

**PERIODIC REVIEW REPORT 2016
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
257 WEST GENESEE STREET, SUITE 400
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Prepared for:

**TOWN OF CHEEKTOWAGA
ENGINEERING DEPARTMENT
275 ALEXANDER AVE
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MARCH 2017

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Figure 2-1 Site Plan

ATTACHMENTS

Attachment A January 2016 – June 2016 Semi Annual Report and Data Applicability Report
Attachment B July 2016 – December 2016 Semi Annual Report and Data Applicability Report
Attachment C IC/EC Certification

1.0 INTRODUCTION

1.1 Background

This Pfohl Brothers Landfill Site (No. 915043) is a 130 acre landfill located on the north and south sides of Aero Drive in the Town of Cheektowaga, Erie County. The site is located in a commercial area just west of Transit Road. The landfill was operated between 1940 and 1969 receiving household and industrial wastes. The industrial waste materials 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 and Semi-Volatile Organic Compounds, and metals at various concentrations. 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 removed 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 2000. 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 commenced in 2001 and was completed in 2002. The consolidated landfill was reduced to 94 acres. Deed restrictions have been filed by the Potentially Responsible Parties (PRPs). The Operation, Maintenance and Monitoring (OM&M) Plan was approved in March 2006 and is being implemented by the Town of Cheektowaga.

1.2 Effectiveness of Remedial Program

During 2016, the capping and remedial action remedy continued to successfully prevent exposure of buried waste to human health or environmental receptors. Effectiveness has been demonstrated through maintenance of the landfill cap, effective hydraulic control of groundwater beneath the cap, and regular semi-annual groundwater sampling.

1.3 Compliance

The management of the site is in compliance with the OM&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 site is located immediately southwest of the intersection of Interstate 90 and 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 comprising 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 wetwells. Leachate and groundwater collected in the wetwells is pumped via submersible pumps in the wetwells to a fifteen-inch sanitary sewer line on the south side of Aero Drive. This sanitary sewer, installed as part of the remedy, connects to the existing fifteen-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 (BSA).

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.

OM&M commenced in 2002 upon completion of construction. These efforts are performed in accordance with the OM&M plan issued as draft in 2002 and approved as final in 2006. Based upon the results of the first three years of surface water, sediment and monitoring results, 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 and SVOC parameters and metals) and 2007 (discontinuing dioxin and radionuclide analyses).

3.0 REMEDY PERFORMANCE, EFFECTIVENESS AND PROTECTIVENESS

The principal elements of the OM&M are:

- ▶ Groundwater Monitoring

- ▶ Surface Water/Sediment Sampling
- ▶ Effluent Monitoring
- ▶ Hydraulic Monitoring
- ▶ Wetlands Monitoring
- ▶ General physical and mechanical maintenance.

The Town of Cheektowaga submits OM&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 2015 are attached to this Periodic Review Report. A summary of the findings of performance, effectiveness, and protectiveness for 2015 is presented in the sections below.

3.1 Groundwater Monitoring

As the OM&M contractor for the Town of Cheektowaga, URS Corporation (URS) has performed twenty-six rounds of semi-annual groundwater sampling. The most recent sampling was conducted in May and November 2016. Results of this sampling continue to show no impacts to groundwater from the landfill. In brief, no VOCs or SVOCs were detected above Class GA water quality standards.

Among the metals, iron, magnesium, manganese, and sodium routinely exceed Class GA standards in most site wells. The only other metals detected above Class GA standards in 2016 were chromium and lead in upgradient well GW-07D during both sampling events. No significant changes in metals concentrations were observed when compared to previous sampling event analytical results and were within the historical range of concentrations observed for these metals. The attached semi-annual reports present the 2016 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 approved OM&M plan and as approved by NYSDEC.

3.3 Effluent Monitoring

URS performed effluent monitoring on a quarterly basis during 2016. The results of the sampling are reported in the attached semi-annual reports. The parameter values in the effluent have always been well below the discharge criteria for all quarterly sampling events conducted since the start of the OM&M, with the exception of a flow rate exceedance in December 2016 (163,533 gallons during the one day collection period compared to a permitted amount of 140,000 gallons per day).

3.4 Hydraulic Monitoring

URS performed hydraulic monitoring on a quarterly basis during 2016. Hydraulic monitoring is performed through measuring the water elevation in each of the six wetwells 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 wetwell or manhole. Hydraulic control is demonstrated by an inward hydraulic gradient from the monitoring wells to the collection system. The hydraulic gradient was towards the groundwater collection system for every quarterly measurement taken during 2016. Therefore, these data demonstrate that the collection system is operating as designed.

3.5 Wetlands Monitoring

The monitoring of wetlands mitigation has not gone as originally planned in the OM&M manual. 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 wetland.

3.6 General Physical and Mechanical Maintenance

The Town of Cheektowaga performs the necessary general physical and mechanical maintenance 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 2016 is provided in the attached semi-annual reports.

4.0 IC/EC PLAN COMPLIANCE

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

4.1 Institutional Controls

Institutional controls (ICs) consist of restrictions on land use for the various parcels that comprise this site. The parcels subject and their restrictions are listed on the attached Site Management Periodic Review Report Notice Institutional and Engineering Controls Certification Form. The restrictions address building use, groundwater 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

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 semi-annual 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. These ECs remain in effect, as certified in Attachment C.

5.0 OPERATION & MAINTENANCE AND MONITORING PLAN COMPLIANCE

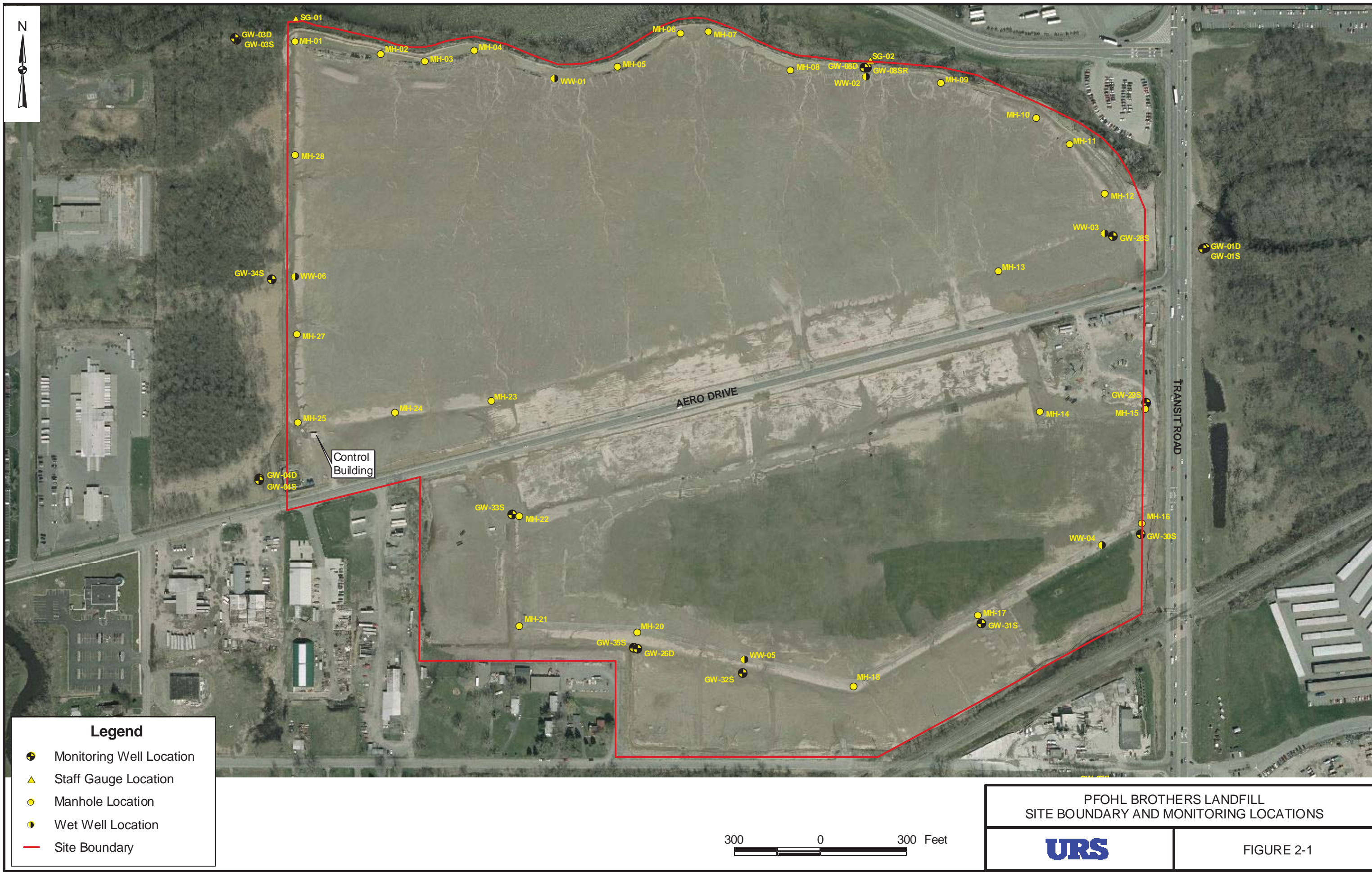
The components of the OM&M Plan are discussed above in Section 3.0. Summaries of OM&M activities performed during 2016 are provided in the attached semi-annual reports. The OM&M activities show that the landfill and its groundwater/leachate collection system are operating as intended, and receive repairs and maintenance as needed in a timely fashion. Sampling 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. No changes to the OM&M for this site are recommended.

6.0 CONCLUSIONS AND RECOMMENDATIONS

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

FIGURES



ATTACHMENTS

ATTACHMENT A

January 2016 – June 2016

Semi Annual Report

And

Data Applicability Report

**SEMI ANNUAL REPORT
OPERATION AND MAINTENANCE
JANUARY 2016 TO JUNE 2016
PFOHL BROTHERS LANDFILL
CHEEKTOWAGA, NY**

Submitted to:

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

Prepared by:

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257 WEST GENESEE STREET, SUITE 400
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Prepared for:

**TOWN OF CHEEKTOWAGA
ENGINEERING DEPARTMENT
275 ALEXANDER AVE
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**AUGUST
2016**



September 12, 2016

Mr. Jaspal Singh Walia, P.E.
New York State Department of Environmental Conservation
270 Michigan Ave.
Buffalo, NY 14203

**Re: Semi-Annual Report January 2016 – June 2016
 Pfohl Brothers Landfill, Town of Cheektowaga, New York**

Dear Mr. Walia:

Enclosed is one copy of the January 2016 – June 2016 Semi-Annual Report for the Pfohl Brothers Landfill in Cheektowaga, New York. A copy has also been sent to Ms. Pamela Tames, P.E. of the United States Environmental Protection Agency. Also enclosed is the Data Applicability Report for laboratory analyses associated with the Semi-Annual Report. PDF copies of the reports are also enclosed.

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

Sincerely,

URS CORPORATION

A handwritten signature in black ink, appearing to read "Jon Sundquist", is positioned above the printed name.

Jon Sundquist, Ph.D.
Project Manager

Enclosures

cc: Pamela Tames, P.E. - USEPA (w/attachments)
 Patrick Bowen, P.E. – Town of Cheektowaga (w/attachments)
 File 11172700 (C-1)

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APPENDICES

Appendix A	Example Daily Inspection Sheets
Appendix B	Monthly Flow Summaries (January 2016 – June 2016)
Appendix C	Hydraulic Monitoring Tables
Appendix D	Groundwater Purge and Sample Collection Logs
Appendix E	Groundwater Trend Analysis
Appendix F	BSA Permit No. 13-04-CH016 and 16-04-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 manual was not approved by the NYSDEC until March 10, 2006. However, the Town of Cheektowaga and its consultant (URS Corporation – New York) 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 semi-annual 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 2016 through June 2016 include the following actions:

- The amount of groundwater discharged through the collection system was recorded on a daily basis. 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. Examples of the daily inspection sheet are attached in Appendix A.
- Total cumulative effluent flow rates and volumes were summarized on a monthly basis starting in February 2003. The monthly totals for the period of January 2016 through June 2016, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- The wet well pumps were shut down 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 as previously requested by NYSDEC.
- Plowed snow to access the Control Building when necessary.
- Cleaned/replaced check valves as necessary at all six (6) wet wells.
- Replaced surge suppressors, fuses, and discharge hoses as needed for pump station instrumentation equipment.
- Replaced blown level signal fuse F101 and defective level signal TVSS in the control panel of WW-1.
- Replaced blown level signal fuse F102 and defective level signal TVSS in the control panel. Replaced defective flow signal TVSS in control panel in WW-2.
- Continued diagnosis and repair of Flow Logging System

- Removed heavy debris dumped at the roadside.

3.0 MONITORING ACTIVITIES

The Town of Cheektowaga retained URS Corporation to perform monitoring activities as outlined in Section 3.1 of the O&M plan. During the period of January 2004 through the present, URS performed 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) on a quarterly basis. URS also performed the semi-annual groundwater quality monitoring (Section 3.1.1.3 of the O&M plan) during this period. 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. Table 1 of Appendix C lists the measured elevations. Table 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. Therefore, these data demonstrate that the collection system is operating as designed.

3.2 Groundwater Quality Monitoring

This semi-annual round of groundwater sampling was conducted between May 18 and 20, 2016. All 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 at most monitoring well locations.

Passive diffusion bags (PDBs) were placed in three monitoring wells with low recharge rates (GW-04S, GW-07S, and GW-07D) on March 16, 2016. The PDBs were removed from the wells during the sampling event and their contents were analyzed for VOCs. Following removal of the PDBs the three wells were purged dry. These wells were sampled for the other required parameters after their water levels recovered.

Purge logs and sampling summary sheets are provided in Appendix D. Measurements of pH, specific conductivity, temperature, dissolved oxygen, oxidation reduction potential, and turbidity taken during purging are provided in Appendix D. The samples were packed with ice in coolers and transported under chain-of-custody (CoC) control to Test America Laboratories of Amherst, New York.

Table 3-1 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. Groundwater samples were analyzed for the parameters listed in Table 3.2 of the O&M plan as revised in accordance with Table 3-6 in the Semi Annual 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 (that table is included in this report as Table 3-2).

Results

No VOCs or SVOCs were detected at concentrations above the Class GA water quality standards at any location.

Among the metals, iron, magnesium, manganese, and sodium routinely exceed Class GA standards in most site wells. In addition, chromium and lead were detected at concentrations exceeding their respective Class GA standards in well GW-07D.

Comparison to Historical Results

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

Sodium concentrations were generally higher in bedrock wells (GW-01D, GW-03D, GW-08D and GW-26D) and shallow wells adjacent to roads (GW-01S and GW-30S). The sodium concentration was also elevated in GW-08SR. The higher sodium concentrations in the bedrock wells may be attributed to the local bedrock composition and the elevated concentration in the shallow wells may be the result of seasonal road de-icing activities.

Trend Analysis

A trend analysis of groundwater parameters that routinely exceed Class GA groundwater standards was performed and is presented 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 except as described below. Figure E-2 for GW-01S, indicates a recent upward trend in manganese concentrations and a downward trend in sodium concentration since monitoring began. Figure E-3 for GW-03D indicates a downward trend for manganese. Figure E-4 indicates upward trends for magnesium and sodium in GW-03S since monitoring began. Figure E-5 for GW-04D, indicates a slight increasing trend for magnesium. Figure E-9 for GW-08D shows a decreasing trend for both iron and manganese since monitoring began. Figure E-10 for GW-08SR shows an increasing trend for sodium since monitoring began. Figure E-11 for GW-26D indicates downward trends for iron and manganese and a slight upward trend for sodium. Figures E-12 and E-13 for GW-28S and GW-29S, respectively, indicate a decreasing trend for sodium since monitoring began. Figure E-14 for GW-30S shows a decreasing trend for iron, magnesium, manganese, and sodium. Figure E-16 shows there is a seasonal variation in sodium concentration in monitoring well GW-32S. Figure E-18 for GW-34S indicates a seasonal fluctuation in manganese concentration with an overall increasing trend since the Fall of 2011.

Laboratory Report

The groundwater analytical data package was prepared by Test America in accordance with NYSDEC Category A deliverable requirements. It was reviewed for compliance with analytical method requirements and the following guidelines: *National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-014-002, August 2014; and *National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-13-001, August 2014. Qualifications applied to the data include “J/UJ” (estimated concentration/estimated quantitation limit), “J+” (estimated concentration with possible high bias), “J-” (estimated concentration with possible low bias), and “U” (not detected).

A Data Applicability Report (DAR) was prepared 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 August 2016 is submitted separately from this report.

3.3 Groundwater Discharge Monitoring

URS completed two quarterly sampling events (March 2016 and June 2016) of the groundwater collection system discharge since the previous semi-annual report. The sampling was performed in accordance with the requirements of Discharge Permit Nos. 13-04-CH016 and 16-04-CH016 between the Buffalo Sewer Authority and the Town of Cheektowaga. Permit No. 13-04-CH016 expired on March 31, 2016 and was replaced with Permit No. 16-04-CH016. A copy of each permit is included as Appendix F.

During the sampling events in March 2016 and June 2016, each regulated parameter was below the limits set by the permit. Copies of the data summary tables that were included with the monitoring reports are included as Appendix G.

