	11/29/21 22:38	1
Sodium	96.8		1.0	0.32	mg/L		11/29/21 09:40	11/29/21 22:38	1
Zinc	0.0017 J		0.010	0.0015	mg/L		11/29/21 09:40	11/29/21 22:38	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/26/21 09:37	11/26/21 12:52	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-34S

Lab Sample ID: 480-192800-8

Date Collected: 11/23/21 09:17

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 18:24	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 18:24	1
Acetone	ND		10	3.0	ug/L			11/26/21 18:24	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 18:24	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 18:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		77 - 120		11/26/21 18:24	1
Toluene-d8 (Surr)	94		80 - 120		11/26/21 18:24	1
4-Bromofluorobenzene (Surr)	97		73 - 120		11/26/21 18:24	1
Dibromofluoromethane (Surr)	98		75 - 123		11/26/21 18:24	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 19:36	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 19:36	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 19:36	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 19:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		41 - 120	11/24/21 14:25	12/01/21 19:36	1
2-Fluorobiphenyl	98		48 - 120	11/24/21 14:25	12/01/21 19:36	1
2-Fluorophenol	67		35 - 120	11/24/21 14:25	12/01/21 19:36	1
Nitrobenzene-d5	85		46 - 120	11/24/21 14:25	12/01/21 19:36	1
Phenol-d5	48		22 - 120	11/24/21 14:25	12/01/21 19:36	1
p-Terphenyl-d14	96		60 - 148	11/24/21 14:25	12/01/21 19:36	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/29/21 09:40	11/29/21 22:42	1
Arsenic	ND		0.010	0.0056	mg/L		11/29/21 09:40	11/29/21 22:42	1
Barium	0.11		0.0020	0.00070	mg/L		11/29/21 09:40	11/29/21 22:42	1
Cadmium	0.00066	J	0.0010	0.00050	mg/L		11/29/21 09:40	11/29/21 22:42	1
Chromium	0.0020	J	0.0040	0.0010	mg/L		11/29/21 09:40	11/29/21 22:42	1
Copper	ND		0.010	0.0016	mg/L		11/29/21 09:40	11/29/21 22:42	1
Iron	ND		0.050	0.019	mg/L		11/29/21 09:40	11/29/21 22:42	1
Lead	ND		0.0050	0.0030	mg/L		11/29/21 09:40	11/29/21 22:42	1
Magnesium	42.3		0.20	0.043	mg/L		11/29/21 09:40	11/29/21 22:42	1
Manganese	0.073		0.0030	0.00040	mg/L		11/29/21 09:40	11/29/21 22:42	1
Nickel	0.0026	J	0.010	0.0013	mg/L		11/29/21 09:40	11/29/21 22:42	1
Silver	ND		0.0030	0.0017	mg/L		11/29/21 09:40	11/29/21 22:42	1
Sodium	19.2		1.0	0.32	mg/L		11/29/21 09:40	11/29/21 22:42	1
Zinc	ND		0.010	0.0015	mg/L		11/29/21 09:40	11/29/21 22:42	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/26/21 09:37	11/26/21 12:53	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-03S

Lab Sample ID: 480-192800-9

Date Collected: 11/23/21 10:12

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 18:47	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 18:47	1
Acetone	ND		10	3.0	ug/L			11/26/21 18:47	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 18:47	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 18:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		77 - 120		11/26/21 18:47	1
Toluene-d8 (Surr)	98		80 - 120		11/26/21 18:47	1
4-Bromofluorobenzene (Surr)	99		73 - 120		11/26/21 18:47	1
Dibromofluoromethane (Surr)	96		75 - 123		11/26/21 18:47	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 20:04	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 20:04	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 20:04	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 20:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	56		41 - 120	11/24/21 14:25	12/01/21 20:04	1
2-Fluorobiphenyl	86		48 - 120	11/24/21 14:25	12/01/21 20:04	1
2-Fluorophenol	59		35 - 120	11/24/21 14:25	12/01/21 20:04	1
Nitrobenzene-d5	74		46 - 120	11/24/21 14:25	12/01/21 20:04	1
Phenol-d5	44		22 - 120	11/24/21 14:25	12/01/21 20:04	1
p-Terphenyl-d14	77		60 - 148	11/24/21 14:25	12/01/21 20:04	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/29/21 09:40	11/29/21 22:46	1
Arsenic	ND		0.010	0.0056	mg/L		11/29/21 09:40	11/29/21 22:46	1
Barium	0.095		0.0020	0.00070	mg/L		11/29/21 09:40	11/29/21 22:46	1
Cadmium	0.0030		0.0010	0.00050	mg/L		11/29/21 09:40	11/29/21 22:46	1
Chromium	0.018		0.0040	0.0010	mg/L		11/29/21 09:40	11/29/21 22:46	1
Copper	0.0041 J		0.010	0.0016	mg/L		11/29/21 09:40	11/29/21 22:46	1
Iron	0.64		0.050	0.019	mg/L		11/29/21 09:40	11/29/21 22:46	1
Lead	ND		0.0050	0.0030	mg/L		11/29/21 09:40	11/29/21 22:46	1
Magnesium	137		0.20	0.043	mg/L		11/29/21 09:40	11/29/21 22:46	1
Manganese	0.26		0.0030	0.00040	mg/L		11/29/21 09:40	11/29/21 22:46	1
Nickel	0.054		0.010	0.0013	mg/L		11/29/21 09:40	11/29/21 22:46	1
Silver	ND		0.0030	0.0017	mg/L		11/29/21 09:40	11/29/21 22:46	1
Sodium	91.9		1.0	0.32	mg/L		11/29/21 09:40	11/29/21 22:46	1
Zinc	0.017		0.010	0.0015	mg/L		11/29/21 09:40	11/29/21 22:46	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/26/21 09:37	11/26/21 12:57	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-03D

Lab Sample ID: 480-192800-10

Date Collected: 11/23/21 11:28

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 19:10	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 19:10	1
Acetone	ND		10	3.0	ug/L			11/26/21 19:10	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 19:10	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 19:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		77 - 120		11/26/21 19:10	1
Toluene-d8 (Surr)	94		80 - 120		11/26/21 19:10	1
4-Bromofluorobenzene (Surr)	90		73 - 120		11/26/21 19:10	1
Dibromofluoromethane (Surr)	97		75 - 123		11/26/21 19:10	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	2.9	J	10	0.48	ug/L		11/24/21 14:25	12/01/21 20:31	1
1,4-Dichlorobenzene	4.1	J	10	0.46	ug/L		11/24/21 14:25	12/01/21 20:31	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 20:31	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 20:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	72		41 - 120	11/24/21 14:25	12/01/21 20:31	1
2-Fluorobiphenyl	109		48 - 120	11/24/21 14:25	12/01/21 20:31	1
2-Fluorophenol	75		35 - 120	11/24/21 14:25	12/01/21 20:31	1
Nitrobenzene-d5	95		46 - 120	11/24/21 14:25	12/01/21 20:31	1
Phenol-d5	55		22 - 120	11/24/21 14:25	12/01/21 20:31	1
p-Terphenyl-d14	96		60 - 148	11/24/21 14:25	12/01/21 20:31	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/29/21 09:40	11/29/21 22:50	1
Arsenic	ND		0.010	0.0056	mg/L		11/29/21 09:40	11/29/21 22:50	1
Barium	0.076		0.0020	0.00070	mg/L		11/29/21 09:40	11/29/21 22:50	1
Cadmium	ND		0.0010	0.00050	mg/L		11/29/21 09:40	11/29/21 22:50	1
Chromium	ND		0.0040	0.0010	mg/L		11/29/21 09:40	11/29/21 22:50	1
Copper	ND		0.010	0.0016	mg/L		11/29/21 09:40	11/29/21 22:50	1
Iron	0.99		0.050	0.019	mg/L		11/29/21 09:40	11/29/21 22:50	1
Lead	ND		0.0050	0.0030	mg/L		11/29/21 09:40	11/29/21 22:50	1
Magnesium	14.7		0.20	0.043	mg/L		11/29/21 09:40	11/29/21 22:50	1
Manganese	0.22		0.0030	0.00040	mg/L		11/29/21 09:40	11/29/21 22:50	1
Nickel	0.0034	J	0.010	0.0013	mg/L		11/29/21 09:40	11/29/21 22:50	1
Silver	ND		0.0030	0.0017	mg/L		11/29/21 09:40	11/29/21 22:50	1
Sodium	167		1.0	0.32	mg/L		11/29/21 09:40	11/29/21 22:50	1
Zinc	ND		0.010	0.0015	mg/L		11/29/21 09:40	11/29/21 22:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/26/21 09:37	11/26/21 12:59	1