3.4 Monitoring Well Inspections

During the May 2016 groundwater sampling event, a well inspection was performed. All wells appeared to be in good condition with the exception of previously existing damage to the risers on GW-07D, GW-01S, and GW-01D. Locks were replaced at GW-01S and GW-01D. The monitoring well inspection logs may be found in Appendix H.

4.0 SUMMARY AND RECOMMENDATIONS

General Maintenance: The Town 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 access to the control building during winter months 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 hydraulic gradient is from outside the landfill towards the collection trench. Continued quarterly monitoring is recommended.

Groundwater Quality Monitoring: Groundwater sample results indicate that only low levels of organic compounds 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 2016. 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 even using low flow sampling techniques.

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

TABLES

TABLE 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2016

Location ID			GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID			GW-1D	GW-1S	GW-3D	GW-3S	GW-4D
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/18/16	05/18/16	05/19/16	05/19/16	05/18/16
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					
Acetone	UG/L	50					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3			2.1 J		
1,4-Dichlorobenzene	UG/L	3			3.0 J		
Metals							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.076	0.17	0.079	0.088	0.085
Cadmium	MG/L	0.005		0.0016		0.0023	
Chromium	MG/L	0.05	0.043	0.0034 J	0.0066	0.022	0.014
Copper	MG/L	0.2				0.0024 J	
Iron	MG/L	0.3	1.0	8.5	1.3	1.3	0.11
Lead	MG/L	0.025		0.0032 J			
Magnesium	MG/L	35	36.2	21.2	17.1	101	76.6
Manganese	MG/L	0.3	0.038	1.4	0.31	0.18	0.026
Nickel	MG/L	0.1	0.0086 J		0.0033 J	0.051	0.012
Sodium	MG/L	20	94.6	119	158	73.5	78.5
Zinc	MG/L	2	0.0048 J	0.0017 J		0.015	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 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 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2016

Location ID			GW-04S	GW-04S	GW-07D	GW-07D	GW-07S
Sample ID			GW-4S	GW-4S	GW-7D	GW-7D	GW-7S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/18/16	05/18/16	05/18/16	05/19/16	05/18/16
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5		NA		NA	
Acetone	UG/L	50	3.3 J	NA		NA	4.4 J
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3	NA		NA		NA
1,4-Dichlorobenzene	UG/L	3	NA		NA		NA
Metals							
Arsenic	MG/L	0.025	NA		NA		NA
Barium	MG/L	1	NA	0.12	NA	0.096	NA
Cadmium	MG/L	0.005	NA	0.0015	NA	0.0018	NA
Chromium	MG/L	0.05	NA	0.0078	NA	0.19	NA
Copper	MG/L	0.2	NA	0.0062 J	NA	0.032	NA
Iron	MG/L	0.3	NA	2.4	NA	5.8	NA
Lead	MG/L	0.025	NA		NA	0.092	NA
Magnesium	MG/L	35	NA	28.6	NA	36.4	NA
Manganese	MG/L	0.3	NA	0.093	NA	0.070	NA
Nickel	MG/L	0.1	NA	0.0081 J	NA	0.091	NA
Sodium	MG/L	20	NA	36.8	NA	74.6	NA
Zinc	MG/L	2	NA	0.017	NA	0.056	NA

* - 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

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NA - Not Analyzed.

Only Detected Results Reported.

TABLE 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2016

Location ID			GW-07S	GW-08D	GW-08SR	GW-26D	GW-26D
Sample ID			GW-7S	GW-8D	GW-8SR	FD-052016	GW-26D
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/19/16	05/19/16	05/19/16	05/20/16	05/20/16
Parameter	Units	*				Field Duplicate (1-1)	
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5	NA			1.3 J	1.2 J
Acetone	UG/L	50	NA				
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
Metals							
Arsenic	MG/L	0.025			0.0099 J	0.0099 J	0.0088 J
Barium	MG/L	1	0.31	0.076	0.30	0.13	0.12
Cadmium	MG/L	0.005	0.0016				
Chromium	MG/L	0.05	0.026	0.029	0.0016 J	0.0046	0.0031 J
Copper	MG/L	0.2		0.0025 J			
Iron	MG/L	0.3	0.45	0.16	22.3	4.5	4.2
Lead	MG/L	0.025			0.0042 J		
Magnesium	MG/L	35	38.6	16.3	45.2	18.6	18.0
Manganese	MG/L	0.3	0.089	0.043	1.3	0.47	0.45
Nickel	MG/L	0.1	0.017	0.0053 J		0.0024 J	0.0024 J
Sodium	MG/L	20	53.8	199	326	295	291
Zinc	MG/L	2	0.0067 J	0.0042 J		0.0016 J	0.0024 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 aromatics.

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 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2016

Location ID			GW-28S	GW-29S	GW-30S	GW-31S	GW-32S
Sample ID			GW-28S	GW-29S	GW-30S	GW-31S	GW-32S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/18/16	05/19/16	05/19/16	05/20/16	05/20/16
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					
Acetone	UG/L	50					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
Metals							
Arsenic	MG/L	0.025		0.019			
Barium	MG/L	1	0.077	0.21	0.11	0.074	0.061
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05				0.0014 J	
Copper	MG/L	0.2					
Iron	MG/L	0.3	0.35	11.3	6.3	0.84	0.019 J
Lead	MG/L	0.025		0.0035 J			
Magnesium	MG/L	35	26.7	84.4	31.5	26.2	34.5
Manganese	MG/L	0.3	0.87	0.60	0.78	0.80	0.40
Nickel	MG/L	0.1	0.0017 J			0.0034 J	0.0015 J
Sodium	MG/L	20	12.2	10.0	32.9	3.9	3.8
Zinc	MG/L	2	0.0020 J			0.0086 J	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 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 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2016

Location ID			GW-33S	GW-34S	GW-35S
Sample ID			GW-33S	GW-34S	GW-35S
Matrix			Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-
Date Sampled			05/20/16	05/19/16	05/20/16
Parameter	Units	*			
Volatile Organic Compounds					
1,2-Dichloroethene (total)	UG/L	5			
Acetone	UG/L	50			
Semivolatile Organic Compounds					
1,3-Dichlorobenzene	UG/L	3			
1,4-Dichlorobenzene	UG/L	3			
Metals					
Arsenic	MG/L	0.025			
Barium	MG/L	1	0.029	0.12	0.091
Cadmium	MG/L	0.005			
Chromium	MG/L	0.05		0.0018 J	
Copper	MG/L	0.2			
Iron	MG/L	0.3	0.031 J	0.36	0.060
Lead	MG/L	0.025		0.0035 J	
Magnesium	MG/L	35	30.8	60.4	23.9
Manganese	MG/L	0.3	0.13	0.73	0.26
Nickel	MG/L	0.1	0.0017 J	0.0068 J	0.0019 J
Sodium	MG/L	20	2.9	35.3	2.6
Zinc	MG/L	2	0.0048 J	0.0021 J	0.0038 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 aromatics.

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

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 3-2 (continued)

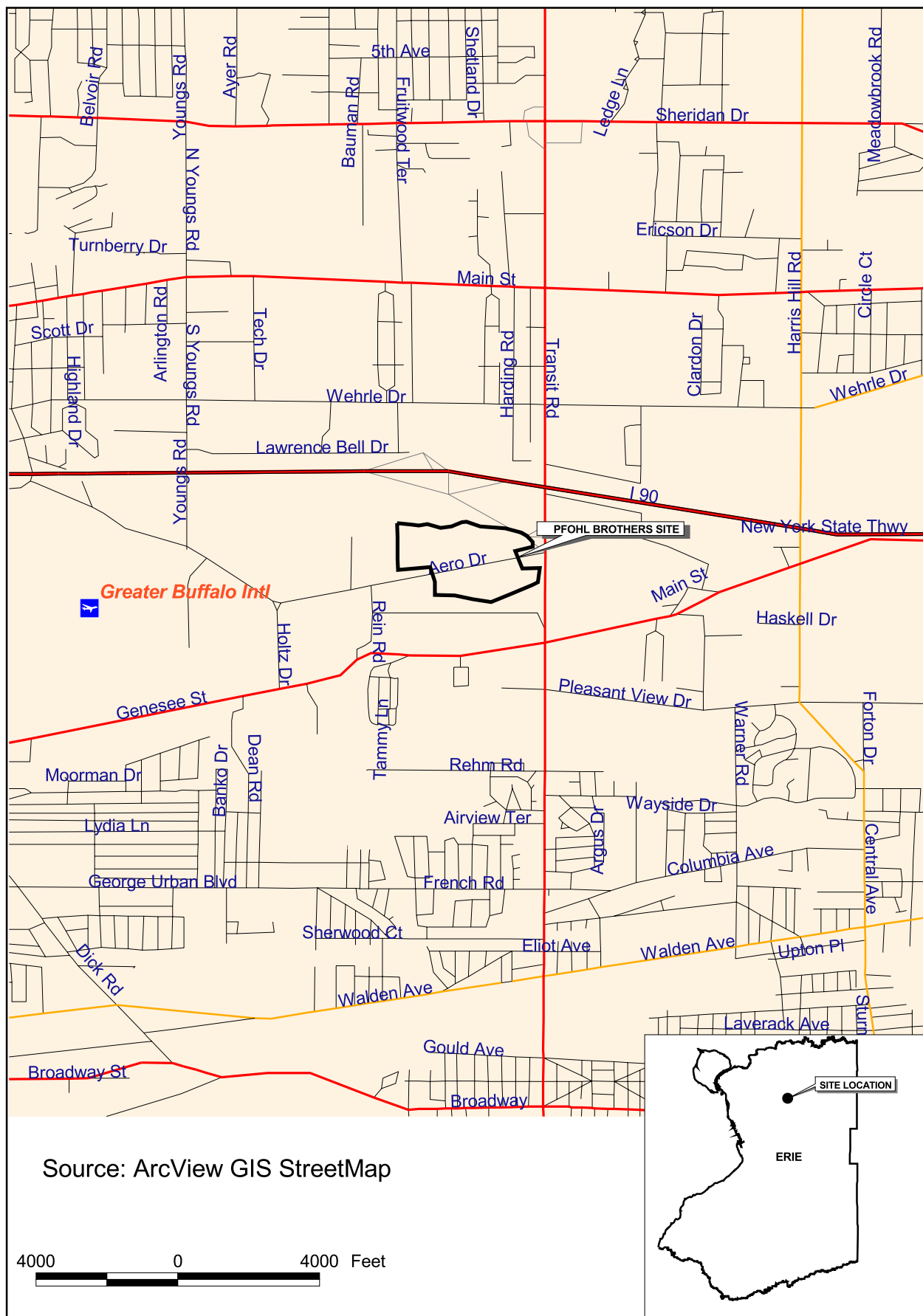
APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

**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

FIGURES





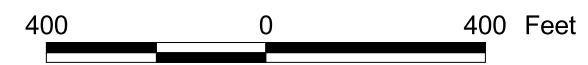
Legend

Monitoring Well Location

Staff Gauge Location

Manhole Location

Wet Well Location



PFOHL BROTHERS LANDFILL
MONITORING LOCATIONS

FIGURE 3-1

APPENDIX A

EXAMPLE DAILY INSPECTION SHEETS

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 1/15/16
Time 1244

Weather conditions Cldy
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>4604</u>	<u>2782</u>
WW-2	<u>4.7</u>	<u>0</u>	<u>0</u>	<u>161</u>
WW-1	<u>4.0</u>	<u>0</u>	<u>114572</u>	<u>4651</u>
WW-6	<u>6.9</u>	<u>166</u>	<u>2806972</u>	<u>13038</u>
WW-4	<u>7.0</u>	<u>0</u>	<u>44855</u>	<u>6891</u>
WW-5	<u>7.3</u>	<u>0</u>	<u>2752517</u>	<u>15608</u>

Flow Totalizer at Meter chamber

Heat Trace

Outside temp T = 50
Current A = 0

Set point SP = 40

Surge Suppressor events

416185

Motor Control Center

Volts 480 volts
Amps 5 amps

Which WW was running?

1 2 3 4 5 6 6

Filter

Checked ☒

Changed

Comments and/or Current Conditions

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 3/17/16
Time 1005

Weather conditions 49° Sunny.
Read by: RJM (URS)

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	<u>99.0 ALARM</u>	<u>0</u>	<u>4625</u>	<u>2782</u>
WW-2	<u>99.0</u>	<u>0</u>	<u>0</u>	<u>161</u>
WW-1	<u>99.0</u>	<u>0</u>	<u>557716</u>	<u>4817</u>
WW-6	<u>6.4</u>	<u>0</u>	<u>3624963</u>	<u>13250</u>
WW-4	<u>6.7</u>	<u>0</u>	<u>117333</u>	<u>6935</u>
WW-5	<u>6.5</u>	<u>0</u>	<u>3685620</u>	<u>15973</u>

Flow Totalizer at Meter chamber 0 / 7989310

Heat Trace

Outside temp T = 49
Current A = 0

Set point SP = 40

Surge Suppressor events 416 260

Motor Control Center

Volts 490 volts
Amps 2 amps

Which WW was running?
1 2 3 4 5 6 None

Filter Checked Changed

Comments and/or Current Conditions

WW-2 AND WW-1 Level ALARMS WOULD NOT RESET.

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 6/8/16
Time 1130

Weather conditions 57°F, cloudy
Read by: T. Jensen (URS)

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	<u>99.0 alarm</u>	<u>0</u>	<u>21721</u>	<u>2791</u>
WW-2	<u>4.7</u>	<u>0</u>	<u>-670</u>	<u>161</u>
WW-1	<u>4.1</u>	<u>0</u>	<u>683034</u>	<u>4873</u>
WW-6	<u>6.9</u>	<u>0</u>	<u>4609526</u>	<u>13500</u>
WW-4	<u>6.9</u>	<u>0</u>	<u>183501</u>	<u>6974</u>
WW-5	<u>6.9</u>	<u>0</u>	<u>4782345</u>	<u>16383</u>

Flow Totalizer at Meter chamber 10283177

Heat Trace

Outside temp T = 58°F
Current A = 0.0

Set point SP = 40

Surge Suppressor events 416374

Motor Control Center

Volts 480 volts
Amps 3 amps

Which WW was running?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ none

Filter ☐ Checked ☐ Changed

Comments and/or Current Conditions

Sample Quarterly Sampling for effluent

APPENDIX B

MONTHLY FLOW SUMMARIES
JANUARY 2016 – JUNE 2016

The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

February 4, 2016

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

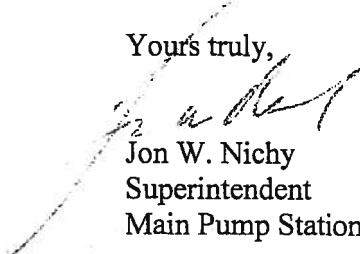
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the January 2016 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,


Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

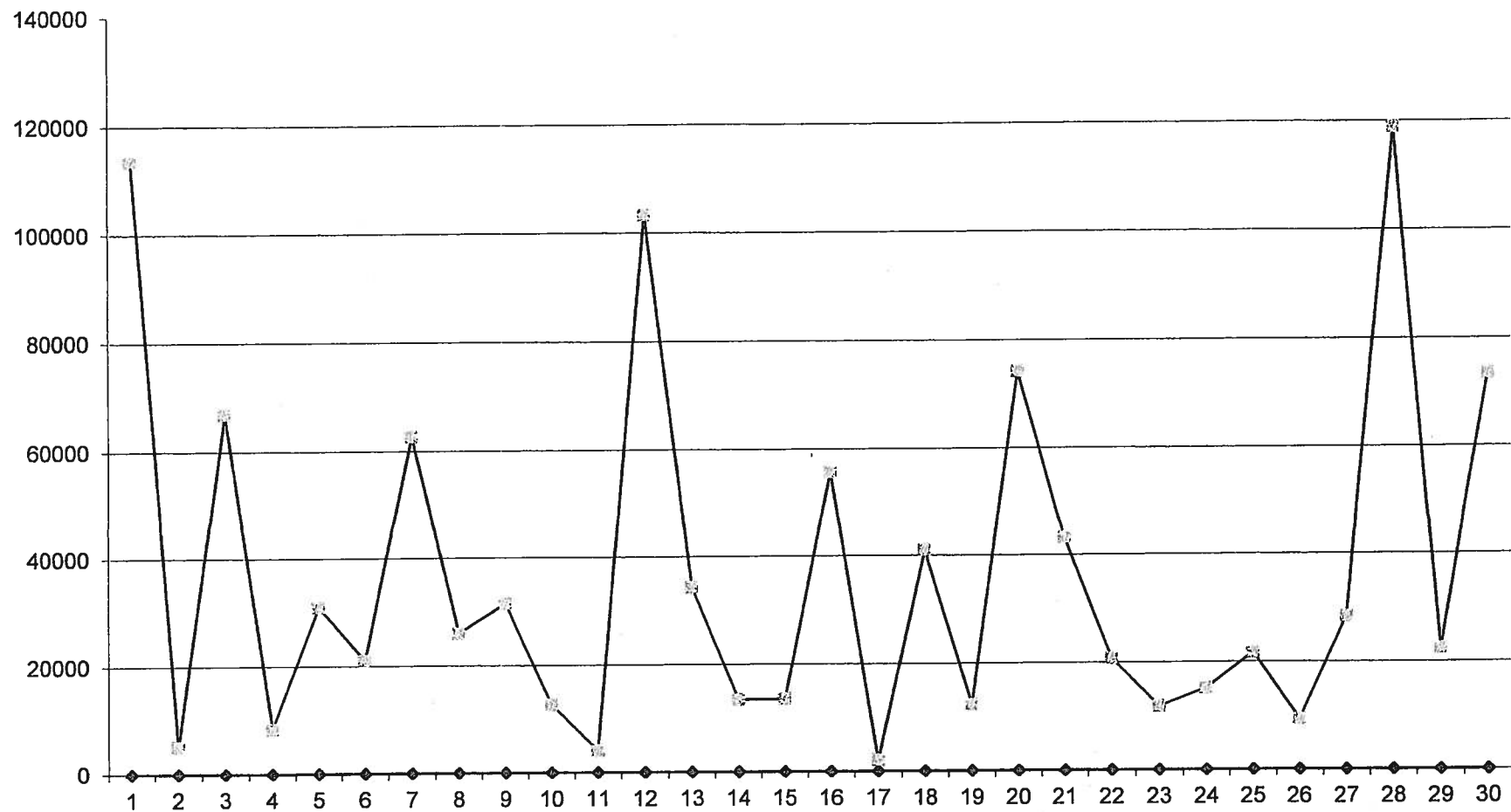
12/31/2015

5164841

74,755

Jan-16	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		5,278,556	113,714	
2		5,283,661	5,105	
3		5,350,584	66,923	
4		5,358,916	8,332	
5		5,389,918	31,002	
6		5,410,990	21,072	
7		5,473,731	62,741	
8		5,499,765	26,034	
9		5,531,319	31,554	
10		5,544,018	12,698	
11		5,548,120	4,102	09:55 inhibit 22:25 enable
12		5,651,439	103,319	
13		5,685,845	34,406	
14		5,699,291	13,445	
15		5,712,881	13,590	
16		5,768,584	55,703	
17		5,770,663	2,079	
18		5,811,697	41,034	
19		5,824,034	12,337	
20		5,898,300	74,266	
21		5,941,543	43,243	
22		5,962,364	20,821	
23		5,974,244	11,880	
24		5,989,433	15,188	
25		6,011,155	21,722	
26		6,020,575	9,420	
27		6,049,002	28,426	12:41 inhibit 19:29 enable
28		6,167,829	118,827	
29		6,190,306	22477	
30		6,263,824	73518	
31		6,305,283	41459	
		1,140,442	1,140,437	

January
2016



The
TOWN OF
CHEEKTOWAGA



Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

March 2, 2016

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

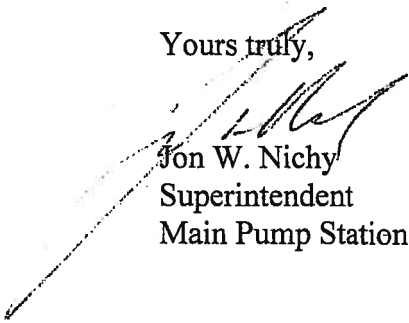
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the February 2016 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,


Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

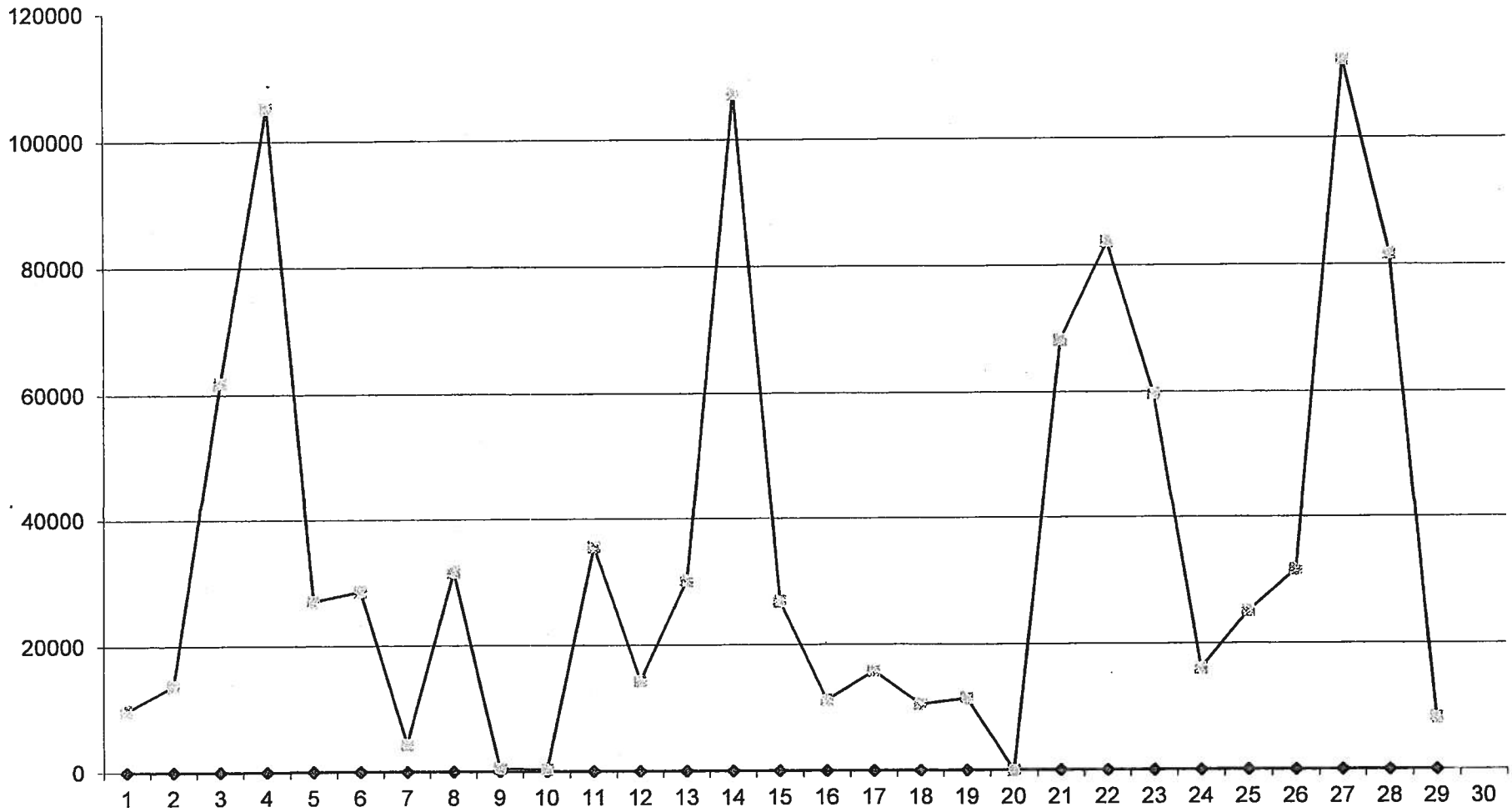
1/31/2016

6305283

41,459

Feb-16	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		6,315,043	9,760	
2		6,328,745	13,702	23:45 inhibit
3		6,390,533	61,788	14:15 enable
4		6,495,639	105,106	
5		6,522,675	27,036	
6		6,551,276	28,600	
7		6,555,663	4,387	
8		6,587,278	31,615	
9		6,587,740	462	
10		6,588,066	325	
11		6,623,592	35,526	
12		6,637,948	14,356	
13		6,668,139	30,191	
14		6,775,319	107,180	
15		6,802,156	26,837	
16		6,813,373	11,216	
17		6,829,201	15,828	
18		6,839,718	10,516	
19		6,851,158	11,440	
20		6,851,158	0	00:20 inhibit
21		6,919,402	68,244	11:19 enable
22		7,003,113	83,711	
23		7,062,859	59,746	
24		7,078,952	16,093	09:40 inhibit
25		7,104,042	25,090	14:28 enable
26		7,135,631	31,588	
27		7,247,877	112,246	
28		7,329,572	81,695	
29		7,337,747	8175	05:55 inhibit 20:24 enable
		1,032,464	1,032,459	

**February
2016**



The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

April 15, 2016

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

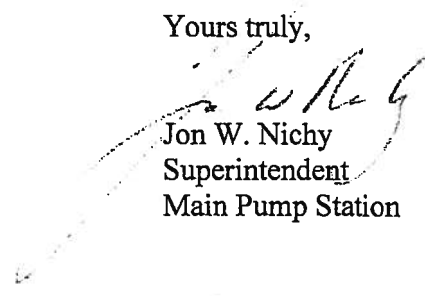
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the March 2016 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,


Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

2/29/2016

7337747

8,175

Mar-16	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		7,410,351	72,603	23:43 inhibit
2		7,410,351	0	
3		7,495,659	85,308	05:41 enable
4		7,496,547	888	
5		7,498,085	1,538	
6		7,540,191	42,106	
7		7,549,532	9,341	
8		7,564,238	14,705	
9		7,578,559	14,321	
10		7,588,349	9,790	06:56 inhibit
11		7,588,349	0	
12		7,588,349	0	
13		7,588,349	0	
14		7,626,178	37,829	17:31 enable
15		7,809,694	183,516	
16		7,970,702	161,007	
17		7,993,722	23,020	
18		8,002,712	8,990	
19		8,028,824	26,112	
20		8,042,509	13,685	
21		8,132,572	90,062	
22		8,160,562	27,990	
23		8,168,446	7,883	
24		8,168,446	0	06:49 inhibit
25		8,168,446	0	
26		8,168,446	0	
27		8,168,446	0	
28		8,168,446	0	
29		8,280,498	112052	08:13 enable
30		8,484,106	203608	
31		8,508,661	24555	
		1,170,914	1,170,909	

The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

May 4, 2016

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

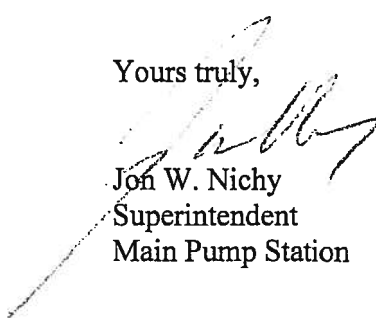
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the April 2016 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,


Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

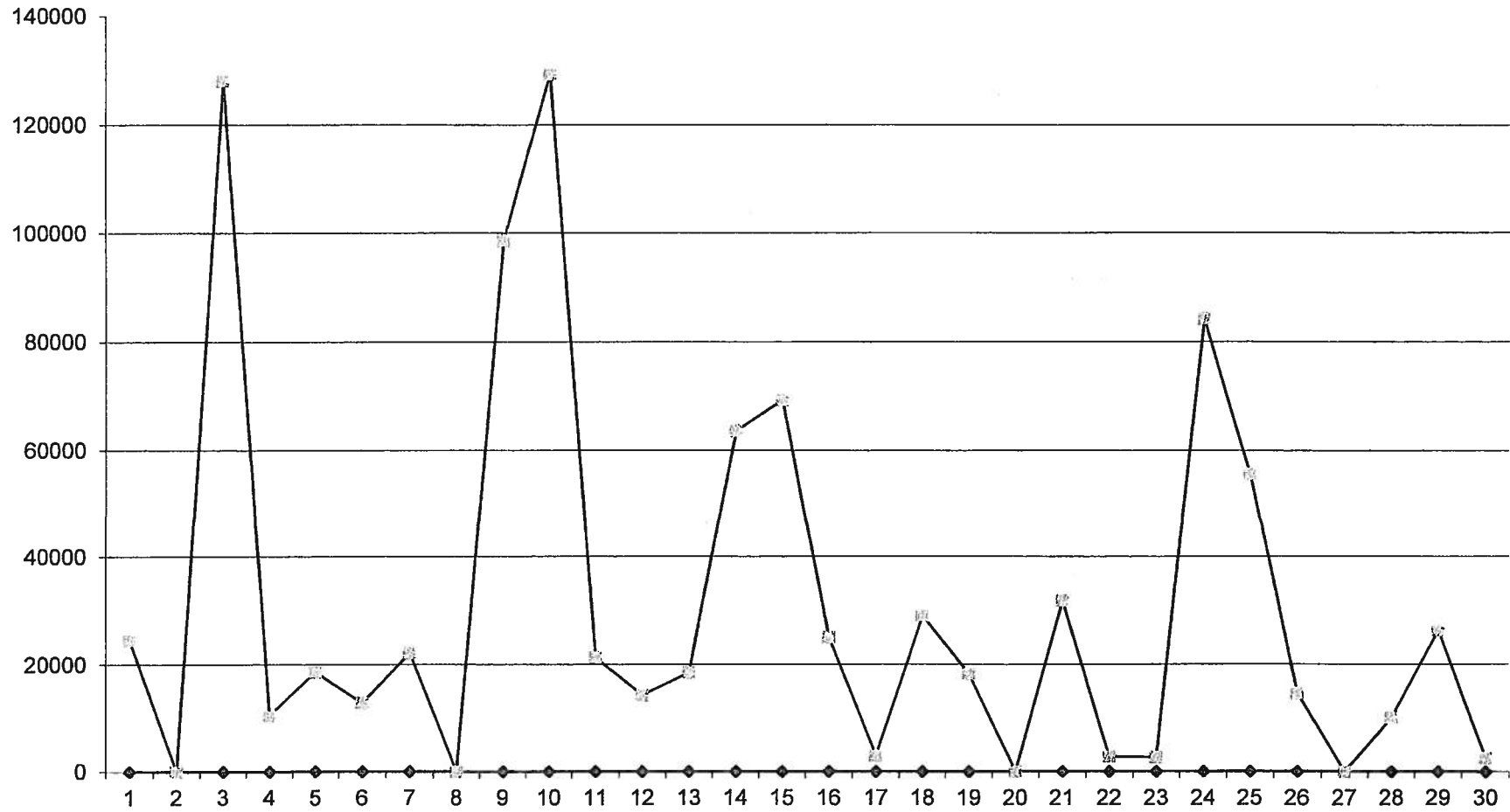
3/30/2016

8484106

203,608

Apr-16	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		8,508,661	24,555	22:35 enable
2		8,508,661	0	
3		8,636,734	128,073	
4		8,647,203	10,469	
5		8,665,812	18,609	
6		8,678,648	12,836	18:00 inhibit
7		8,700,821	22,173	
8		8,700,821	0	12:42 enable
9		8,799,430	98,609	
10		8,928,643	129,213	
11		8,949,857	21,214	02:52 inhibit 21:54 enable
12		8,964,135	14,278	
13		8,982,670	18,535	
14		9,046,207	63,537	
15		9,115,462	69,255	
16		9,140,458	24,996	
17		9,143,481	3,023	
18		9,172,509	29,028	
19		9,190,688	18,179	
20		9,190,688	0	
21		9,222,487	31,799	
22		9,225,271	2,784	
23		9,227,946	2,675	
24		9,312,175	84,229	
25		9,367,797	55,622	
26		9,382,444	14,647	
27		9,382,444	0	
28		9,392,546	10,102	
29		9,418,862	26316	
30		9,421,392	2530	
31				
		937,286	937,286	

April
2016



The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

Main Pump Station
171 Central Blvd.
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Phone: 716-896-1777
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June 7, 2016

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

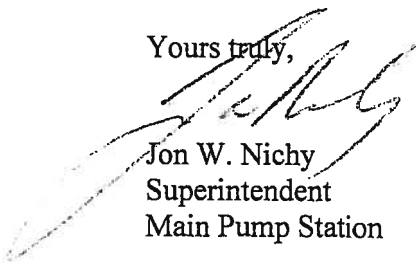
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the May 2016 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,



Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

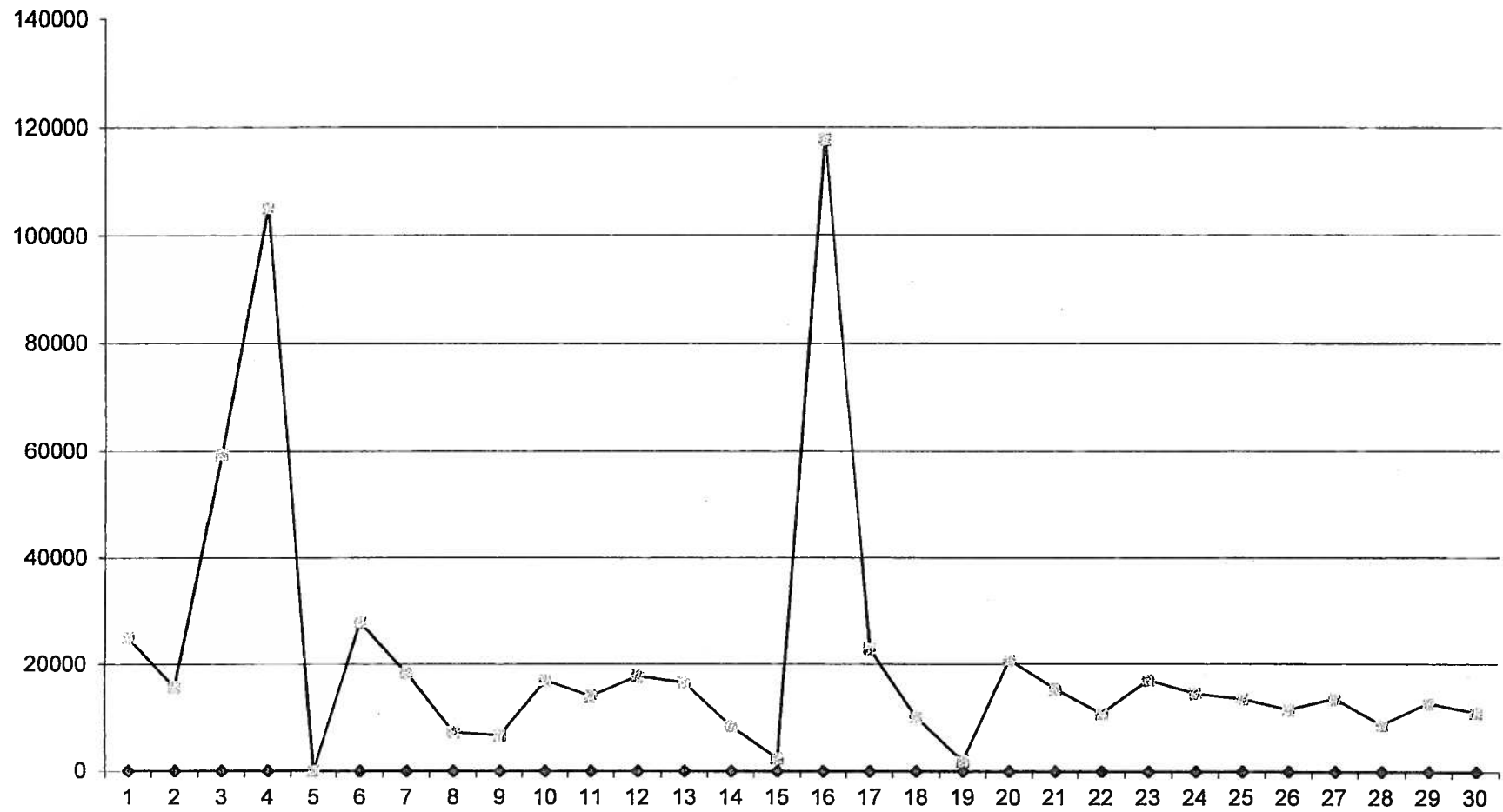
4/30/2016

9421392

2,530

May-16	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		9,446,424	25,032	
2		9,462,185	15,761	
3		9,521,614	59,429	
4		9,626,766	105,152	
5		9,626,766	0	
6		9,654,692	27,926	
7		9,673,033	18,341	
8		9,680,222	7,189	
9		9,686,822	6,600	
10		9,703,725	16,903	
11		9,717,670	13,945	
12		9,735,394	17,724	
13		9,751,823	16,429	03:21 inhibit 11:26 enable
14		9,760,140	8,317	
15		9,762,494	2,354	
16		9,880,226	117,732	
17		9,903,097	22,871	
18		9,913,168	10,071	
19		9,915,060	1,892	
20		9,935,805	20,745	
21		9,951,165	15,360	
22		9,961,971	10,806	
23		9,978,947	16,976	
24		9,993,449	14,502	
25		10,006,960	13,511	
26		10,018,463	11,503	
27		10,032,049	13,586	
28		10,040,736	8,687	
29		10,053,500	12764	
30		10,064,483	10983	
31		10,078,214	13731	
		656,822	656,822	

May
2016



The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

July 6, 2016

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

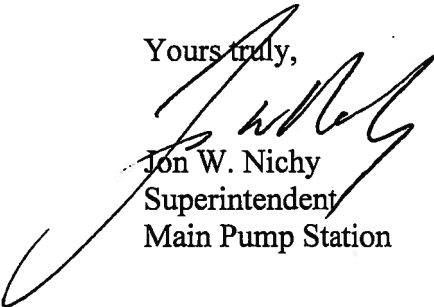
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the June 2016 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,


Jon W. Nichy
Superintendent
Main Pump Station

RECEIVED

JUL - 7 2016

ENGINEERING DEPT.

Direct Discharge Flow Data

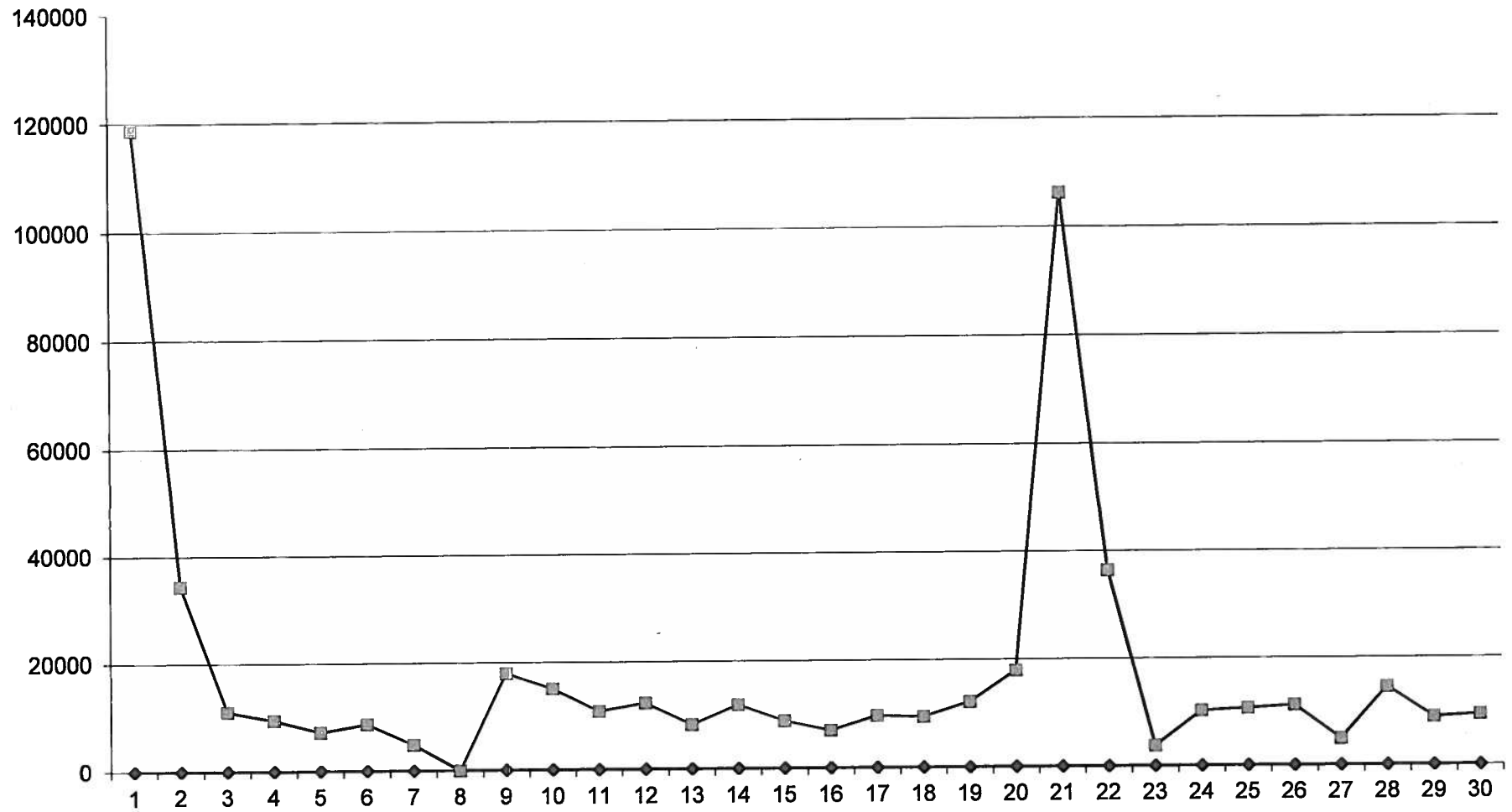
5/31/2016

10089081

10,867

Jun-16	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		10,207,725	118,644	
2		10,242,125	34,400	
3		10,253,135	11,010	
4		10,262,554	9,419	
5		10,269,720	7,166	
6		10,278,388	8,668	
7		10,283,177	4,789	
8		10,283,177	0	
9		10,301,171	17,994	
10		10,316,256	15,085	
11		10,327,108	10,852	
12		10,339,416	12,308	
13		10,347,653	8,237	
14		10,359,527	11,874	
15		10,368,343	8,816	
16		10,375,347	7,004	
17		10,384,978	9,631	
18		10,394,402	9,424	
19		10,406,535	12,133	
20		10,424,470	17,935	
21		10,530,681	106,211	
22		10,567,133	36,452	
23		10,570,925	3,792	
24		10,581,097	10,172	
25		10,591,712	10,615	
26		10,602,906	11,194	
27		10,607,838	4,932	02:35 inhibit 22:25 enable
28		10,622,362	14,524	
29		10,631,282	8920	
30		10,640,625	9343	
31				
		551,544	551,544	

June
2016



APPENDIX C

HYDRAULIC MONITORING TABLES

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2016

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								3/16/2016 1136	NM	-	NM	-	Lock corroded.
MNW								5/18/2016 1309	3.18	692.94	0.00	692.94	
MNW								6/7/2016 1248	3.85	692.27	0.00	692.27	
GW-01S	1073087.779	1117961.500	694.53	NM	696.19	S	1						
MNW								3/16/2016 1136	NM	-	NM	-	Lock corroded.
MNW								5/18/2016 1310	4.69	691.50	0.00	691.50	
MNW								6/7/2016 1247	5.70	690.49	0.00	690.49	
GW-03D	1073819.106	1114602.426	692.35	NM	693.88	D	1						
MNW								3/16/2016 1044	1.71	692.17	0.00	692.17	
MNW								5/18/2016 0803	2.18	691.70	0.00	691.70	
MNW								6/7/2016 1203	2.44	691.44	0.00	691.44	
GW-03S	1073812.622	1114605.762	692.61	NM	693.80	S	1						
MNW								3/16/2016 1044	1.90	691.90	0.00	691.90	
MNW								5/18/2016 0803	3.05	690.75	0.00	690.75	
MNW								6/7/2016 1204	4.94	688.86	0.00	688.86	
GW-04D	1072289.432	1114685.625	690.89	NM	692.75	D	1						
MNW								3/16/2016 1143	11.87	680.88	0.00	680.88	
MNW								5/18/2016 1043	12.78	679.97	0.00	679.97	
MNW								6/7/2016 1254	12.33	680.42	0.00	680.42	
GW-04S	1072284.456	1114685.127	690.76	NM	692.72	S	1						
MNW								3/16/2016 1143	4.42	688.30	0.00	688.30	
MNW								5/18/2016 1044	4.73	687.99	0.00	687.99	
MNW								6/7/2016 1253	5.62	687.10	0.00	687.10	

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 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2016

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								3/16/2016 1121	47.48	652.46	0.00	652.46	
MNW								5/18/2016 0908	48.00	651.94	0.00	651.94	
MNW								6/7/2016 1242	56.92	643.02	0.00	643.02	
GW-07S	1071238.157	1117666.265	697.47	NM	699.51	S	1						
MNW								3/16/2016 1126	4.13	695.38	0.00	695.38	
MNW								5/18/2016 0909	5.40	694.11	0.00	694.11	
MNW								6/7/2016 1243	6.38	693.13	0.00	693.13	
GW-08D	1073713.617	1116795.328	695.28	NM	697.79	D	1						
MNW								3/16/2016 1052	5.61	692.18	0.00	692.18	
MNW								5/18/2016 0817	6.17	691.62	0.00	691.62	
MNW								6/7/2016 1212	6.46	691.33	0.00	691.33	
GW-08SR	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								3/16/2016 1052	5.11	692.39	0.00	692.39	
MNW								5/18/2016 0816	5.28	692.22	0.00	692.22	
MNW								6/7/2016 1213	5.86	691.64	0.00	691.64	
GW-26D	1071698.573	1115997.470	696.01	NM	698.50	D	1						
MNW								3/16/2016 1112	6.50	692.00	0.00	692.00	
MNW								5/18/2016 0856	7.00	691.50	0.00	691.50	
MNW								6/7/2016 1235	7.29	691.21	0.00	691.21	
GW-28S	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								3/16/2016 1058	8.17	692.78	0.00	692.78	
MNW								5/18/2016 0827	9.82	691.13	0.00	691.13	
MNW								6/7/2016 1217	10.34	690.61	0.00	690.61	

NM - No Measurement

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Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2016

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								3/16/2016 1104	6.76	692.87	0.00	692.87	
MNW								5/18/2016 0836	9.22	690.41	0.00	690.41	
MNW								6/7/2016 1224	9.75	689.88	0.00	689.88	
GW-30S	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								3/16/2016 1106	7.70	688.88	0.00	688.88	
MNW								5/18/2016 0841	7.96	688.62	0.00	688.62	
MNW								6/7/2016 1227	8.16	688.42	0.00	688.42	
GW-31S	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								3/16/2016 1108	2.45	696.17	0.00	696.17	
MNW								5/18/2016 0850	4.22	694.40	0.00	694.40	
MNW								6/7/2016 1229	6.28	692.34	0.00	692.34	
GW-32S	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								3/16/2016 1110	2.19	696.18	0.00	696.18	
MNW								5/18/2016 0853	4.21	694.16	0.00	694.16	
MNW								6/7/2016 1231	5.66	692.71	0.00	692.71	
GW-33S	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								3/16/2016 1114	3.22	695.02	0.00	695.02	
MNW								5/18/2016 0901	5.49	692.75	0.00	692.75	
MNW								6/7/2016 1237	7.45	690.79	0.00	690.79	
GW-34S	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								3/16/2016 1038	2.57	692.20	0.00	692.20	
MNW								5/18/2016 0755	3.15	691.62	0.00	691.62	
MNW								6/7/2016 1158	4.78	689.99	0.00	689.99	

NM - No Measurement

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Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2016

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								3/16/2016 1112	2.84	694.55	0.00	694.55	
MNW								5/18/2016 0858	4.19	693.20	0.00	693.20	
MNW								6/7/2016 1234	5.38	692.01	0.00	692.01	
MH-01	1073806.665	1114810.501	698.62	NM	698.62	NA	1						
MH								3/16/2016 1039	10.42	688.20	0.00	688.20	
MH								5/18/2016 0758	10.61	688.01	0.00	688.01	
MH								6/7/2016 1200	10.30	688.32	0.00	688.32	
MH-03	1073736.789	1115259.334	699.40	NM	699.40	NA	1						
MH								3/16/2016 1046	11.60	687.80	0.00	687.80	
MH								5/18/2016 0810	11.24	688.16	0.00	688.16	
MH								6/7/2016 1206	11.18	688.22	0.00	688.22	
MH-07	1073838.229	1116243.757	696.82	NM	696.82	NA	1						
MH								3/16/2016 1049	9.83	686.99	0.00	686.99	
MH								5/18/2016 0813	9.45	687.37	0.00	687.37	
MH								6/7/2016 1209	9.40	687.42	0.00	687.42	
MH-10	1073540.729	1117381.524	703.01	NM	703.01	NA	1						
MH								3/16/2016 1052	14.42	688.59	0.00	688.59	
MH								5/18/2016 0821	14.47	688.54	0.00	688.54	
MH								6/7/2016 1215	14.49	688.52	0.00	688.52	
MH-15	1072531.567	1117761.125	699.02	NM	699.02	NA	1						
MH								3/16/2016 1104	13.25	685.77	0.00	685.77	
MH								5/18/2016 0835	13.78	685.24	0.00	685.24	
MH								6/7/2016 1223	14.03	684.99	0.00	684.99	

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 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2016

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								3/16/2016 1105	15.46	683.11	0.00	683.11	
MH								5/18/2016 0839	14.50	684.07	0.00	684.07	
MH								6/7/2016 1226	14.53	684.04	0.00	684.04	
MH-17	1071813.137	1117180.019	702.16	NM	702.16	NA	1						
MH								3/16/2016 1108	18.47	683.69	0.00	683.69	
MH								5/18/2016 0848	18.10	684.06	0.00	684.06	
MH								6/7/2016 1228	18.13	684.03	0.00	684.03	
MH-20	1071756.395	1115997.024	706.20	NM	706.20	NA	1						
MH								3/16/2016 1110	19.75	686.45	0.00	686.45	
MH								5/18/2016 0855	19.77	686.43	0.00	686.43	
MH								6/7/2016 1233	19.75	686.45	0.00	686.45	
MH-22	1072158.023	1115589.309	698.05	NM	698.05	NA	1						
MH								3/16/2016 1113	9.01	689.04	0.00	689.04	
MH								5/18/2016 0900	8.98	689.07	0.00	689.07	
MH								6/7/2016 1236	9.01	689.04	0.00	689.04	
MH-25	1072483.928	1114820.313	698.17	NM	698.17	NA	1						
MH								3/16/2016 1032	9.69	688.48	0.00	688.48	
MH								5/18/2016 0756	10.21	687.96	0.00	687.96	
MH								6/7/2016 1154	9.91	688.26	0.00	688.26	
SG-01	1073882.887	1114813.101	NM	NM	690.00	NA	1						
SG								3/16/2016 1040	-0.76	690.76	0.00	690.76	
SG								5/18/2016 0759	-0.76	690.76	0.00	690.76	
SG								6/7/2016 1201	NM	-	NM	-	Dry

NM - No Measurement

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Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2016