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-08D

Lab Sample ID: 480-192800-13

Date Collected: 11/23/21 13:54

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 19:32	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 19:32	1
Acetone	ND		10	3.0	ug/L			11/26/21 19:32	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 19:32	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 19:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		77 - 120		11/26/21 19:32	1
Toluene-d8 (Surr)	96		80 - 120		11/26/21 19:32	1
4-Bromofluorobenzene (Surr)	96		73 - 120		11/26/21 19:32	1
Dibromofluoromethane (Surr)	97		75 - 123		11/26/21 19:32	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 04:23	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 04:23	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 04:23	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 04:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	90		41 - 120	11/24/21 14:25	12/01/21 04:23	1
2-Fluorobiphenyl	101		48 - 120	11/24/21 14:25	12/01/21 04:23	1
2-Fluorophenol	71		35 - 120	11/24/21 14:25	12/01/21 04:23	1
Nitrobenzene-d5	89		46 - 120	11/24/21 14:25	12/01/21 04:23	1
Phenol-d5	51		22 - 120	11/24/21 14:25	12/01/21 04:23	1
p-Terphenyl-d14	111		60 - 148	11/24/21 14:25	12/01/21 04:23	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/29/21 09:40	11/29/21 22:53	1
Arsenic	ND		0.010	0.0056	mg/L		11/29/21 09:40	11/29/21 22:53	1
Barium	0.077		0.0020	0.00070	mg/L		11/29/21 09:40	11/29/21 22:53	1
Cadmium	ND		0.0010	0.00050	mg/L		11/29/21 09:40	11/29/21 22:53	1
Chromium	0.014		0.0040	0.0010	mg/L		11/29/21 09:40	11/29/21 22:53	1
Copper	0.0031	J	0.010	0.0016	mg/L		11/29/21 09:40	11/29/21 22:53	1
Iron	0.35		0.050	0.019	mg/L		11/29/21 09:40	11/29/21 22:53	1
Lead	ND		0.0050	0.0030	mg/L		11/29/21 09:40	11/29/21 22:53	1
Magnesium	15.7		0.20	0.043	mg/L		11/29/21 09:40	11/29/21 22:53	1
Manganese	0.028		0.0030	0.00040	mg/L		12/02/21 09:05	12/02/21 23:51	1
Nickel	0.0062	J	0.010	0.0013	mg/L		11/29/21 09:40	11/29/21 22:53	1
Silver	ND		0.0030	0.0017	mg/L		11/29/21 09:40	11/29/21 22:53	1
Sodium	228		1.0	0.32	mg/L		11/29/21 09:40	11/29/21 22:53	1
Zinc	0.0058	J	0.010	0.0015	mg/L		11/29/21 09:40	11/29/21 22:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/26/21 09:37	11/26/21 13:00	1

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-08SR

Lab Sample ID: 480-192800-14

Date Collected: 11/23/21 15:15

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 19:55	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 19:55	1
Acetone	ND		10	3.0	ug/L			11/26/21 19:55	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 19:55	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 19:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120		11/26/21 19:55	1
Toluene-d8 (Surr)	92		80 - 120		11/26/21 19:55	1
4-Bromofluorobenzene (Surr)	89		73 - 120		11/26/21 19:55	1
Dibromofluoromethane (Surr)	100		75 - 123		11/26/21 19:55	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 20:58	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 20:58	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 20:58	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 20:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	104		41 - 120	11/24/21 14:25	12/01/21 20:58	1
2-Fluorobiphenyl	113		48 - 120	11/24/21 14:25	12/01/21 20:58	1
2-Fluorophenol	76		35 - 120	11/24/21 14:25	12/01/21 20:58	1
Nitrobenzene-d5	95		46 - 120	11/24/21 14:25	12/01/21 20:58	1
Phenol-d5	51		22 - 120	11/24/21 14:25	12/01/21 20:58	1
p-Terphenyl-d14	90		60 - 148	11/24/21 14:25	12/01/21 20:58	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/29/21 09:40	11/29/21 23:23	1
Arsenic	ND		0.010	0.0056	mg/L		11/29/21 09:40	11/29/21 23:23	1
Barium	0.086		0.0020	0.00070	mg/L		11/29/21 09:40	11/29/21 23:23	1
Cadmium	0.00058	J	0.0010	0.00050	mg/L		11/29/21 09:40	11/29/21 23:23	1
Chromium	0.0018	J	0.0040	0.0010	mg/L		11/29/21 09:40	11/29/21 23:23	1
Copper	ND		0.010	0.0016	mg/L		11/29/21 09:40	11/29/21 23:23	1
Iron	5.2		0.050	0.019	mg/L		11/29/21 09:40	11/29/21 23:23	1
Lead	ND		0.0050	0.0030	mg/L		11/29/21 09:40	11/29/21 23:23	1
Magnesium	52.7		0.20	0.043	mg/L		11/29/21 09:40	11/29/21 23:23	1
Manganese	0.48		0.0030	0.00040	mg/L		11/29/21 09:40	11/29/21 23:23	1
Nickel	ND		0.010	0.0013	mg/L		11/29/21 09:40	11/29/21 23:23	1
Silver	ND		0.0030	0.0017	mg/L		11/29/21 09:40	11/29/21 23:23	1
Sodium	114		1.0	0.32	mg/L		11/29/21 09:40	11/29/21 23:23	1
Zinc	ND		0.010	0.0015	mg/L		11/29/21 09:40	11/29/21 23:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/26/21 09:37	11/26/21 13:05	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-35S

Lab Sample ID: 480-192800-15

Date Collected: 11/23/21 16:07

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 20:18	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 20:18	1
Acetone	ND		10	3.0	ug/L			11/26/21 20:18	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 20:18	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 20:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		77 - 120		11/26/21 20:18	1
Toluene-d8 (Surr)	93		80 - 120		11/26/21 20:18	1
4-Bromofluorobenzene (Surr)	92		73 - 120		11/26/21 20:18	1
Dibromofluoromethane (Surr)	97		75 - 123		11/26/21 20:18	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 21:25	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 21:25	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 21:25	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 21:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	70		41 - 120	11/24/21 14:25	12/01/21 21:25	1
2-Fluorobiphenyl	90		48 - 120	11/24/21 14:25	12/01/21 21:25	1
2-Fluorophenol	57		35 - 120	11/24/21 14:25	12/01/21 21:25	1
Nitrobenzene-d5	80		46 - 120	11/24/21 14:25	12/01/21 21:25	1
Phenol-d5	41		22 - 120	11/24/21 14:25	12/01/21 21:25	1
p-Terphenyl-d14	88		60 - 148	11/24/21 14:25	12/01/21 21:25	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/29/21 09:40	11/29/21 23:27	1
Arsenic	ND		0.010	0.0056	mg/L		11/29/21 09:40	11/29/21 23:27	1
Barium	0.086		0.0020	0.00070	mg/L		11/29/21 09:40	11/29/21 23:27	1
Cadmium	ND		0.0010	0.00050	mg/L		11/29/21 09:40	11/29/21 23:27	1
Chromium	ND		0.0040	0.0010	mg/L		11/29/21 09:40	11/29/21 23:27	1
Copper	ND		0.010	0.0016	mg/L		11/29/21 09:40	11/29/21 23:27	1
Iron	0.032	J	0.050	0.019	mg/L		11/29/21 09:40	11/29/21 23:27	1
Lead	ND		0.0050	0.0030	mg/L		11/29/21 09:40	11/29/21 23:27	1
Magnesium	21.5		0.20	0.043	mg/L		11/29/21 09:40	11/29/21 23:27	1
Manganese	0.15		0.0030	0.00040	mg/L		11/29/21 09:40	11/29/21 23:27	1
Nickel	ND		0.010	0.0013	mg/L		11/29/21 09:40	11/29/21 23:27	1
Silver	ND		0.0030	0.0017	mg/L		11/29/21 09:40	11/29/21 23:27	1
Sodium	2.5		1.0	0.32	mg/L		11/29/21 09:40	11/29/21 23:27	1
Zinc	ND		0.010	0.0015	mg/L		11/29/21 09:40	11/29/21 23:27	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/26/21 09:37	11/26/21 13:06	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-26D