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								3/16/2016 1052	-3.25	693.25	0.00	693.25	
SG								5/18/2016 0817	-3.24	693.24	0.00	693.24	
SG								6/7/2016 1213	NM	-	NM	-	Dry
WW-01	1073676.903	1115710.476	NM	NM	684.02	NA	1						
MH								3/16/2016 1010	-3.6	687.62	0.00	687.62	
MH								5/18/2016 0700	-3.9	687.92	0.00	687.92	
MH								6/7/2016 1125	-4.0	688.02	0.00	688.02	
WW-02	1073684.724	1116792.311	NM	NM	684.18	NA	1						
MH								3/16/2016 1010	-4.7	688.88	0.00	688.88	
MH								5/18/2016 0700	-4.7	688.88	0.00	688.88	
MH								6/7/2016 1125	-4.7	688.88	0.00	688.88	
WW-03	1073140.339	1117618.499	NM	NM	683.80	NA	1						
MH								3/16/2016 1057	-4.93	688.73	0.00	688.73	
MH								5/18/2016 0824	-4.65	688.45	0.00	688.45	
MH								6/7/2016 1217	-4.36	688.16	0.00	688.16	
WW-04	1072057.563	1117610.508	NM	NM	676.62	NA	1						
MH								3/16/2016 1010	-5.8	682.42	0.00	682.42	
MH								5/18/2016 0700	-6.9	683.52	0.00	683.52	
MH								6/7/2016 1125	-6.9	683.52	0.00	683.52	
WW-05	1071661.368	1116370.876	NM	NM	676.14	NA	1						
MH								3/16/2016 1010	-6.2	682.34	0.00	682.34	
MH								5/18/2016 0700	-6.8	682.94	0.00	682.94	
MH								6/7/2016 1125	-6.6	682.74	0.00	682.74	

NM - No Measurement

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Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2016

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								3/16/2016 1010	-6.9	688.79	0.00	688.79	
MH								5/18/2016 0700	-6.6	688.49	0.00	688.49	
MH								6/7/2016 1125	-6.8	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 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)
3/16/2016	687.62	---	---	688.88	692.39	3.51	693.25	4.37
5/18/2016	687.92	---	---	688.88	692.22	3.34	693.24	4.36
6/7/2016	688.02	---	---	688.88	691.64	2.76	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)
3/16/2016	688.73	692.78	4.05	682.42	---	---
5/18/2016	688.45	691.13	2.68	683.52	---	---
6/7/2016	688.16	690.61	2.45	683.52	---	---

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)
3/16/2016	682.34	696.18	13.84	688.79	692.20	3.41
5/18/2016	682.94	694.16	11.22	688.49	691.62	3.13
6/7/2016	682.74	692.71	9.97	688.69	689.99	1.30

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)
3/16/2016	688.20	690.76	2.56	685.77	692.87	7.10
5/18/2016	688.01	690.76	2.75	685.24	690.41	5.17
6/7/2016	688.32	DRY	NA	684.99	689.88	4.89

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)
3/16/2016	683.11	688.88	5.77	683.69	686.17	2.48
5/18/2016	684.07	688.62	4.55	684.06	694.40	10.34
6/7/2016	684.04	688.42	4.38	684.03	692.34	8.31

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)
3/16/2016	686.45	694.55	8.10	689.04	695.02	5.98
5/18/2016	686.43	693.20	6.77	689.07	692.75	3.68
6/7/2016	686.45	692.01	5.56	689.04	690.79	1.75

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-1S

Date: 5/18/2016 Sampling Personnel: Kevin McGovern, Tom Urban Company: URS Corporation

Purging/ Sampling				Pump/Tubing Inlet	
Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Location:	Screen midpoint

Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.69'	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):	6.3	Estimated Purge Volume (liters):	11.3
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Sample ID: GW-1S Sample Time: 14:04 QA/QC: None

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. Orange stain in water initially.

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-1D

Date: 5/18/2016 Sampling Personnel: Kevin McGovern, Tom Urban 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:	3.18'	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):	90.1	Estimated Purge Volume (liters):	52.1
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Sample ID:	GW-1D	Sample Time:	15:09	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-3S

Date: 5/19/2016 Sampling Personnel: Kevin McGovern, Tom Urban 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:	3.20'	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):	7.0
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Sample ID:	GW-3S	Sample Time:	9:52	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-3D

Date: 5/19/2016 Sampling Personnel: Kevin McGovern, Tom Urban 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:	2.22'	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):	82.7	Estimated Purge Volume (liters):	57.0
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Sample ID:	GW-3D	Sample Time:	11:05	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-4S

Date: 5/18/2016 Sampling Personnel: Kevin McGovern, Tom Urban 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:	4.72'	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):	7.1	Estimated Purge Volume (liters):	11.4
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Sample ID:	GW-4S	Sample Time:	10:50 (VOCs) & 12:40 (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 3/16/16, sampled VOCs from PDB at 10:50 on 5/18/16.

Well historically goes dry at very low purge rates (<75ml/min). Bailed dry and sampled for SVOCs and Metals after recovery at 12:40.

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)
10:55	8.61	11.34	0.445	1.81	9.2	36	Initial	4.73
11:00	8.46	10.47	0.443	3.29	318	43	1 Gallon	-
11:03	8.17	9.96	0.449	2.05	719	-29	2 Gallon	-
11:05	8.04	9.75	0.439	3.00	>1000	-20	3 Gallon	DRY
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-4D

Date: 5/18/2016 Sampling Personnel: Kevin McGovern, Tom Urban 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:	12.78'	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):	81.0	Estimated Purge Volume (liters):	14.0
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Sample ID:	GW-4D	Sample Time:	12:26	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 ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

WELL PURGING LOG

URS Corporation

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-7S
PROJECT NO.:	60411174		
STAFF:	Kevin McGovern, Tom Urban		
DATE(S):	5/18/16, 5/19/16		

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	35.04	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	5.40	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	29.64	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	5.04	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	7.0	8"	2.60

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

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Initial	2	5							
pH	7.95	8.00	8.02							
SPEC. COND. (mS/cm)	0.543	0.544	0.547							
DO (mg/l)	0.00	0.50	0.91							
TEMPERATURE (°C)	10.88	11.01	11.12							
TURBIDITY (NTU)	2.3	10.0	60.5							
ORP (millivolts)	-86	-55	-27							
TIME	10:18	10:22	10:26							

COMMENTS: 10:10 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 3/16/16
 10:18 - Begin hand bailing well.
 10:26- Well dry after removing 5 gallons.
 5/19/2016 7:30 - Return to well, depth to water = 5.57 feet.
 7:35 - Collect sample for SVOCs and Metals.

WELL PURGING LOG

URS Corporation

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-7D
PROJECT NO.:	60411174		
STAFF:	Kevin McGovern, Tom Urban		
DATE(S):	5/18/16, 5/19/16		

		WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	60.45	1" 0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	48.00	2" 0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	12.45	3" 0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.66	4" 0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	8.22	5" 1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=		6" 1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	9.0	8" 2.60

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

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Init	3	6	9						
pH	6.52	7.25	7.35	7.41						
SPEC. COND. (mS/cm)	0.674	0.658	0.711	0.736						
DO (mg/l)	19.12	1.93	2.85	2.77						
TEMPERATURE (°C)	12.18	12.09	12.15	12.25						
TURBIDITY (NTU)	3.1	10.5	20.6	41.2						
ORP (millivolts)	64	-103	-148	-165						
TIME	9:28	9:41	9:52	10:04						

COMMENTS:

09:15 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 9/15/15

09:28 - Begin hand bailing well.

10:04 - Well dry after removing 9.8 gallons

5/19/2016 07:28 - return to well, depth to water = 58.15 feet.

07:30 - Collect sample for SVOCs and Metals.

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-8SR

Date: 5/19/2016 Sampling Personnel: Kevin McGovern, Tom Urban 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:	5.28'	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):	4.8	Estimated Purge Volume (liters):	5.1
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Sample ID:	GW-8SR	Sample Time:	13:25	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-8D

Date: 5/19/2016 Sampling Personnel: Kevin McGovern, Tom Urban 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:	6.18'	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):	75.0	Estimated Purge Volume (liters):	57.0
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Sample ID:	GW-8D	Sample Time:	12:40	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)
11:40	7.01	11.19	1.40	0.55	55.9	78	950	6.18
11:45	6.96	10.44	1.42	0.00	0.0	83	950	6.18
11:50	6.95	10.44	1.42	0.00	0.0	88	950	6.18
11:55	6.93	10.43	1.43	0.00	0.0	92	950	6.18
12:00	6.92	10.43	1.43	0.00	0.0	96	950	6.18
12:05	6.91	10.45	1.43	0.00	0.0	99	950	6.18
12:10	6.91	10.41	1.43	0.00	0.0	102	950	6.18
12:15	6.91	10.42	1.43	0.00	0.0	104	950	6.18
12:20	6.91	10.45	1.43	0.00	0.0	105	950	6.18
12:25	6.91	10.47	1.43	0.00	0.0	106	950	6.18
12:30	6.91	10.48	1.43	0.00	0.0	107	950	6.18
12:35	6.91	10.50	1.43	0.00	0.0	108	950	6.18
12:40	6.91	10.50	1.43	0.00	0.0	108	950	6.18
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-26D

Date: 5/20/2016 Sampling Personnel: Kevin McGovern, Tom Urban 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:	7.05'	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):	83.1	Estimated Purge Volume (liters):	57.0
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Sample ID:	GW-26D	Sample Time:	10:40	QA/QC:	Duplicate (FD-052016)
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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)
9:40	6.92	12.40	1.95	1.97	8.8	-57	950	7.05
9:45	6.92	11.88	1.98	0.00	1.6	-63	950	7.05
9:50	6.92	11.93	1.98	0.00	5.4	-65	950	7.05
9:55	6.92	11.97	1.98	0.00	7.9	-67	950	7.05
10:00	6.91	12.00	1.97	0.00	2.7	-68	950	7.05
10:05	6.91	12.05	1.97	0.00	1.2	-68	950	7.05
10:10	6.91	12.05	1.97	0.00	2.1	-68	950	7.05
10:15	6.91	12.05	1.97	0.00	2.9	-69	950	7.05
10:20	6.91	12.09	1.97	0.00	5.9	-69	950	7.05
10:25	6.91	12.10	1.97	0.00	5.1	-69	950	7.05
10:30	6.91	12.17	1.97	0.00	4.7	-69	950	7.05
10:35	6.90	12.18	1.96	0.00	4.4	-69	950	7.05
10:40	6.90	12.22	1.96	0.00	4.8	-69	950	7.05
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-28S

Date: 5/18/2016 Sampling Personnel: Kevin McGovern, Tom Urban 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:	9.82'	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):	3.5	Estimated Purge Volume (liters):	4.8
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Sample ID:	GW-28S	Sample Time:	16:06	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. O₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:36	7.13	15.59	0.443	0.00	10.9	-9	200	9.82
15:41	6.80	12.48	0.447	0.00	4.1	-10	150	10.62
15:46	6.67	11.86	0.476	0.00	1.5	-8	150	10.82
15:51	6.64	11.46	0.469	7.27	3.6	-4	150	10.98
15:56	6.64	10.37	0.483	0.00	5.3	-1	150	11.09
16:01	6.63	10.28	0.487	0.00	1.8	4	150	11.11
16:06	6.63	10.14	0.493	0.00	2.8	5	150	11.12
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-29S

Date: 5/19/2016 Sampling Personnel: Kevin McGovern, Tom Urban 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:	9.25'	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):	6.7	Estimated Purge Volume (liters):	5.8
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Sample ID:	GW-29S	Sample Time:	14:35	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

Orange iron 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: 5/19/2016 Sampling Personnel: Kevin McGovern, Tom Urban 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:	7.95'	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):	6.2	Estimated Purge Volume (liters):	15.0
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Sample ID:	GW-30S	Sample Time:	15:25	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. O₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
14:55	6.80	17.41	3.06	1.92	219	-81	500	7.95
15:00	6.90	13.58	0.650	0.00	72.5	-75	500	8.05
15:05	6.77	11.70	0.690	0.00	52.6	-75	500	8.05
15:10	6.74	10.45	0.725	0.00	40.8	-77	500	8.05
15:15	6.73	10.34	0.732	0.00	29.8	-79	500	8.05
15:20	6.72	10.28	0.735	0.00	20.0	-81	500	8.05
15:25	6.79	10.32	0.737	0.00	12.5	-81	500	8.05
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-31S

Date: 5/20/2016 Sampling Personnel: Kevin McGovern, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
---------------------------------	-----------	--------------	---------------	-----------------------------------	-----------------

Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.55'	Depth to Well Bottom:	9.57'	Well Diameter:	2"	Screen Length:
------------------	--------------------	-------------------------	-------	-----------------------	-------	----------------	----	----------------

Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	3.1	Estimated Purge Volume (liters):	4.6
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Sample ID:	GW-31S	Sample Time:	7:55	QA/QC:	None
------------	--------	--------------	------	--------	------

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: 5/20/2016 Sampling Personnel: Kevin McGovern, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
---------------------------------	-----------	--------------	---------------	-----------------------------------	-----------------

Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.47'	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):	3.4	Estimated Purge Volume (liters):	8.4
--------------	-----------------	-----------------------------------	-----	----------------------------------	-----

Sample ID:	GW-32S	Sample Time:	8:45	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: 5/20/2016 Sampling Personnel: Kevin McGovern, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
---------------------------------	-----------	--------------	---------------	-----------------------------------	-----------------

Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.72'	Depth to Well Bottom:	8.21'	Well Diameter:	2"	Screen Length:
------------------	--------------------	-------------------------	-------	-----------------------	-------	----------------	----	----------------

Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	1.5	Estimated Purge Volume (liters):	4.3
--------------	-----------------	-----------------------------------	-----	----------------------------------	-----

Sample ID:	GW-33S	Sample Time:	11:30	QA/QC:	None
------------	--------	--------------	-------	--------	------

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-34S

Date: 5/19/2016 Sampling Personnel: Kevin McGovern, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
---------------------------------	-----------	--------------	---------------	-----------------------------------	-----------------

Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.21'	Depth to Well Bottom:	10.01'	Well Diameter:	2"	Screen Length:
------------------	--------------------	-------------------------	-------	-----------------------	--------	----------------	----	----------------

Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.2	Estimated Purge Volume (liters):	4.8
--------------	-----------------	-----------------------------------	-----	----------------------------------	-----

Sample ID:	GW-34S	Sample Time:	8:45	QA/QC:	None
------------	--------	--------------	------	--------	------

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: 5/20/2016 Sampling Personnel: Kevin McGovern, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
---------------------------------	-----------	--------------	---------------	-----------------------------------	-----------------

Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.35'	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):	1.9	Estimated Purge Volume (liters):	7.8
--------------	-----------------	-----------------------------------	-----	----------------------------------	-----

Sample ID:	GW-35S	Sample Time:	9:31	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: K. McGovern, T. Urban Supervisor: J. Sundquist

Date of Sampling: May 18, 2016

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-7D	GW-07D	31.1	PDB	9:15	Groundwater	VOCs	Not Applicable
GW-7S	GW-07S	19.1	PDB	10:10	Groundwater	VOCs	Not Applicable
GW-4S	GW-04S	7.1	11.4	10:50 & 12:40	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-4D	GW-04D	81.0	14.0	12:26	Groundwater		Not Applicable
GW-1S	GW-01S	6.3	11.3	14:04	Groundwater		Not Applicable
GW-1D	GW-01D	90.1	52.1	15:09	Groundwater		Not Applicable
GW-28S	GW-28S	3.5	4.8	16:06	Groundwater		Not Applicable

Additional Comments: GW-4S, GW-7D, and GW-7S were sampled for VOCs using passive diffusion bags (PDBs). GW-4S, GW-7D, and GW-7S were then purged dry, and remaining parameters were collected after recovery.
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: K. McGovern, T. Urban Supervisor: J. Sundquist

Date of Sampling: May 19, 2016

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-7D	GW-07D	31.1	34.1	7:30	Groundwater	SVOCs/Metals	Not Applicable
GW-7S	GW-07S	19.1	26.5	7:35	Groundwater		Not Applicable
GW-34S	GW-34S	4.2	4.8	8:45	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-3S	GW-03S	6.2	7.0	9:52	Groundwater		Not Applicable
GW-3D	GW-03D	82.7	57.0	11:05	Groundwater		Not Applicable
GW-3D-MS	GW-03D	82.7	57.0	11:05	Groundwater		Not Applicable
GW-3D-MSD	GW-03D	82.7	57.0	11:05	Groundwater		Not Applicable

Additional Comments: GW-7D and GW-7S 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: K. McGovern, T. Urban Supervisor: J. Sundquist

Date of Sampling: May 19, 2016

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-8D	GW-08D	75.0	57.0	12:40	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-8SR	GW-08SR	4.8	5.1	13:25	Groundwater		Not Applicable
GW-29S	GW-29S	6.7	5.8	14:35	Groundwater		Not Applicable
GW-30S	GW-30S	6.2	15.0	15:25	Groundwater		Not Applicable
TRIP BLANK	---	---	---	---	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: K. McGovern, T. Urban Supervisor: J. Sundquist

Date of Sampling: May 20, 2016

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-31S	GW-31S	3.1	4.6	7:55	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-32S	GW-32S	3.4	8.4	8:45	Groundwater		Not Applicable
GW-35S	GW-35S	1.9	7.8	9:31	Groundwater		Not Applicable
GW-26D	GW-26D	83.1	57.0	10:40	Groundwater		Not Applicable
FD-052016	GW-26D	83.1	57.0	---	Groundwater		Not Applicable
GW-33S	GW-33S	1.5	4.3	11:30	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-1D