Lab Sample ID: 480-192800-16

Date Collected: 11/23/21 17:20

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 20:41	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 20:41	1
Acetone	ND		10	3.0	ug/L			11/26/21 20:41	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 20:41	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 20:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		77 - 120		11/26/21 20:41	1
Toluene-d8 (Surr)	92		80 - 120		11/26/21 20:41	1
4-Bromofluorobenzene (Surr)	91		73 - 120		11/26/21 20:41	1
Dibromofluoromethane (Surr)	97		75 - 123		11/26/21 20:41	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 21:52	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 21:52	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 21:52	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 21:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	65		41 - 120	11/24/21 14:25	12/01/21 21:52	1
2-Fluorobiphenyl	85		48 - 120	11/24/21 14:25	12/01/21 21:52	1
2-Fluorophenol	52		35 - 120	11/24/21 14:25	12/01/21 21:52	1
Nitrobenzene-d5	73		46 - 120	11/24/21 14:25	12/01/21 21:52	1
Phenol-d5	36		22 - 120	11/24/21 14:25	12/01/21 21:52	1
p-Terphenyl-d14	74		60 - 148	11/24/21 14:25	12/01/21 21:52	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/29/21 09:40	11/29/21 23:30	1
Arsenic	ND		0.010	0.0056	mg/L		11/29/21 09:40	11/29/21 23:30	1
Barium	0.11		0.0020	0.00070	mg/L		11/29/21 09:40	11/29/21 23:30	1
Cadmium	ND		0.0010	0.00050	mg/L		11/29/21 09:40	11/29/21 23:30	1
Chromium	ND		0.0040	0.0010	mg/L		11/29/21 09:40	11/29/21 23:30	1
Copper	ND		0.010	0.0016	mg/L		11/29/21 09:40	11/29/21 23:30	1
Iron	3.1		0.050	0.019	mg/L		11/29/21 09:40	11/29/21 23:30	1
Lead	ND		0.0050	0.0030	mg/L		11/29/21 09:40	11/29/21 23:30	1
Magnesium	17.4		0.20	0.043	mg/L		11/29/21 09:40	11/29/21 23:30	1
Manganese	0.36		0.0030	0.00040	mg/L		11/29/21 09:40	11/29/21 23:30	1
Nickel	0.0017	J	0.010	0.0013	mg/L		11/29/21 09:40	11/29/21 23:30	1
Silver	ND		0.0030	0.0017	mg/L		11/29/21 09:40	11/29/21 23:30	1
Sodium	276		1.0	0.32	mg/L		11/29/21 09:40	11/29/21 23:30	1
Zinc	ND		0.010	0.0015	mg/L		11/29/21 09:40	11/29/21 23:30	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/26/21 09:37	11/26/21 13:08	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: FD-112321

Lab Sample ID: 480-192800-17

Date Collected: 11/23/21 00:00

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 21:04	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 21:04	1
Acetone	ND		10	3.0	ug/L			11/26/21 21:04	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 21:04	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 21:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120		11/26/21 21:04	1
Toluene-d8 (Surr)	92		80 - 120		11/26/21 21:04	1
4-Bromofluorobenzene (Surr)	92		73 - 120		11/26/21 21:04	1
Dibromofluoromethane (Surr)	95		75 - 123		11/26/21 21:04	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 22:20	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 22:20	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 22:20	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 22:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	84		41 - 120	11/24/21 14:25	12/01/21 22:20	1
2-Fluorobiphenyl	69		48 - 120	11/24/21 14:25	12/01/21 22:20	1
2-Fluorophenol	45		35 - 120	11/24/21 14:25	12/01/21 22:20	1
Nitrobenzene-d5	60		46 - 120	11/24/21 14:25	12/01/21 22:20	1
Phenol-d5	32		22 - 120	11/24/21 14:25	12/01/21 22:20	1
p-Terphenyl-d14	92		60 - 148	11/24/21 14:25	12/01/21 22:20	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/29/21 09:40	11/29/21 23:34	1
Arsenic	ND		0.010	0.0056	mg/L		11/29/21 09:40	11/29/21 23:34	1
Barium	0.11		0.0020	0.00070	mg/L		11/29/21 09:40	11/29/21 23:34	1
Cadmium	ND		0.0010	0.00050	mg/L		11/29/21 09:40	11/29/21 23:34	1
Chromium	ND		0.0040	0.0010	mg/L		11/29/21 09:40	11/29/21 23:34	1
Copper	ND		0.010	0.0016	mg/L		11/29/21 09:40	11/29/21 23:34	1
Iron	3.1		0.050	0.019	mg/L		11/29/21 09:40	11/29/21 23:34	1
Lead	ND		0.0050	0.0030	mg/L		11/29/21 09:40	11/29/21 23:34	1
Magnesium	17.3		0.20	0.043	mg/L		11/29/21 09:40	11/29/21 23:34	1
Manganese	0.35		0.0030	0.00040	mg/L		11/29/21 09:40	11/29/21 23:34	1
Nickel	0.0019	J	0.010	0.0013	mg/L		11/29/21 09:40	11/29/21 23:34	1
Silver	ND		0.0030	0.0017	mg/L		11/29/21 09:40	11/29/21 23:34	1
Sodium	266		1.0	0.32	mg/L		11/29/21 09:40	11/29/21 23:34	1
Zinc	ND		0.010	0.0015	mg/L		11/29/21 09:40	11/29/21 23:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/26/21 09:37	11/26/21 13:09	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: TB-112221

Lab Sample ID: 480-192800-18

Date Collected: 11/23/21 00:00

Matrix: Water

Date Received: 11/23/21 18:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/26/21 21:27	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/26/21 21:27	1
Acetone	ND		10	3.0	ug/L			11/26/21 21:27	1
Benzene	ND		1.0	0.41	ug/L			11/26/21 21:27	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/26/21 21:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		77 - 120		11/26/21 21:27	1
Toluene-d8 (Surr)	97		80 - 120		11/26/21 21:27	1
4-Bromofluorobenzene (Surr)	100		73 - 120		11/26/21 21:27	1
Dibromofluoromethane (Surr)	102		75 - 123		11/26/21 21:27	1

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-07S

Lab Sample ID: 480-192800-19

Date Collected: 11/23/21 12:15

Matrix: Water

Date Received: 11/23/21 18:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 16:52	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 16:52	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 16:52	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 16:52	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	87		41 - 120				11/24/21 14:25	12/01/21 16:52	1
2-Fluorobiphenyl	110		48 - 120				11/24/21 14:25	12/01/21 16:52	1
2-Fluorophenol	77		35 - 120				11/24/21 14:25	12/01/21 16:52	1
Nitrobenzene-d5	99		46 - 120				11/24/21 14:25	12/01/21 16:52	1
Phenol-d5	55		22 - 120				11/24/21 14:25	12/01/21 16:52	1
p-Terphenyl-d14	95		60 - 148				11/24/21 14:25	12/01/21 16:52	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/30/21 09:37	11/30/21 22:46	1
Arsenic	ND		0.010	0.0056	mg/L		11/30/21 09:37	11/30/21 22:46	1
Barium	0.44		0.0020	0.00070	mg/L		11/30/21 09:37	11/30/21 22:46	1
Cadmium	0.00079	J	0.0010	0.00050	mg/L		11/30/21 09:37	11/30/21 22:46	1
Chromium	0.0013	J	0.0040	0.0010	mg/L		11/30/21 09:37	11/30/21 22:46	1
Copper	ND		0.010	0.0016	mg/L		11/30/21 09:37	11/30/21 22:46	1
Iron	0.22		0.050	0.019	mg/L		11/30/21 09:37	11/30/21 22:46	1
Lead	ND		0.0050	0.0030	mg/L		11/30/21 09:37	11/30/21 22:46	1
Magnesium	46.3		0.20	0.043	mg/L		11/30/21 09:37	11/30/21 22:46	1
Manganese	0.033		0.0030	0.00040	mg/L		11/30/21 09:37	11/30/21 22:46	1
Nickel	0.0088	J	0.010	0.0013	mg/L		11/30/21 09:37	11/30/21 22:46	1
Silver	ND		0.0030	0.0017	mg/L		11/30/21 09:37	11/30/21 22:46	1
Sodium	60.4		1.0	0.32	mg/L		11/30/21 09:37	11/30/21 22:46	1
Zinc	0.0039	J	0.010	0.0015	mg/L		11/30/21 09:37	11/30/21 22:46	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/29/21 13:47	11/29/21 17:32	1