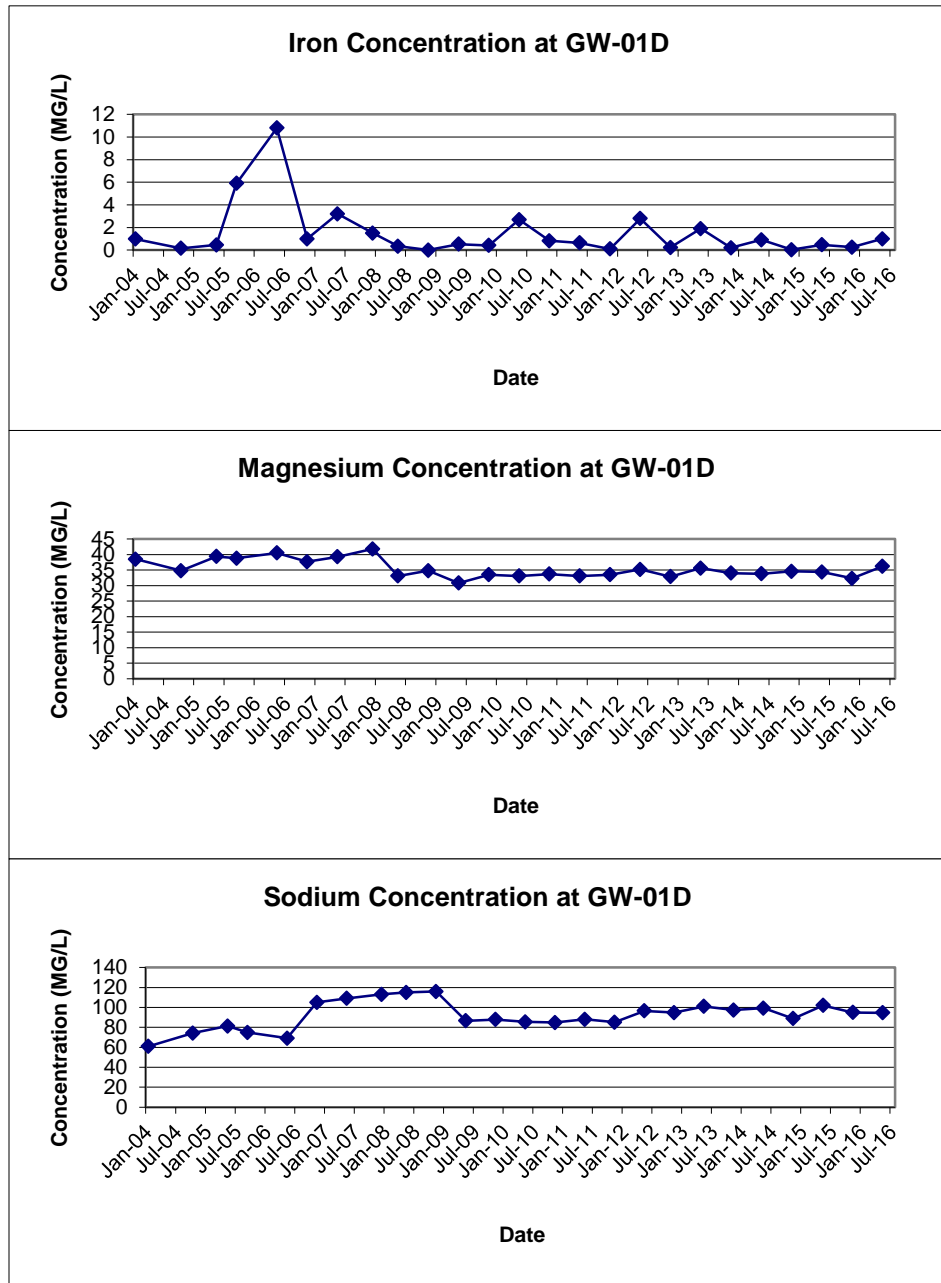


FIGURE E-2
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-1S

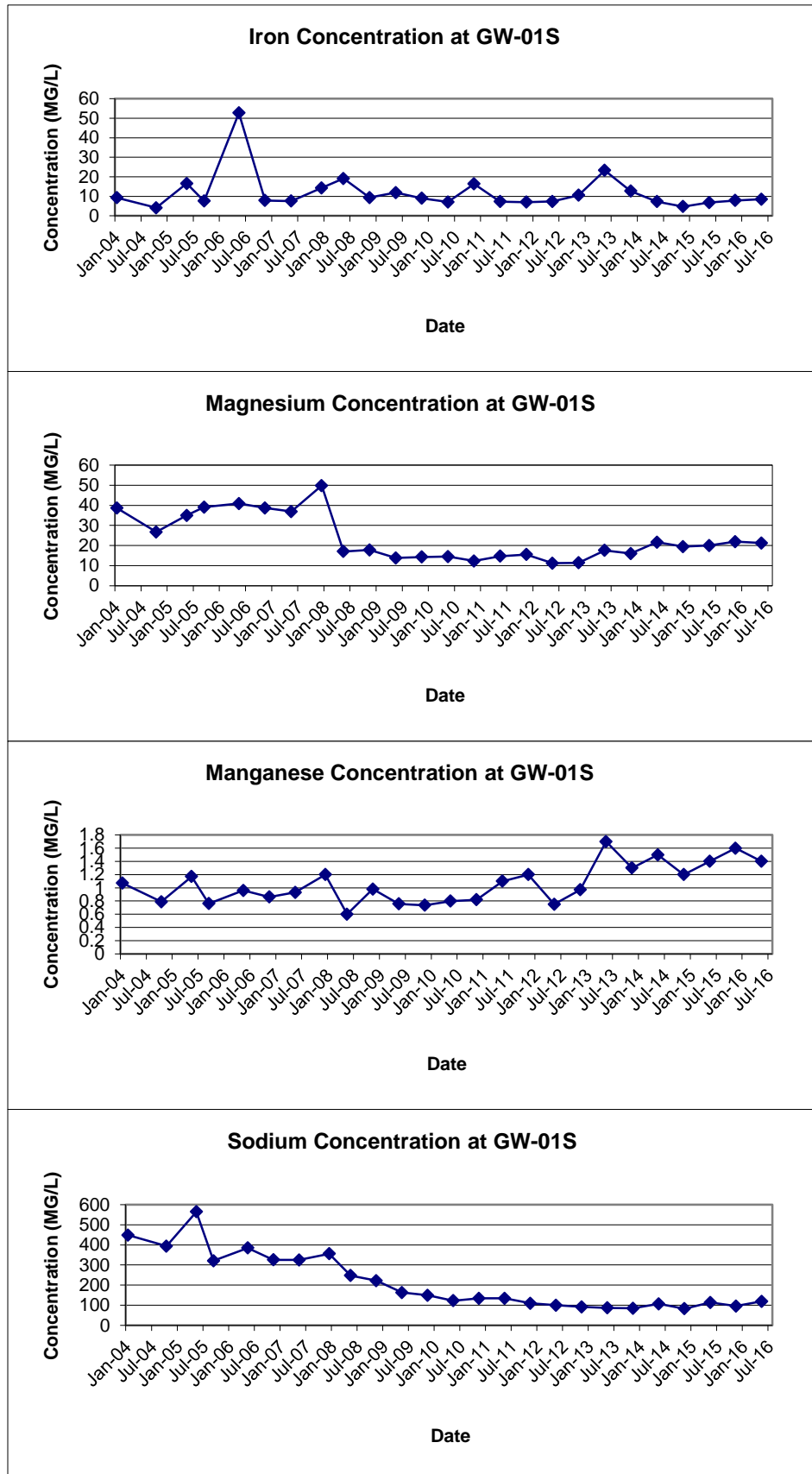


FIGURE E-3
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3D

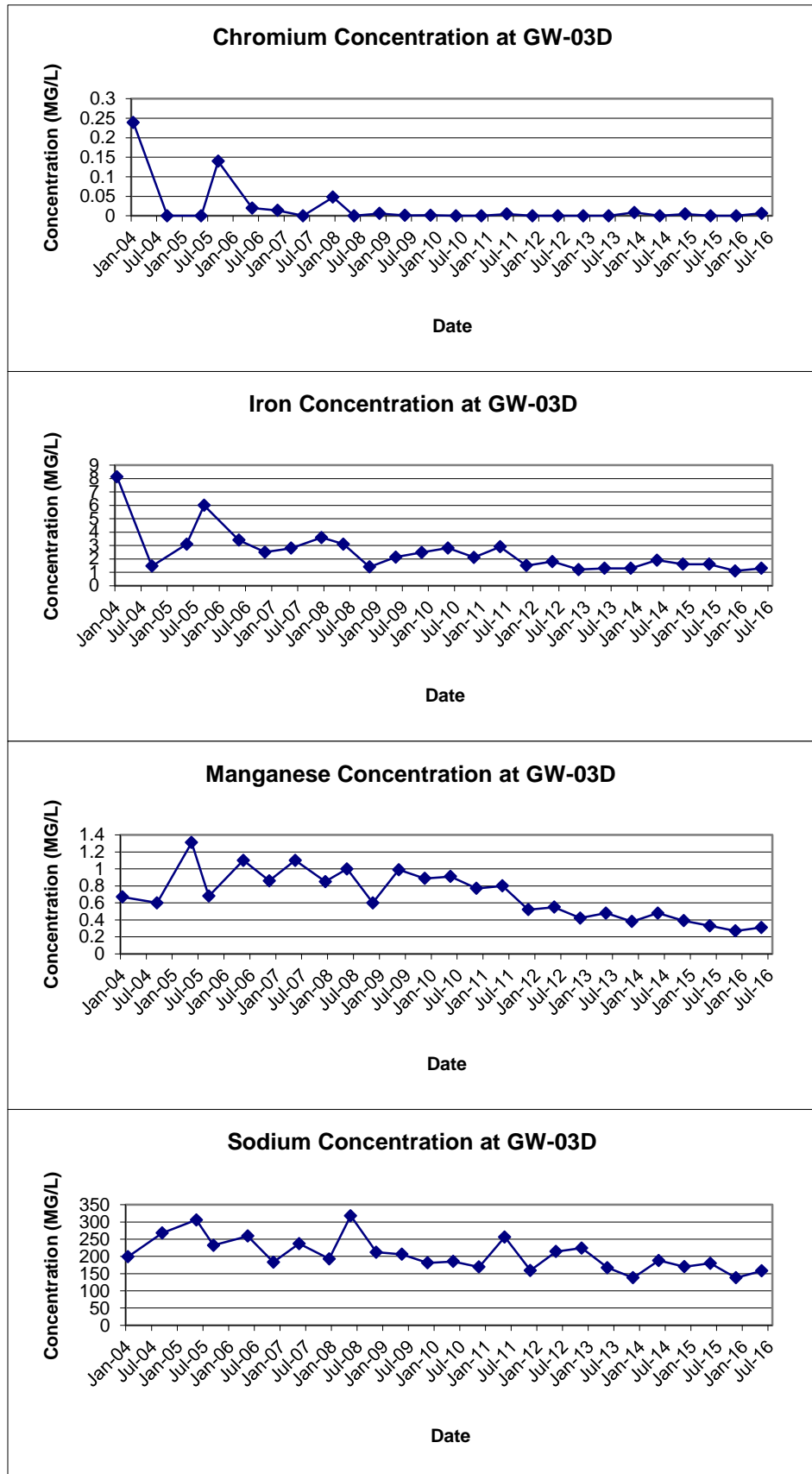


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3S

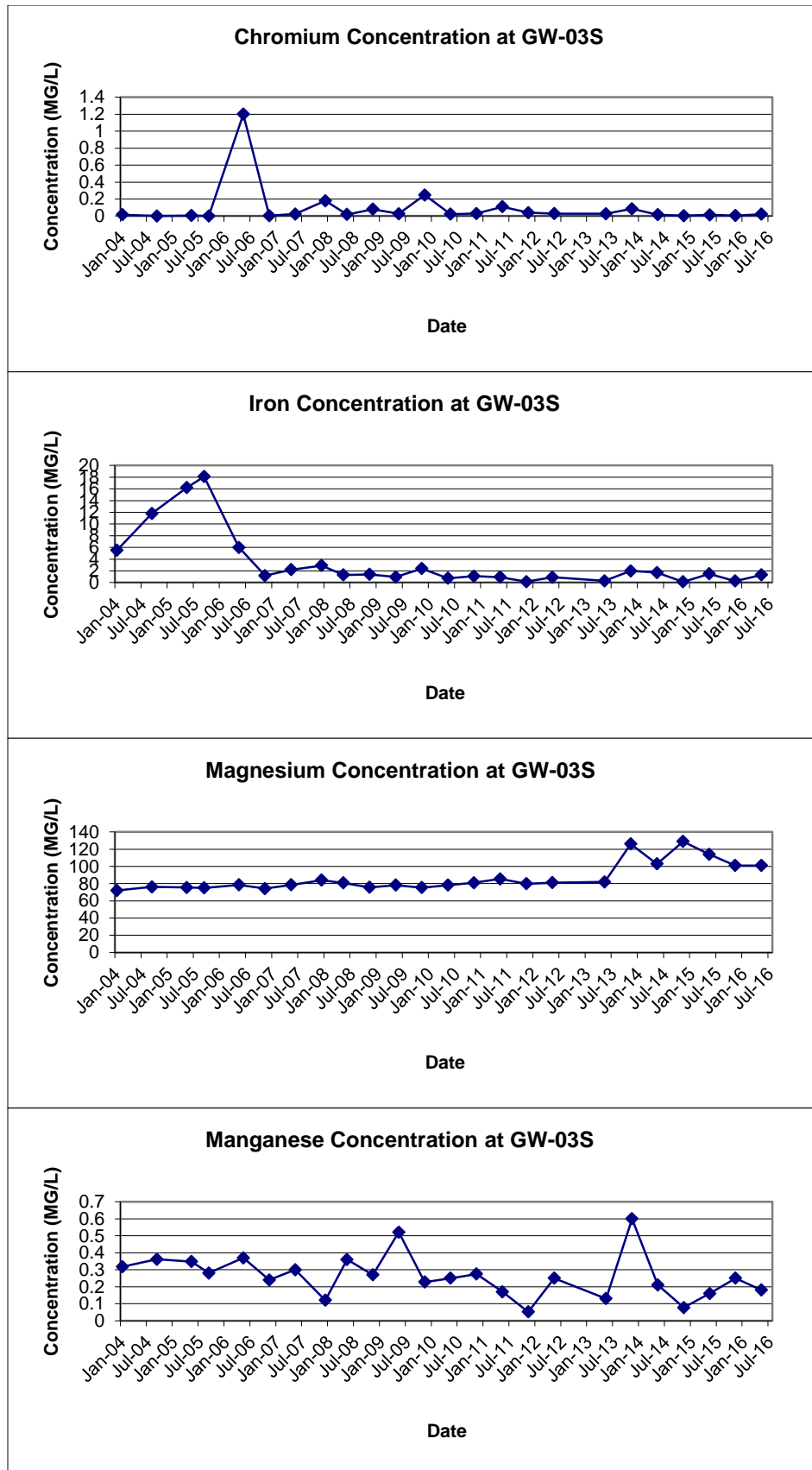


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3S

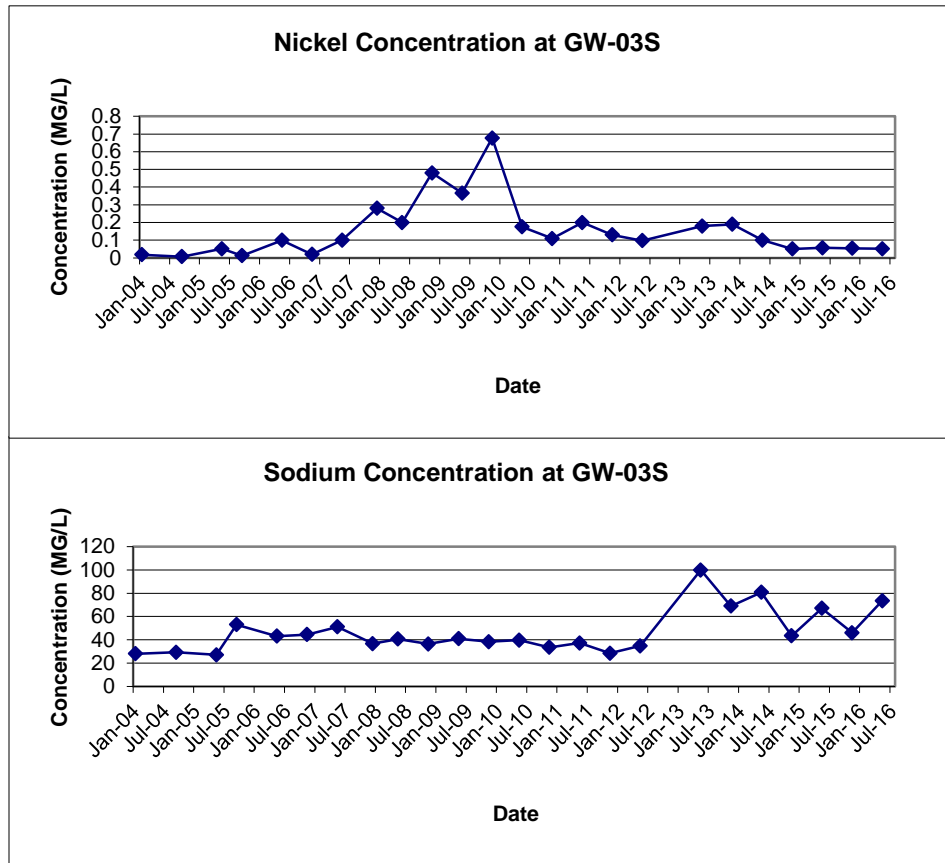


FIGURE E-5
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-04D

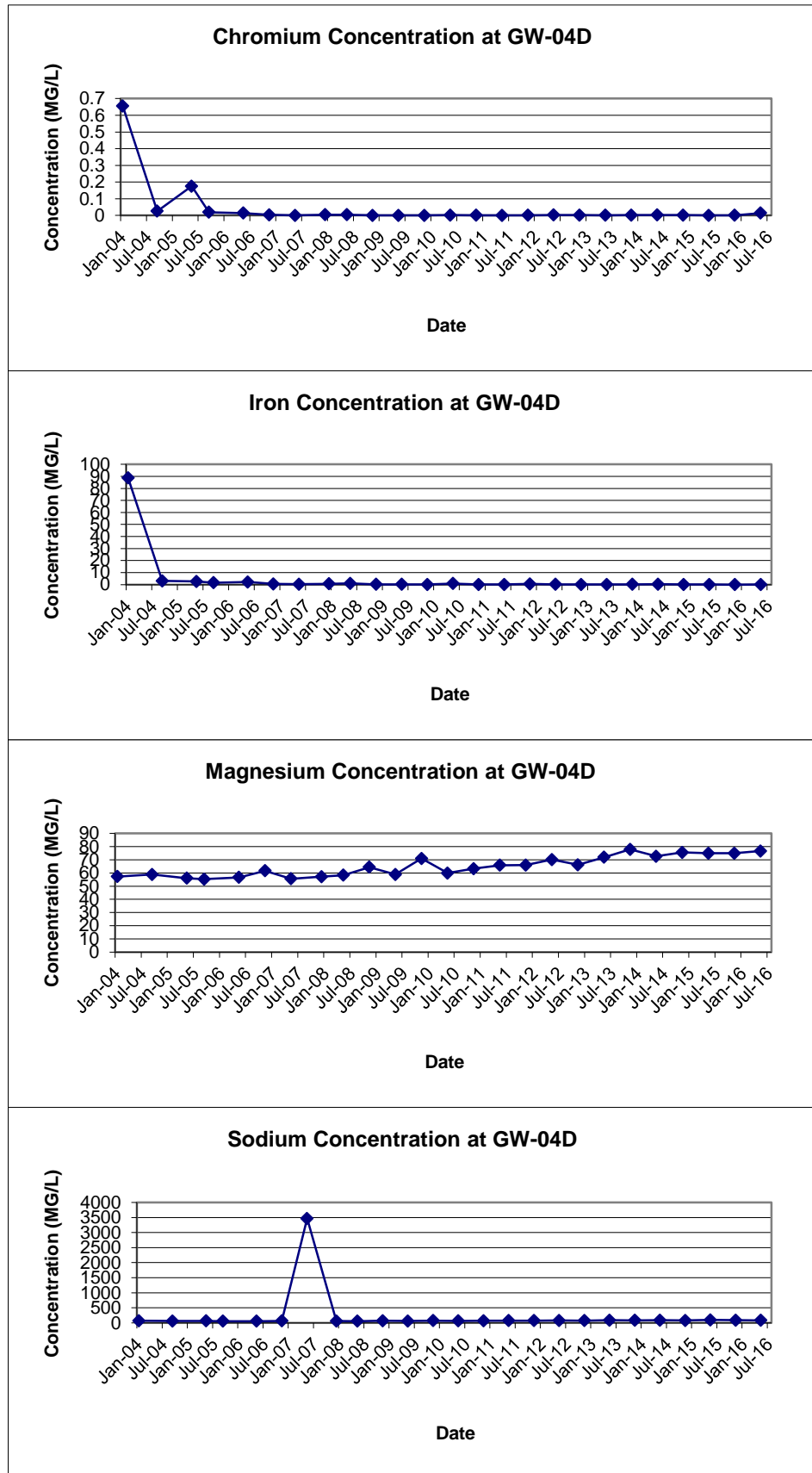


FIGURE E-6
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-4S

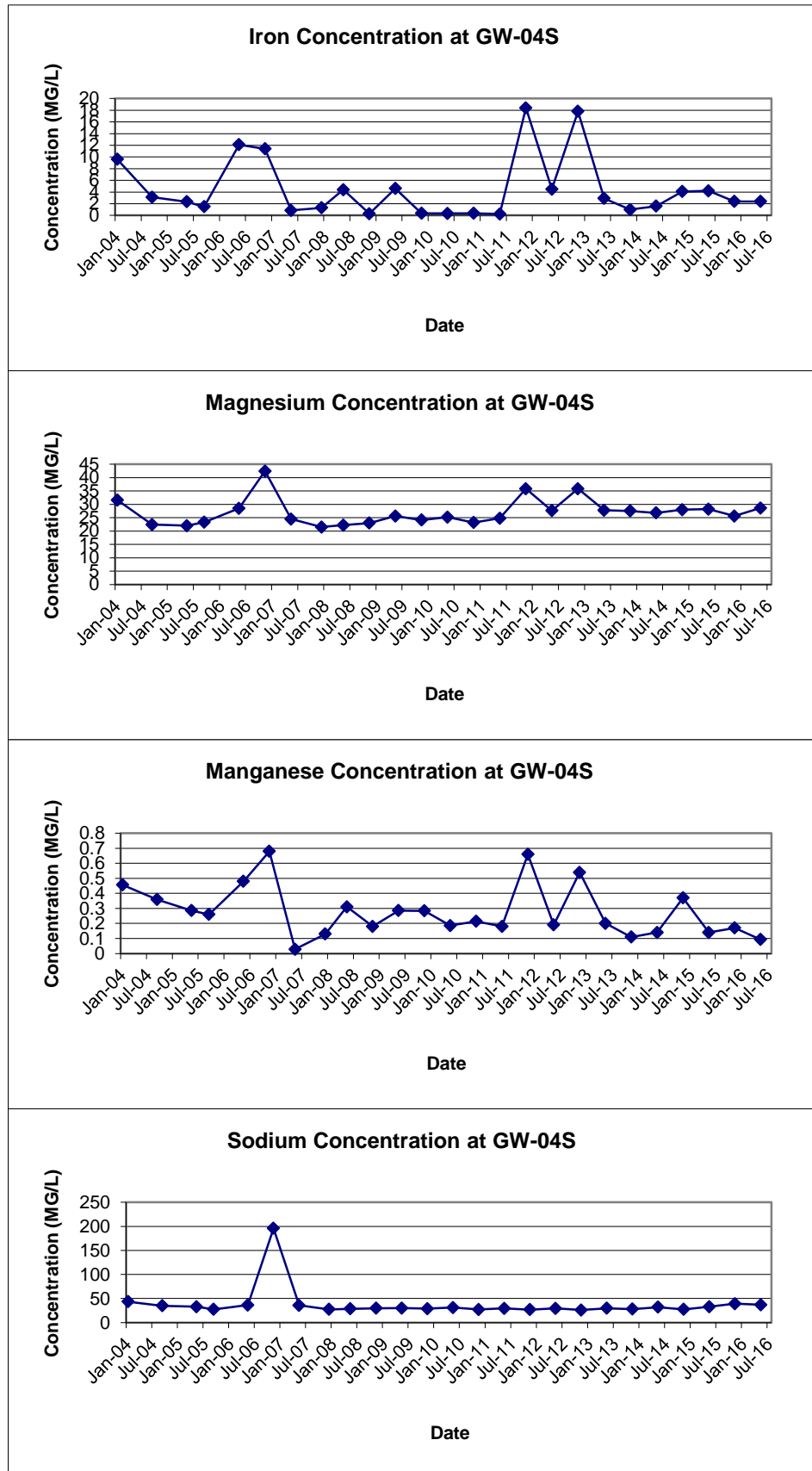


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-7D

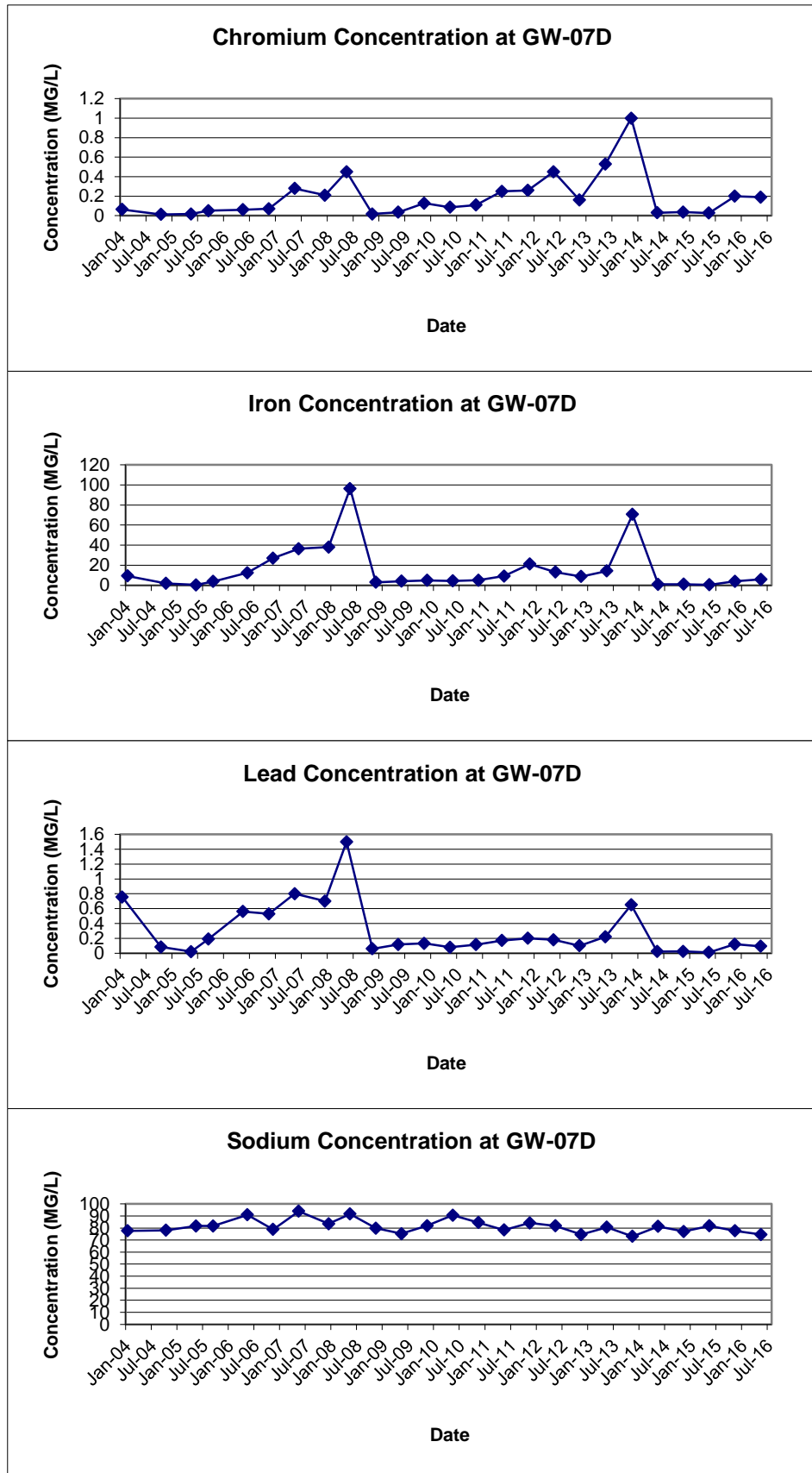


FIGURE E-8
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-7S

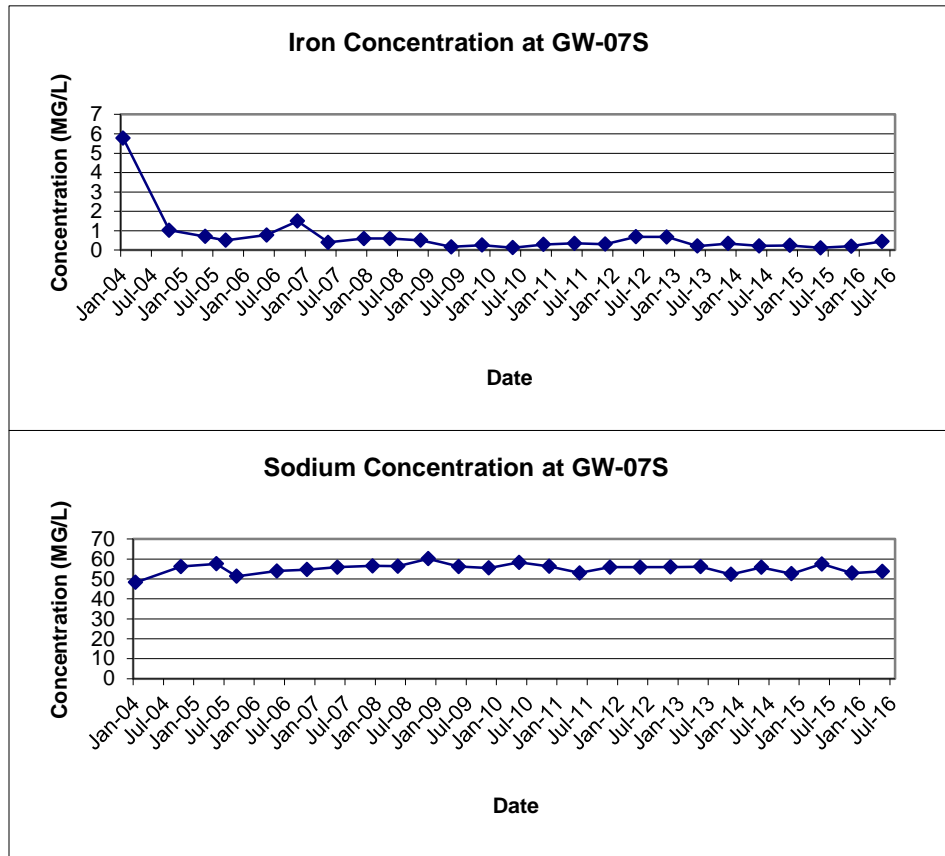


FIGURE E-9
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-8D

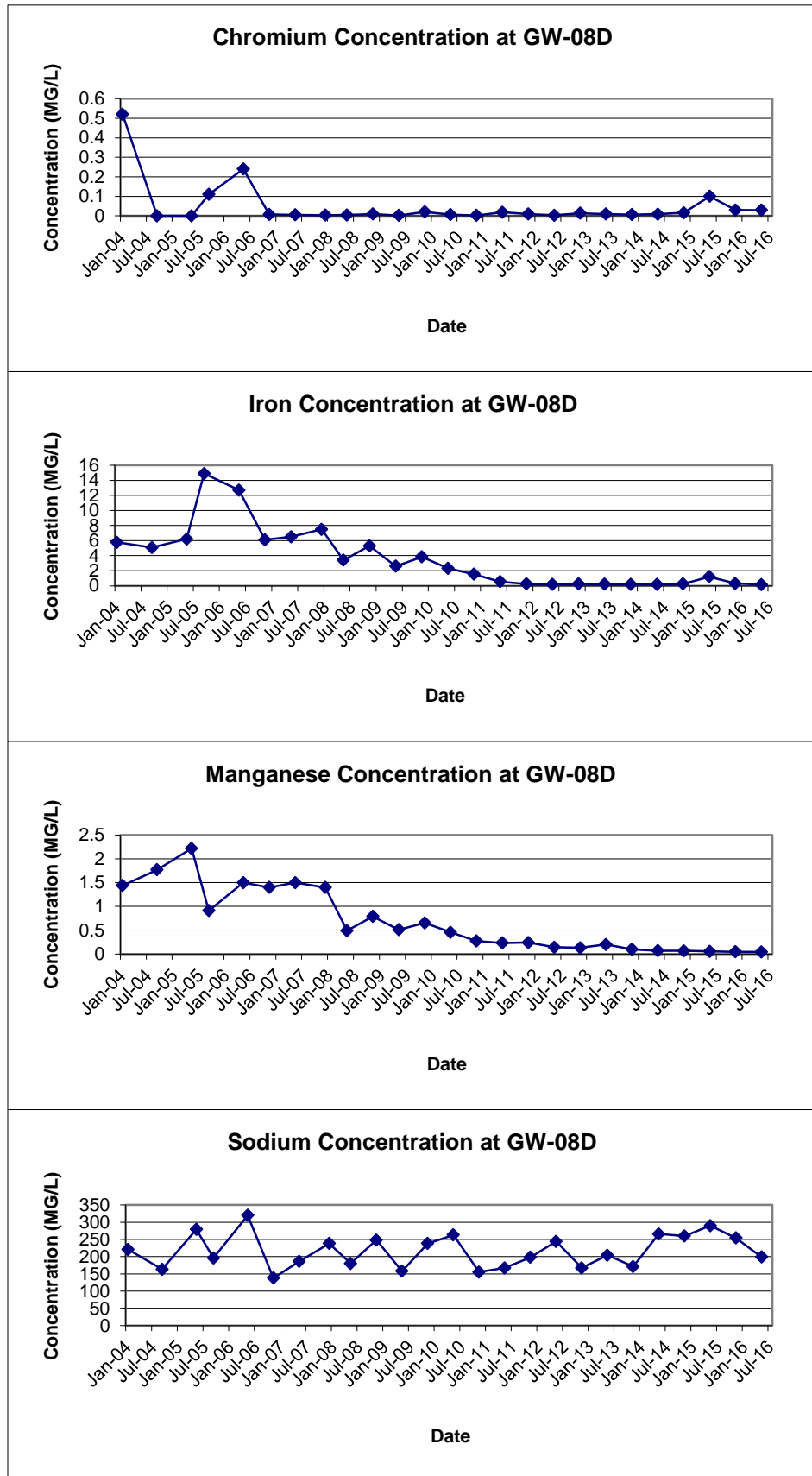


FIGURE E-10
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-08SR