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-07D

Lab Sample ID: 480-192800-20

Date Collected: 11/23/21 12:00

Matrix: Water

Date Received: 11/23/21 18:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 17:20	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 17:20	1
Bis(2-ethylhexyl) phthalate	2.2	J	5.0	2.2	ug/L		11/24/21 14:25	12/01/21 17:20	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 17:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	81		41 - 120	11/24/21 14:25	12/01/21 17:20	1
2-Fluorobiphenyl	101		48 - 120	11/24/21 14:25	12/01/21 17:20	1
2-Fluorophenol	71		35 - 120	11/24/21 14:25	12/01/21 17:20	1
Nitrobenzene-d5	90		46 - 120	11/24/21 14:25	12/01/21 17:20	1
Phenol-d5	51		22 - 120	11/24/21 14:25	12/01/21 17:20	1
p-Terphenyl-d14	87		60 - 148	11/24/21 14:25	12/01/21 17:20	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/30/21 09:37	11/30/21 22:50	1
Arsenic	ND		0.010	0.0056	mg/L		11/30/21 09:37	11/30/21 22:50	1
Barium	0.11		0.0020	0.00070	mg/L		11/30/21 09:37	11/30/21 22:50	1
Cadmium	0.0036		0.0010	0.00050	mg/L		11/30/21 09:37	11/30/21 22:50	1
Chromium	0.56		0.0040	0.0010	mg/L		11/30/21 09:37	11/30/21 22:50	1
Copper	0.037		0.010	0.0016	mg/L		11/30/21 09:37	11/30/21 22:50	1
Iron	7.1		0.050	0.019	mg/L		11/30/21 09:37	11/30/21 22:50	1
Lead	0.11		0.0050	0.0030	mg/L		11/30/21 09:37	11/30/21 22:50	1
Magnesium	35.7		0.20	0.043	mg/L		11/30/21 09:37	11/30/21 22:50	1
Manganese	0.10		0.0030	0.00040	mg/L		11/30/21 09:37	11/30/21 22:50	1
Nickel	0.25		0.010	0.0013	mg/L		11/30/21 09:37	11/30/21 22:50	1
Silver	ND		0.0030	0.0017	mg/L		11/30/21 09:37	11/30/21 22:50	1
Sodium	79.3		1.0	0.32	mg/L		11/30/21 09:37	11/30/21 22:50	1
Zinc	0.078		0.010	0.0015	mg/L		11/30/21 09:37	11/30/21 22:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/29/21 13:47	11/29/21 17:33	1

Client Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Client Sample ID: GW-04S

Lab Sample ID: 480-192800-21

Date Collected: 11/22/21 17:22

Matrix: Water

Date Received: 11/23/21 18:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/24/21 14:25	12/01/21 18:41	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/24/21 14:25	12/01/21 18:41	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/24/21 14:25	12/01/21 18:41	1
Phenol	ND		5.0	0.39	ug/L		11/24/21 14:25	12/01/21 18:41	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	70		41 - 120				11/24/21 14:25	12/01/21 18:41	1
2-Fluorobiphenyl	115		48 - 120				11/24/21 14:25	12/01/21 18:41	1
2-Fluorophenol	76		35 - 120				11/24/21 14:25	12/01/21 18:41	1
Nitrobenzene-d5	99		46 - 120				11/24/21 14:25	12/01/21 18:41	1
Phenol-d5	54		22 - 120				11/24/21 14:25	12/01/21 18:41	1
p-Terphenyl-d14	101		60 - 148				11/24/21 14:25	12/01/21 18:41	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/30/21 09:37	11/30/21 22:54	1
Arsenic	ND		0.010	0.0056	mg/L		11/30/21 09:37	11/30/21 22:54	1
Barium	0.13		0.0020	0.00070	mg/L		11/30/21 09:37	11/30/21 22:54	1
Cadmium	0.0014		0.0010	0.00050	mg/L		11/30/21 09:37	11/30/21 22:54	1
Chromium	0.011		0.0040	0.0010	mg/L		11/30/21 09:37	11/30/21 22:54	1
Copper	0.0034	J	0.010	0.0016	mg/L		11/30/21 09:37	11/30/21 22:54	1
Iron	1.4		0.050	0.019	mg/L		11/30/21 09:37	11/30/21 22:54	1
Lead	ND		0.0050	0.0030	mg/L		11/30/21 09:37	11/30/21 22:54	1
Magnesium	28.2		0.20	0.043	mg/L		11/30/21 09:37	11/30/21 22:54	1
Manganese	0.13		0.0030	0.00040	mg/L		11/30/21 09:37	11/30/21 22:54	1
Nickel	0.0079	J	0.010	0.0013	mg/L		11/30/21 09:37	11/30/21 22:54	1
Silver	ND		0.0030	0.0017	mg/L		11/30/21 09:37	11/30/21 22:54	1
Sodium	29.9		1.0	0.32	mg/L		11/30/21 09:37	11/30/21 22:54	1
Zinc	0.014		0.010	0.0015	mg/L		11/30/21 09:37	11/30/21 22:54	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/29/21 13:47	11/29/21 17:34	1

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-192851-1

Client Sample ID: GW-28S

Lab Sample ID: 480-192851-1

Date Collected: 11/24/21 08:25

Matrix: Water

Date Received: 11/24/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/21 06:22	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/21 06:22	1
Acetone	ND		10	3.0	ug/L			11/30/21 06:22	1
Benzene	ND		1.0	0.41	ug/L			11/30/21 06:22	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/21 06:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		77 - 120		11/30/21 06:22	1
Toluene-d8 (Surr)	99		80 - 120		11/30/21 06:22	1
4-Bromofluorobenzene (Surr)	96		73 - 120		11/30/21 06:22	1
Dibromofluoromethane (Surr)	105		75 - 123		11/30/21 06:22	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/29/21 15:04	12/01/21 08:54	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/29/21 15:04	12/01/21 08:54	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/29/21 15:04	12/01/21 08:54	1
Phenol	ND		5.0	0.39	ug/L		11/29/21 15:04	12/01/21 08:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		41 - 120	11/29/21 15:04	12/01/21 08:54	1
2-Fluorobiphenyl	107		48 - 120	11/29/21 15:04	12/01/21 08:54	1
2-Fluorophenol	68		35 - 120	11/29/21 15:04	12/01/21 08:54	1
Nitrobenzene-d5	93		46 - 120	11/29/21 15:04	12/01/21 08:54	1
Phenol-d5	49		22 - 120	11/29/21 15:04	12/01/21 08:54	1
p-Terphenyl-d14	97		60 - 148	11/29/21 15:04	12/01/21 08:54	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/30/21 09:37	12/02/21 01:19	1
Arsenic	ND		0.010	0.0056	mg/L		11/30/21 09:37	12/02/21 01:19	1
Barium	0.078		0.0020	0.00070	mg/L		11/30/21 09:37	12/02/21 01:19	1
Cadmium	ND		0.0010	0.00050	mg/L		11/30/21 09:37	12/02/21 01:19	1
Chromium	ND		0.0040	0.0010	mg/L		11/30/21 09:37	12/02/21 01:19	1
Copper	ND		0.010	0.0016	mg/L		11/30/21 09:37	12/02/21 01:19	1
Iron	0.22		0.050	0.019	mg/L		11/30/21 09:37	12/02/21 01:19	1
Lead	ND		0.0050	0.0030	mg/L		11/30/21 09:37	12/02/21 01:19	1
Magnesium	26.5		0.20	0.043	mg/L		11/30/21 09:37	12/02/21 01:19	1
Manganese	0.76		0.0030	0.00040	mg/L		11/30/21 09:37	12/02/21 01:19	1
Nickel	ND		0.010	0.0013	mg/L		11/30/21 09:37	12/02/21 01:19	1
Silver	ND		0.0030	0.0017	mg/L		11/30/21 09:37	12/02/21 01:19	1
Sodium	8.5		1.0	0.32	mg/L		11/30/21 09:37	12/02/21 01:19	1
Zinc	0.0023 J		0.010	0.0015	mg/L		11/30/21 09:37	12/02/21 01:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/30/21 13:49	11/30/21 17:00	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-192851-1

Client Sample ID: GW-29S

Lab Sample ID: 480-192851-2

Date Collected: 11/24/21 09:36

Matrix: Water

Date Received: 11/24/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/21 06:45	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/21 06:45	1
Acetone	ND		10	3.0	ug/L			11/30/21 06:45	1
Benzene	ND		1.0	0.41	ug/L			11/30/21 06:45	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/21 06:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		77 - 120		11/30/21 06:45	1
Toluene-d8 (Surr)	97		80 - 120		11/30/21 06:45	1
4-Bromofluorobenzene (Surr)	97		73 - 120		11/30/21 06:45	1
Dibromofluoromethane (Surr)	102		75 - 123		11/30/21 06:45	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/29/21 15:04	12/01/21 09:21	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/29/21 15:04	12/01/21 09:21	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/29/21 15:04	12/01/21 09:21	1
Phenol	ND		5.0	0.39	ug/L		11/29/21 15:04	12/01/21 09:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	93		41 - 120	11/29/21 15:04	12/01/21 09:21	1
2-Fluorobiphenyl	104		48 - 120	11/29/21 15:04	12/01/21 09:21	1
2-Fluorophenol	69		35 - 120	11/29/21 15:04	12/01/21 09:21	1
Nitrobenzene-d5	93		46 - 120	11/29/21 15:04	12/01/21 09:21	1
Phenol-d5	52		22 - 120	11/29/21 15:04	12/01/21 09:21	1
p-Terphenyl-d14	99		60 - 148	11/29/21 15:04	12/01/21 09:21	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/30/21 09:37	12/02/21 01:23	1
Arsenic	0.016		0.010	0.0056	mg/L		11/30/21 09:37	12/02/21 01:23	1
Barium	0.18		0.0020	0.00070	mg/L		11/30/21 09:37	12/02/21 01:23	1
Cadmium	0.00050	J	0.0010	0.00050	mg/L		11/30/21 09:37	12/02/21 01:23	1
Chromium	ND		0.0040	0.0010	mg/L		11/30/21 09:37	12/02/21 01:23	1
Copper	ND		0.010	0.0016	mg/L		11/30/21 09:37	12/02/21 01:23	1
Iron	11.1		0.050	0.019	mg/L		11/30/21 09:37	12/02/21 01:23	1
Lead	0.0041	J	0.0050	0.0030	mg/L		11/30/21 09:37	12/02/21 01:23	1
Magnesium	61.5		0.20	0.043	mg/L		11/30/21 09:37	12/02/21 01:23	1
Manganese	0.54		0.0030	0.00040	mg/L		11/30/21 09:37	12/02/21 01:23	1
Nickel	ND		0.010	0.0013	mg/L		11/30/21 09:37	12/02/21 01:23	1
Silver	ND		0.0030	0.0017	mg/L		11/30/21 09:37	12/02/21 01:23	1
Sodium	9.3		1.0	0.32	mg/L		11/30/21 09:37	12/02/21 01:23	1
Zinc	ND		0.010	0.0015	mg/L		11/30/21 09:37	12/02/21 01:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/29/21 13:47	11/29/21 17:15	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-192851-1

Client Sample ID: GW-30S

Lab Sample ID: 480-192851-3

Date Collected: 11/24/21 10:20

Matrix: Water

Date Received: 11/24/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/21 07:07	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/21 07:07	1
Acetone	ND		10	3.0	ug/L			11/30/21 07:07	1
Benzene	ND		1.0	0.41	ug/L			11/30/21 07:07	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/21 07:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		77 - 120		11/30/21 07:07	1
Toluene-d8 (Surr)	95		80 - 120		11/30/21 07:07	1
4-Bromofluorobenzene (Surr)	94		73 - 120		11/30/21 07:07	1
Dibromofluoromethane (Surr)	103		75 - 123		11/30/21 07:07	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/29/21 15:04	12/01/21 09:48	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/29/21 15:04	12/01/21 09:48	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/29/21 15:04	12/01/21 09:48	1
Phenol	ND		5.0	0.39	ug/L		11/29/21 15:04	12/01/21 09:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	86		41 - 120	11/29/21 15:04	12/01/21 09:48	1
2-Fluorobiphenyl	97		48 - 120	11/29/21 15:04	12/01/21 09:48	1
2-Fluorophenol	64		35 - 120	11/29/21 15:04	12/01/21 09:48	1
Nitrobenzene-d5	82		46 - 120	11/29/21 15:04	12/01/21 09:48	1
Phenol-d5	49		22 - 120	11/29/21 15:04	12/01/21 09:48	1
p-Terphenyl-d14	81		60 - 148	11/29/21 15:04	12/01/21 09:48	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/30/21 09:37	12/02/21 01:27	1
Arsenic	ND		0.010	0.0056	mg/L		11/30/21 09:37	12/02/21 01:27	1
Barium	0.17		0.0020	0.00070	mg/L		11/30/21 09:37	12/02/21 01:27	1
Cadmium	ND		0.0010	0.00050	mg/L		11/30/21 09:37	12/02/21 01:27	1
Chromium	ND		0.0040	0.0010	mg/L		11/30/21 09:37	12/02/21 01:27	1
Copper	ND		0.010	0.0016	mg/L		11/30/21 09:37	12/02/21 01:27	1
Iron	8.7		0.050	0.019	mg/L		11/30/21 09:37	12/02/21 01:27	1
Lead	0.0034	J	0.0050	0.0030	mg/L		11/30/21 09:37	12/02/21 01:27	1
Magnesium	28.3		0.20	0.043	mg/L		11/30/21 09:37	12/02/21 01:27	1
Manganese	1.5		0.0030	0.00040	mg/L		11/30/21 09:37	12/02/21 01:27	1
Nickel	ND		0.010	0.0013	mg/L		11/30/21 09:37	12/02/21 01:27	1
Silver	ND		0.0030	0.0017	mg/L		11/30/21 09:37	12/02/21 01:27	1
Sodium	223		1.0	0.32	mg/L		11/30/21 09:37	12/02/21 01:27	1
Zinc	ND		0.010	0.0015	mg/L		11/30/21 09:37	12/02/21 01:27	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/29/21 13:47	11/29/21 17:44	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-192851-1

Client Sample ID: GW-31S

Lab Sample ID: 480-192851-4

Date Collected: 11/24/21 11:18

Matrix: Water

Date Received: 11/24/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/21 07:30	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/21 07:30	1
Acetone	ND		10	3.0	ug/L			11/30/21 07:30	1
Benzene	ND		1.0	0.41	ug/L			11/30/21 07:30	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/21 07:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		77 - 120		11/30/21 07:30	1
Toluene-d8 (Surr)	97		80 - 120		11/30/21 07:30	1
4-Bromofluorobenzene (Surr)	94		73 - 120		11/30/21 07:30	1
Dibromofluoromethane (Surr)	106		75 - 123		11/30/21 07:30	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/29/21 15:04	12/01/21 10:15	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/29/21 15:04	12/01/21 10:15	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/29/21 15:04	12/01/21 10:15	1
Phenol	ND		5.0	0.39	ug/L		11/29/21 15:04	12/01/21 10:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	77		41 - 120	11/29/21 15:04	12/01/21 10:15	1
2-Fluorobiphenyl	113		48 - 120	11/29/21 15:04	12/01/21 10:15	1
2-Fluorophenol	74		35 - 120	11/29/21 15:04	12/01/21 10:15	1
Nitrobenzene-d5	97		46 - 120	11/29/21 15:04	12/01/21 10:15	1
Phenol-d5	55		22 - 120	11/29/21 15:04	12/01/21 10:15	1
p-Terphenyl-d14	101		60 - 148	11/29/21 15:04	12/01/21 10:15	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/30/21 09:37	12/02/21 01:31	1
Arsenic	ND		0.010	0.0056	mg/L		11/30/21 09:37	12/02/21 01:31	1
Barium	0.088		0.0020	0.00070	mg/L		11/30/21 09:37	12/02/21 01:31	1
Cadmium	ND		0.0010	0.00050	mg/L		11/30/21 09:37	12/02/21 01:31	1
Chromium	ND		0.0040	0.0010	mg/L		11/30/21 09:37	12/02/21 01:31	1
Copper	ND		0.010	0.0016	mg/L		11/30/21 09:37	12/02/21 01:31	1
Iron	2.7		0.050	0.019	mg/L		11/30/21 09:37	12/02/21 01:31	1
Lead	ND		0.0050	0.0030	mg/L		11/30/21 09:37	12/02/21 01:31	1
Magnesium	26.6		0.20	0.043	mg/L		11/30/21 09:37	12/02/21 01:31	1
Manganese	0.57		0.0030	0.00040	mg/L		11/30/21 09:37	12/02/21 01:31	1
Nickel	0.0019	J	0.010	0.0013	mg/L		11/30/21 09:37	12/02/21 01:31	1
Silver	ND		0.0030	0.0017	mg/L		11/30/21 09:37	12/02/21 01:31	1
Sodium	2.8		1.0	0.32	mg/L		11/30/21 09:37	12/02/21 01:31	1
Zinc	0.0041	J	0.010	0.0015	mg/L		11/30/21 09:37	12/02/21 01:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/29/21 13:47	11/29/21 17:45	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-192851-1

Client Sample ID: GW-32S

Lab Sample ID: 480-192851-5

Date Collected: 11/24/21 12:15

Matrix: Water

Date Received: 11/24/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/21 07:54	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/21 07:54	1
Acetone	ND		10	3.0	ug/L			11/30/21 07:54	1
Benzene	ND		1.0	0.41	ug/L			11/30/21 07:54	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/21 07:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120		11/30/21 07:54	1
Toluene-d8 (Surr)	95		80 - 120		11/30/21 07:54	1
4-Bromofluorobenzene (Surr)	97		73 - 120		11/30/21 07:54	1
Dibromofluoromethane (Surr)	102		75 - 123		11/30/21 07:54	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/29/21 15:04	12/01/21 15:57	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/29/21 15:04	12/01/21 15:57	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/29/21 15:04	12/01/21 15:57	1
Phenol	ND		5.0	0.39	ug/L		11/29/21 15:04	12/01/21 15:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	63		41 - 120	11/29/21 15:04	12/01/21 15:57	1
2-Fluorobiphenyl	105		48 - 120	11/29/21 15:04	12/01/21 15:57	1
2-Fluorophenol	67		35 - 120	11/29/21 15:04	12/01/21 15:57	1
Nitrobenzene-d5	90		46 - 120	11/29/21 15:04	12/01/21 15:57	1
Phenol-d5	50		22 - 120	11/29/21 15:04	12/01/21 15:57	1
p-Terphenyl-d14	89		60 - 148	11/29/21 15:04	12/01/21 15:57	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/30/21 09:37	12/02/21 01:34	1
Arsenic	ND		0.010	0.0056	mg/L		11/30/21 09:37	12/02/21 01:34	1
Barium	0.055		0.0020	0.00070	mg/L		11/30/21 09:37	12/02/21 01:34	1
Cadmium	ND		0.0010	0.00050	mg/L		11/30/21 09:37	12/02/21 01:34	1
Chromium	0.0011	J	0.0040	0.0010	mg/L		11/30/21 09:37	12/02/21 01:34	1
Copper	0.0026	J	0.010	0.0016	mg/L		11/30/21 09:37	12/02/21 01:34	1
Iron	0.042	J	0.050	0.019	mg/L		11/30/21 09:37	12/02/21 01:34	1
Lead	ND		0.0050	0.0030	mg/L		11/30/21 09:37	12/02/21 01:34	1
Magnesium	27.4		0.20	0.043	mg/L		11/30/21 09:37	12/02/21 01:34	1
Manganese	0.23		0.0030	0.00040	mg/L		11/30/21 09:37	12/02/21 01:34	1
Nickel	0.0019	J	0.010	0.0013	mg/L		11/30/21 09:37	12/02/21 01:34	1
Silver	ND		0.0030	0.0017	mg/L		11/30/21 09:37	12/02/21 01:34	1
Sodium	3.3		1.0	0.32	mg/L		11/30/21 09:37	12/02/21 01:34	1
Zinc	0.0045	J	0.010	0.0015	mg/L		11/30/21 09:37	12/02/21 01:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/29/21 13:47	11/29/21 17:46	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-192851-1

Client Sample ID: GW-33S

Lab Sample ID: 480-192851-6

Date Collected: 11/24/21 13:10

Matrix: Water

Date Received: 11/24/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/21 08:17	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/21 08:17	1
Acetone	ND		10	3.0	ug/L			11/30/21 08:17	1
Benzene	ND		1.0	0.41	ug/L			11/30/21 08:17	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/21 08:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120		11/30/21 08:17	1
Toluene-d8 (Surr)	99		80 - 120		11/30/21 08:17	1
4-Bromofluorobenzene (Surr)	97		73 - 120		11/30/21 08:17	1
Dibromofluoromethane (Surr)	102		75 - 123		11/30/21 08:17	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/29/21 15:04	12/01/21 16:24	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/29/21 15:04	12/01/21 16:24	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/29/21 15:04	12/01/21 16:24	1
Phenol	ND		5.0	0.39	ug/L		11/29/21 15:04	12/01/21 16:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	65		41 - 120	11/29/21 15:04	12/01/21 16:24	1
2-Fluorobiphenyl	100		48 - 120	11/29/21 15:04	12/01/21 16:24	1
2-Fluorophenol	64		35 - 120	11/29/21 15:04	12/01/21 16:24	1
Nitrobenzene-d5	86		46 - 120	11/29/21 15:04	12/01/21 16:24	1
Phenol-d5	46		22 - 120	11/29/21 15:04	12/01/21 16:24	1
p-Terphenyl-d14	91		60 - 148	11/29/21 15:04	12/01/21 16:24	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/30/21 09:37	12/02/21 01:49	1
Arsenic	ND		0.010	0.0056	mg/L		11/30/21 09:37	12/02/21 01:49	1
Barium	0.079		0.0020	0.00070	mg/L		11/30/21 09:37	12/02/21 01:49	1
Cadmium	ND		0.0010	0.00050	mg/L		11/30/21 09:37	12/02/21 01:49	1
Chromium	0.0011	J	0.0040	0.0010	mg/L		11/30/21 09:37	12/02/21 01:49	1
Copper	ND		0.010	0.0016	mg/L		11/30/21 09:37	12/02/21 01:49	1
Iron	ND		0.050	0.019	mg/L		11/30/21 09:37	12/02/21 01:49	1
Lead	ND		0.0050	0.0030	mg/L		11/30/21 09:37	12/02/21 01:49	1
Magnesium	30.1		0.20	0.043	mg/L		11/30/21 09:37	12/02/21 01:49	1
Manganese	0.022		0.0030	0.00040	mg/L		11/30/21 09:37	12/02/21 01:49	1
Nickel	ND		0.010	0.0013	mg/L		11/30/21 09:37	12/02/21 01:49	1
Silver	ND		0.0030	0.0017	mg/L		11/30/21 09:37	12/02/21 01:49	1
Sodium	2.4		1.0	0.32	mg/L		11/30/21 09:37	12/02/21 01:49	1
Zinc	0.0018	J	0.010	0.0015	mg/L		11/30/21 09:37	12/02/21 01:49	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000043	mg/L		11/29/21 13:47	11/29/21 17:48	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-192851-1

Client Sample ID: TB-112421

Lab Sample ID: 480-192851-7

Date Collected: 11/24/21 00:00

Matrix: Water

Date Received: 11/24/21 14:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/21 08:40	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/21 08:40	1
Acetone	ND		10	3.0	ug/L			11/30/21 08:40	1
Benzene	ND		1.0	0.41	ug/L			11/30/21 08:40	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/21 08:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120		11/30/21 08:40	1
Toluene-d8 (Surr)	98		80 - 120		11/30/21 08:40	1
4-Bromofluorobenzene (Surr)	94		73 - 120		11/30/21 08:40	1
Dibromofluoromethane (Surr)	103		75 - 123		11/30/21 08:40	1

APPENDIX B

SUPPORT DOCUMENTATION

Chain of Custody Record

Client Information		Lab PM#		Carrier Tracking No(s)		COC No	
Client Contact Ms. Ann Marie Kropovitch		Lab PM# John R Schove, John R		Carrier Tracking No(s) NY		COC No 480-168108-13273.1	
Company AECOM		E-Mail John.Schove@Eurofinset.com		State of Origin		Page 1 of 2	
Address One John James Audubon Parkway Suite 210		PWSID		Job #			
City Amherst		Due Date Requested:		Analysis Requested		Preservation Codes:	
State, Zip NY, 14228		TAT Requested (days): STANDARD				A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - Sodium hexahydrate	
Phone:		Compliance Project: ☐ Yes ☐ No					
Email: ann.marie.kropovitch@aecom.com		PO # 111666 Line 3					
Project Name: Pfohl Brothers Landfill GW Monitoring		WO # 60411174.11175616.00000					
Site: Pfohl Brothers Landfill GW Monitoring		Project # 48002609					
		SSOW#					

Sample Identification	Sample Date	Sample Time	Sample Type (G=grab, B=bulk, etc.)	Matrix (W=water, S=solid, G=gas, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270D - Semivolatiles - Pfohl List	8260C - Volatiles - Pfohl List	Total Num	Special Instructions/Note:
GW-075	11/22/21	1020	G	Water					3	
GW-07D	11/22/21	1015	G	Water					3	
GW-01D	11/22/21	1420	G	Water			1 2 3			
GW-01S	11/22/21	1510	G	Water			1 2 3			
GW-04S	11/22/21	1545	G	Water					3	
GW-04D	11/22/21	1711	G	Water			1 2 3			
GW-04S	11/22/21	1722	G	Water			1 2			
GW-34S	11/23/21	0917	G	Water			1 2 3			
GW-03S	11/23/21	1012	G	Water			1 2 3			
GW-03D	11/23/21	1128	G	Water			1 2 3			
GW-07D	11/23/21	1200	G	Water			1 2			

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
☒ Non-Hazard	☐ Flammable	☐ Return To Client	☒ Disposal By Lab
☐ Skin Irritant	☐ Poison B	☐ Unknown	☐ Radiological
Deliverable Requested I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	

Empty Kit Relinquished by:		Date:	
Relinquished by: <i>[Signature]</i>		Date: 11/23/21 1820	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Custody Seals Intact ☐ Yes ☐ No		Custody Seal No.	

Received by:		Method of Shipment:	
Company: AECOM		Method of Shipment: <i>Drop off</i>	
Received by: <i>[Signature]</i>		Date/Time: 11/23/21 1820	
Company: AECOM		Date/Time:	
Received by:		Date/Time:	
Company: AECOM		Date/Time:	
Cooler Temperature(s) °C and Other Remarks: 3.5 #1			

Chain of Custody Record

Client Information		Lab PM Schove, John R		Carrier Tracking No(s)		COC No: 480-168108-13273.2	
Client Contact Ms. Ann Marie Kropovitch		E-Mail John.Schove@Eurofinstest.com		State of Origin		Page: Page 2 of 2	
Company AECOM		PWSID:		Job #:			
Address: One John James Audubon Parkway Suite 210 City: Amherst State, Zip: NY, 14228 Phone: 111666 Line 3 Email: ann.marie.kropovitch@aecom.com Project Name: Pfohl Brothers Landfill GW Monitoring Site: SSOW#		Due Date Requested: TAT Requested (days): STANDARD Compliance Project: ☐ Yes ☒ No PO # 111666 Line 3 WO # 60411174.11175616.00000 Project # 48002609 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 Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)	
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)	
GW-075		11/23/21		1215		G	
GW-08D		11/23/21		1354		G	
GW-08D MS		11/23/21		1354		G	
GW-08SR		11/23/21		1354		G	
GW-05S		11/23/21		1354		G	
GW-26D		11/23/21		1607		G	
FD-112321		11/23/21		1720		G	
TB-112221 + 112321		11/23/21		-		G	
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Date:		Time:		Method of Shipment:	
Relinquished by: Robert J. Nye		Date/Time: 11/23/21 1820		Date/Time: 11/23/21 1820		Company: TBA	
Relinquished by:		Date/Time:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Date/Time:		Company:	
Custody Seals Intact: ☐ Yes ☒ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		Ver: 06/08/2021	

Case Narrative

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Job ID: 480-192800-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-192800-1

Comments

No additional comments.

Receipt

The samples were received on 11/23/2021 6:20 PM. 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 was 3.5° C.

GC/MS VOA

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

GC/MS Semi VOA

Method 8270D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 480-606534 and analytical batch 480-607094 recovered outside control limits for the following surrogate: 2,4,6-Tribromophenol and 2-Fluorobiphenyl. This surrogate is biased high and no detections were found for associated analytes in the following affected samples: GW-08D (480-192800-13). Therefore, the data has been reported.

Method 8270D: Surrogate recovery was outside acceptance limits for the following matrix spike/matrix spike duplicate (MS/MSD) samples: GW-08D (480-192800-13[MS]) and GW-08D (480-192800-13[MSD]). The parent sample's surrogate recovery was within limits. The MS/MSD sample has been qualified and reported.

Method 8270D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 480-606534 and analytical batch 480-607249 recovered outside control limits for the following surrogate: 2,4,6-Tribromophenol and 2-Fluorobiphenyl. This surrogate is biased high and no detections were found for associated analytes in the following affected samples: GW-01D (480-192800-3), GW-01S (480-192800-4), GW-04D (480-192800-6), GW-34S (480-192800-8), GW-03S (480-192800-9), GW-03D (480-192800-10), GW-08SR (480-192800-14), GW-35S (480-192800-15), GW-26D (480-192800-16), FD-112321 (480-192800-17), GW-07S (480-192800-19), GW-07D (480-192800-20) and GW-04S (480-192800-21). Therefore, the data has been reported.

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

Metals

Method 6010C: The method blank for preparation batch 480-606691 and analytical batch 480-607045 contained Total Manganese above the reporting limit (RL). Associated samples GW-01S (480-192800-4), GW-34S (480-192800-8), GW-03S (480-192800-9), GW-03D (480-192800-10), GW-08SR (480-192800-14), GW-35S (480-192800-15), GW-26D (480-192800-16) and FD-112321 (480-192800-17) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

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

Organic Prep

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

QC Sample Results

Client: AECOM
Project/Site: Landfill GW Monitoring

Job ID: 480-192800-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: 480-192800-13 MS

Matrix: Water

Analysis Batch: 607094

Client Sample ID: GW-08D

Prep Type: Total/NA

Prep Batch: 606534

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	ND		32.0	32.2		ug/L		100	51 - 120
1,4-Dichlorobenzene	ND		32.0	31.9		ug/L		100	32 - 150
Bis(2-ethylhexyl) phthalate	ND		32.0	22.9		ug/L		72	16 - 150
Phenol	ND		32.0	20.3		ug/L		63	16 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol	121	S1+	41 - 120
2-Fluorobiphenyl	122	S1+	48 - 120
2-Fluorophenol	81		35 - 120
Nitrobenzene-d5	112		46 - 120
Phenol-d5	62		22 - 120
p-Terphenyl-d14	84		60 - 148

Lab Sample ID: 480-192800-13 MSD

Matrix: Water

Analysis Batch: 607094

Client Sample ID: GW-08D

Prep Type: Total/NA

Prep Batch: 606534

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	ND		32.0	33.7		ug/L		105	51 - 120	5	37
1,4-Dichlorobenzene	ND		32.0	33.8		ug/L		106	32 - 150	6	36
Bis(2-ethylhexyl) phthalate	ND		32.0	26.5		ug/L		83	16 - 150	15	15
Phenol	ND		32.0	21.2		ug/L		66	16 - 120	4	34

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol	136	S1+	41 - 120
2-Fluorobiphenyl	125	S1+	48 - 120
2-Fluorophenol	85		35 - 120
Nitrobenzene-d5	116		46 - 120
Phenol-d5	66		22 - 120
p-Terphenyl-d14	98		60 - 148

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-606691/1-A

Matrix: Water

Analysis Batch: 607045

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 606691

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/29/21 09:40	11/29/21 21:50	1
Arsenic	ND		0.010	0.0056	mg/L		11/29/21 09:40	11/29/21 21:50	1
Barium	ND		0.0020	0.00070	mg/L		11/29/21 09:40	11/29/21 21:50	1
Cadmium	ND		0.0010	0.00050	mg/L		11/29/21 09:40	11/29/21 21:50	1
Chromium	ND		0.0040	0.0010	mg/L		11/29/21 09:40	11/29/21 21:50	1
Copper	ND		0.010	0.0016	mg/L		11/29/21 09:40	11/29/21 21:50	1
Iron	ND		0.050	0.019	mg/L		11/29/21 09:40	11/29/21 21:50	1
Lead	ND		0.0050	0.0030	mg/L		11/29/21 09:40	11/29/21 21:50	1
Magnesium	ND		0.20	0.043	mg/L		11/29/21 09:40	11/29/21 21:50	1
Manganese	0.00411		0.0030	0.00040	mg/L		11/29/21 09:40	11/29/21 21:50	1

Eurofins TestAmerica, Buffalo

Client Information				Analysis Requested				Special Instructions/Note:			
Client Contact: Ms. Ann Marie Kropovitch Company: AECOM Address: One John James Audubon Parkway Suite 210 City: Amherst State: NY, Zip: 14228 Phone: 716-903-1346 Email: ann.marie.kropovitch@aecom.com				Lab PM: Schove, John R E-Mail: John.Schove@Eurofinset.com Carrier Tracking No(s): 480-168108-13273.3 State of Origin: 10F1				Preservation Codes: 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 Z - other (specify)			
Due Date Requested:				TAT Requested (days):				Compliance Project: Yes No			
PO #				WO #				Project #			
SSOW#				Sample Date				Sample Time			
Sample Identification				Sample Type (C=Comp, G=grab)				Matrix (W=water, S=solid, O=oil)			
Sample Date				Sample Time				Preservation Code			
GW-285				G				Water			
GW-295				G				Water			
GW-305				G				Water			
GW-315				G				Water			
GW-325				G				Water			
GW-335				G				Water			
TB-112421				G				Water			

Possible Hazard Identification				Special Instructions/Note:			
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological				Total Number of Containers: 6 Special Instructions/Note: 2 TRIP BLANK			
Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]				Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]			

Empty Kit Relinquished by:				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]				Return To Client: ☐ Disposal By Lab: ☒ Archive For: Months			
Date/Time: 11/24/21 1450 Date/Time: 11/24/21 1450 Date/Time: 11/24/21 1450				Date/Time: 11/24/21 1450 Date/Time: 11/24/21 1450 Date/Time: 11/24/21 1450			

Case Narrative

Client: AECOM
Project/Site: Pfohl Brothers Landfill

Job ID: 480-192851-1

Job ID: 480-192851-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-192851-1

Comments

No additional comments.

Receipt

The samples were received on 11/24/2021 2:50 PM. 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 was 4.2° C.

GC/MS VOA

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

GC/MS Semi VOA

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

Metals

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

Organic Prep

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

ATTACHMENT C

IC/EC CERTIFICATION



Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form



Site No.	915043	Site Details	Box 1
Site Name Pfohl Brothers Landfill			
Site Address: Aero Drive and Transit Road Zip Code: 14225			
City/Town: Cheektowaga			
County: Erie			
Site Acreage: 94.000			
Reporting Period: February 12, 2021 to February 12, 2022			
			YES NO
1. Is the information above correct?			☒ ☐
If NO, include handwritten above or on a separate sheet.			
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?			☐ ☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?			☐ ☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?			☐ ☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.			
5. Is the site currently undergoing development?			☐ ☒

			Box 2
			YES NO
6. Is the current site use consistent with the use(s) listed below? Closed Landfill			☒ ☐
7. Are all ICs in place and functioning as designed?			☒ ☐

**IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and
DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.**

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

Description of Institutional Controls

<u>Parcel</u>	<u>Owner</u>	<u>Institutional Control</u>
81.04-1-26	William A. Pfohl	Ground Water Use Restriction Soil Management Plan Landuse Restriction Building Use Restriction Surface Water Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
- B. Capped Area: i) Fencing, ii) No Excavation, iii) Planting trees/shrubs prohibited.
- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

81.04-1-27 Paul Pfohl

Ground Water Use Restriction
Landuse Restriction

Building Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
- B. Capped Area: i) Fencing, ii) No Excavation, iii) Planting trees/shrubs prohibited.
- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

81.04-1-28.1 Paul Pfohl

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
- B. Capped Area: i) Fencing, ii) No Excavation, iii) Planting trees/shrubs prohibited.
- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

81.04-2-10.1 Paul Pfohl

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
- B. Capped Area: i) Fencing, ii) No Excavation, iii) Planting trees/shrubs prohibited.
- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

81.04-2-11

Paul Pfohl

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
- B. Capped Area: i) Fencing, ii) No Excavation, iii) Planting trees/shrubs prohibited.
- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

81.04-2-9.1

Paul Pfohl

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

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82.03-4-10

Elizabeth L. McBride

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

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- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
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- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

82.03-4-11

Paul Pfohl

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

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- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

82.03-4-5

Paul Pfohl

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

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- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
- B. Capped Area: i) Fencing, ii) No Excavation, iii) Planting trees/shrubs prohibited.
- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

82.03-4-6

Paul Pfohl

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

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- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
- B. Capped Area: i) Fencing, ii) No Excavation, iii) Planting trees/shrubs prohibited.
- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

82.03-4-8

Paul Pfohl

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

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- B. Capped Area: i) Fencing, ii) No Excavation, iii) Planting trees/shrubs prohibited.
- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

82.03-4-9.11

Aero Land, Inc. c/o Jerome Hirsh

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
- B. Capped Area: i) Fencing, ii) No Excavation, iii) Planting trees/shrubs prohibited.
- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

82.03-4-9.12

Stuart Jenkins

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
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82.03-4-9.2

Aero Land, Inc. c/o Jerome Hirsh

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
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- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

Box 4

Description of Engineering Controls

Parcel

Engineering Control

81.04-1-26

Vapor Mitigation
Fencing/Access Control
Cover System
Leachate Collection

81.04-1-27

Cover System
Leachate Collection
Fencing/Access Control
Vapor Mitigation

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

81.04-1-28.1

Vapor Mitigation
Cover System
Leachate Collection
Fencing/Access Control

Parcel

Engineering Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

81.04-2-10.1

Vapor Mitigation
Cover System
Leachate Collection
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

81.04-2-11

Vapor Mitigation
Cover System
Leachate Collection
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

81.04-2-9.1

Vapor Mitigation
Cover System
Leachate Collection
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

82.03-4-10

Vapor Mitigation
Cover System
Leachate Collection
Fencing/Access Control

82.03-4-11

Vapor Mitigation
Cover System
Leachate Collection
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

82.03-4-5

Vapor Mitigation
Cover System
Leachate Collection
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

82.03-4-6

Vapor Mitigation
Cover System
Leachate Collection
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

82.03-4-8

Vapor Mitigation
Cover System
Leachate Collection
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

82.03-4-9.11

Vapor Mitigation
Cover System

Parcel

Engineering Control

Leachate Collection
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

82.03-4-9.12

Vapor Mitigation
Cover System
Leachate Collection
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

82.03-4-9.2

Vapor Mitigation
Cover System
Leachate Collection
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

- a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;
- b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and complete.

YES NO

☒ ☐

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

- (a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;
- (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;
- (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;
- (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and
- (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO

☒ ☐

**IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and
DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.**

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 915043

Box 6

O & M MANAGER
SITE ~~OWNER~~ OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Patrick T. Bowen, P.E. at Town of Cheektowaga
275 Alexander Ave, Cheektowaga, NY 14211,
print name print business address

am certifying as Site O & M Manager (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Patrick T. Bowen
Signature of Owner, Remedial Party, or Designated Representative
Rendering Certification Site O & M Provider/Manager

4/11/22
Date

EC CERTIFICATIONS

Box 7

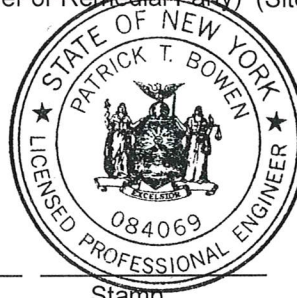
Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Patrick T. Bowen, P.E. at Town of Cheektowaga
print name 275 Alexander Ave, Cheektowaga, NY 14211
print business address

am certifying as a Professional Engineer for the Town of Cheektowaga

(~~Owner or Remedial Party~~) (Site O & M Provider/Manager)



Patrick T. Bowen
Signature of Professional Engineer, for the ~~Owner or~~
~~Remedial Party~~, Rendering Certification
Site O & M Provider/Manager

Stamp
(Required for PE)

4/11/22
Date