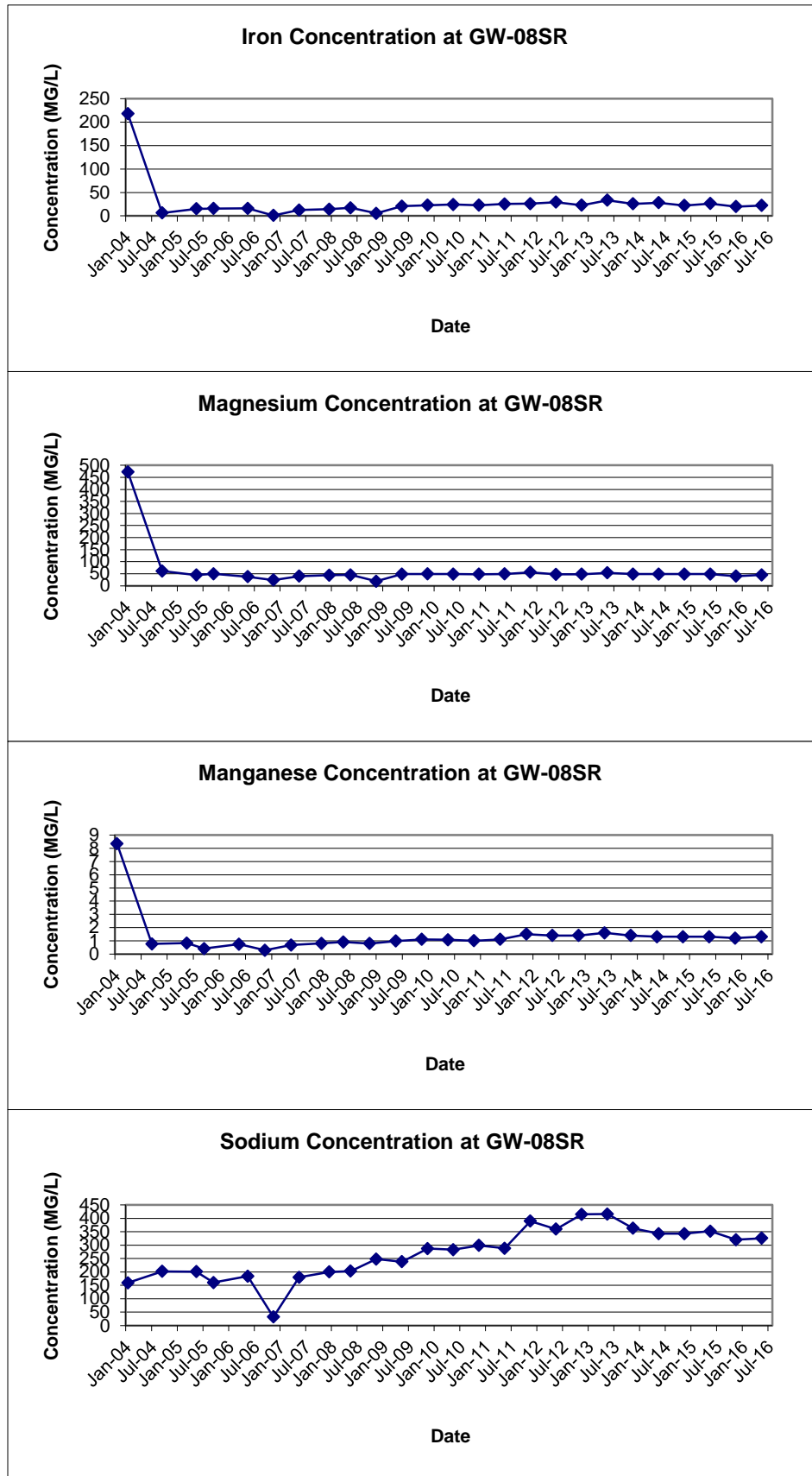


FIGURE E-11
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-26D

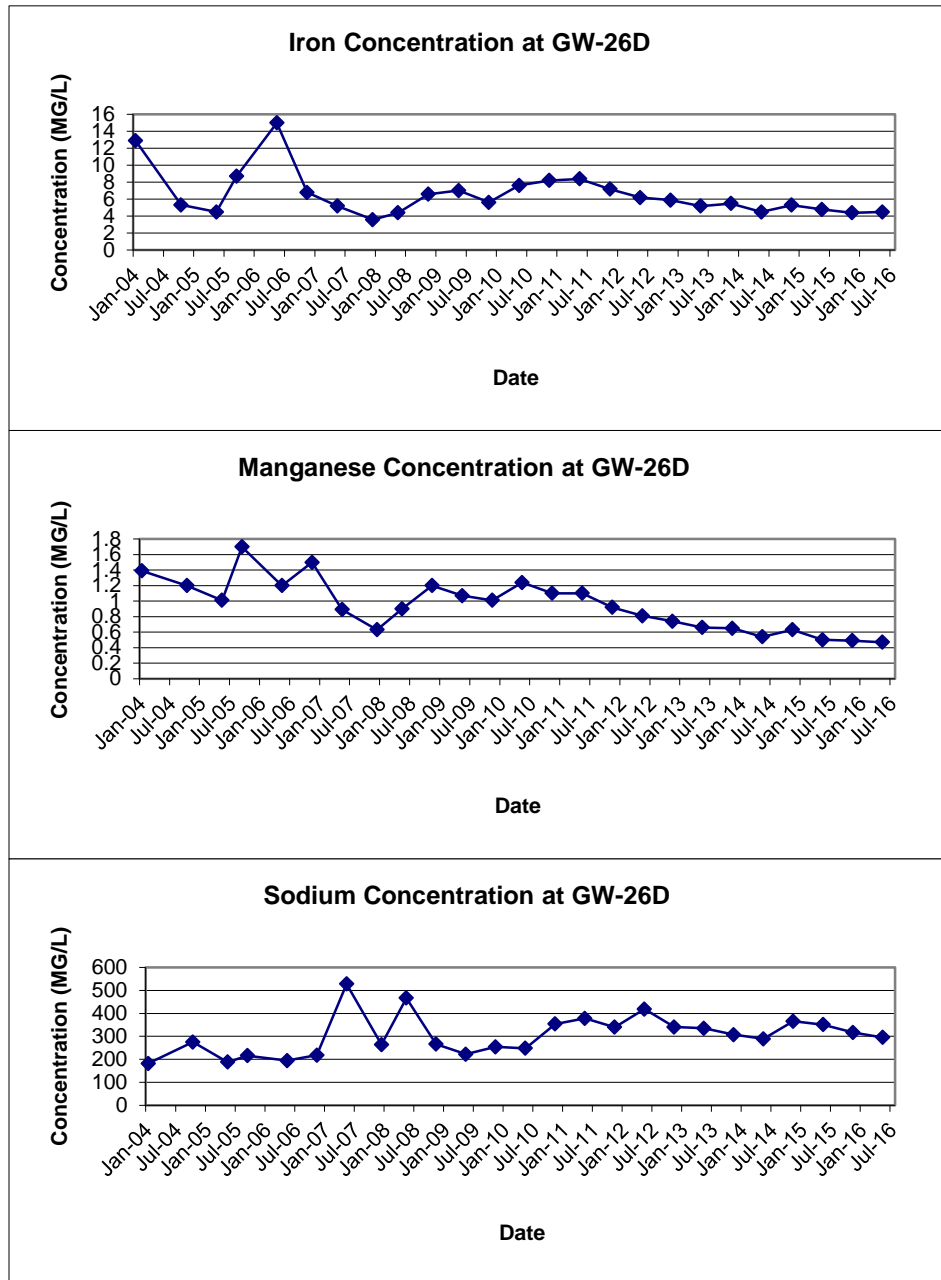


FIGURE E-12
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-28S

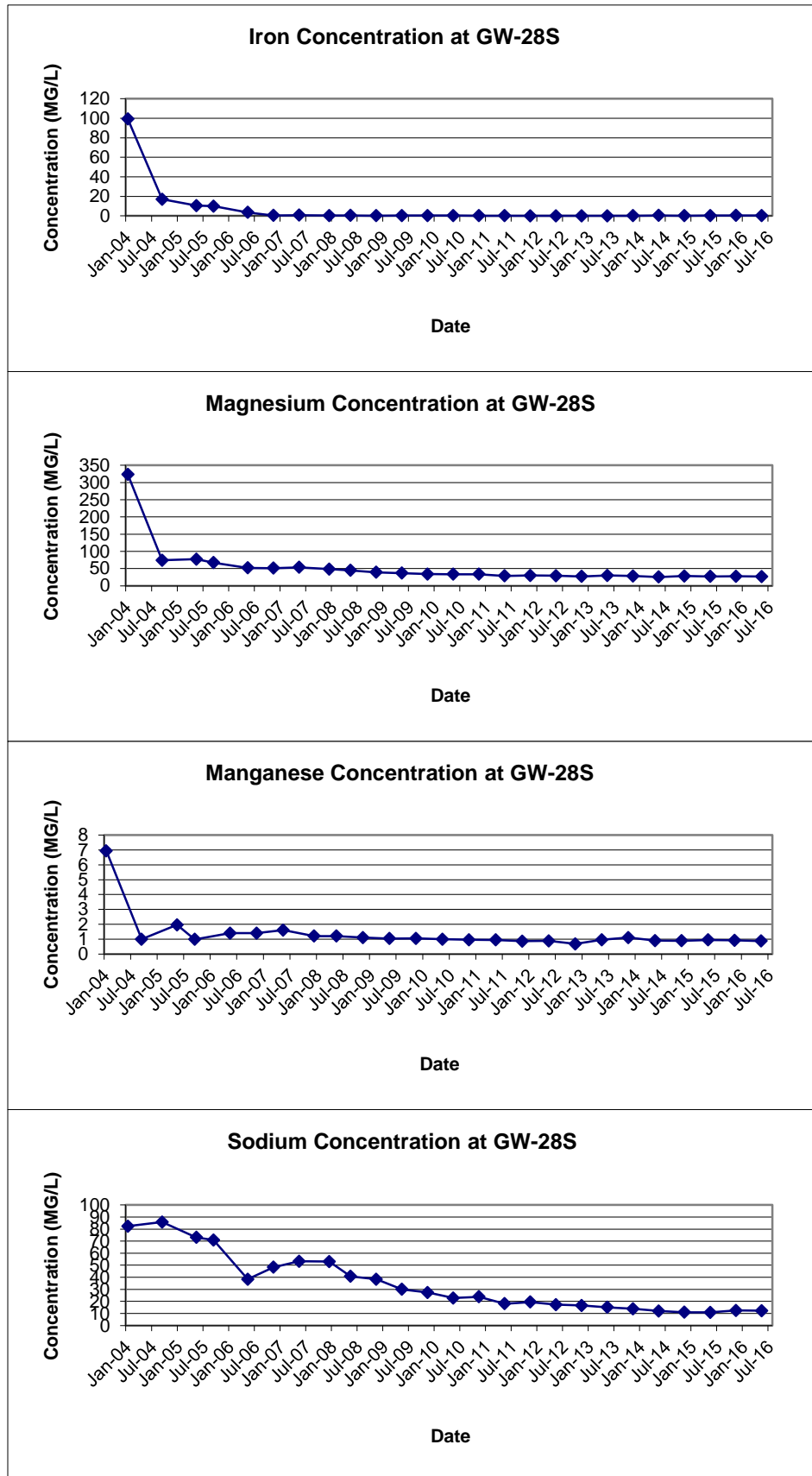


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

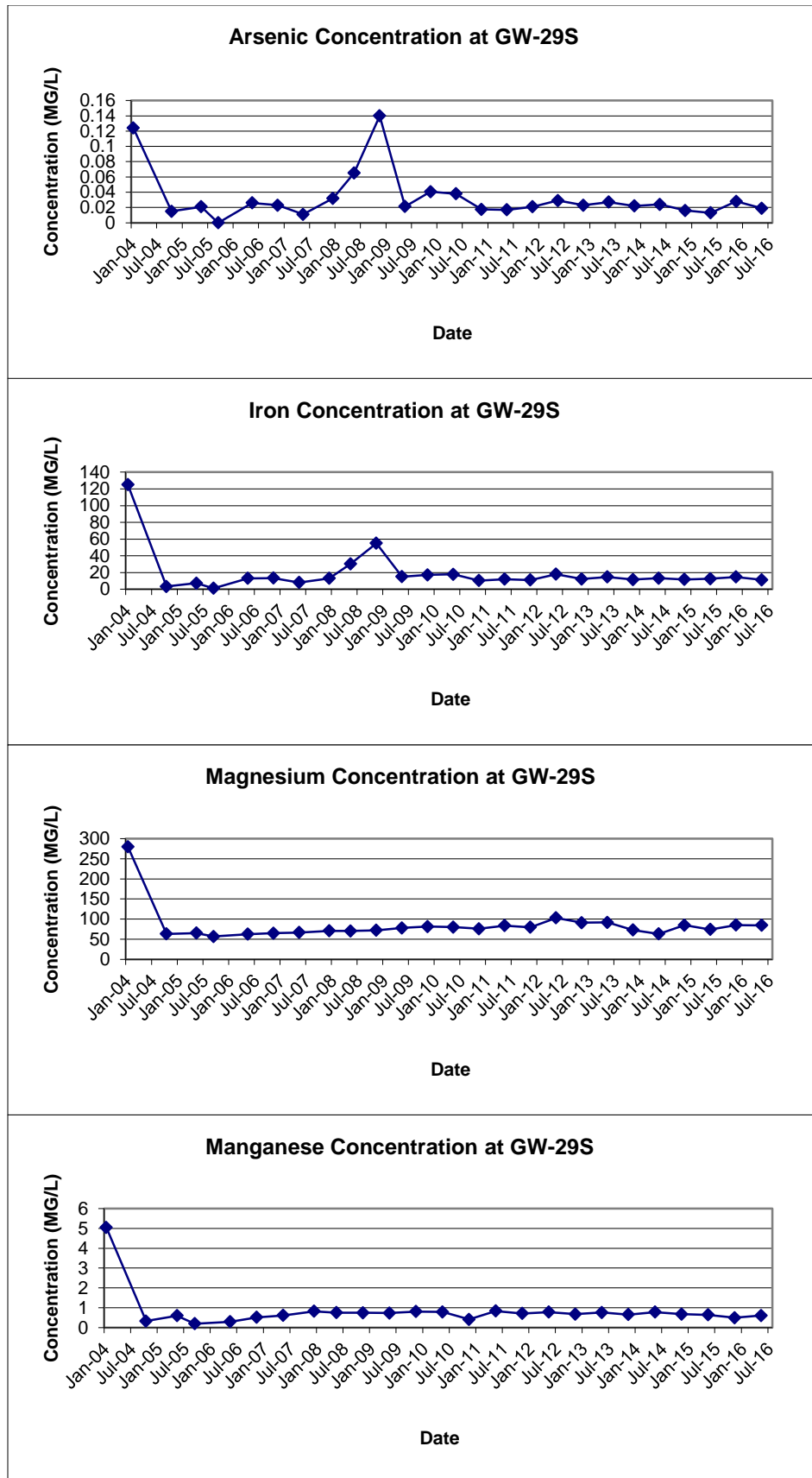


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

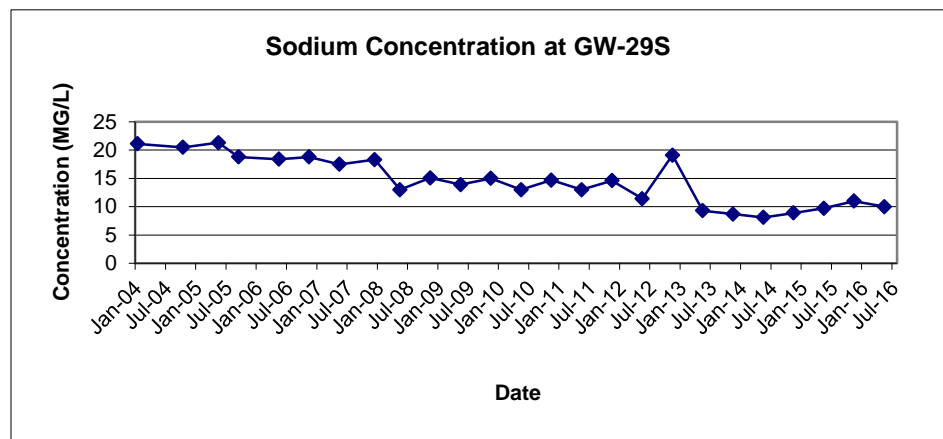


FIGURE E-14
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-30S

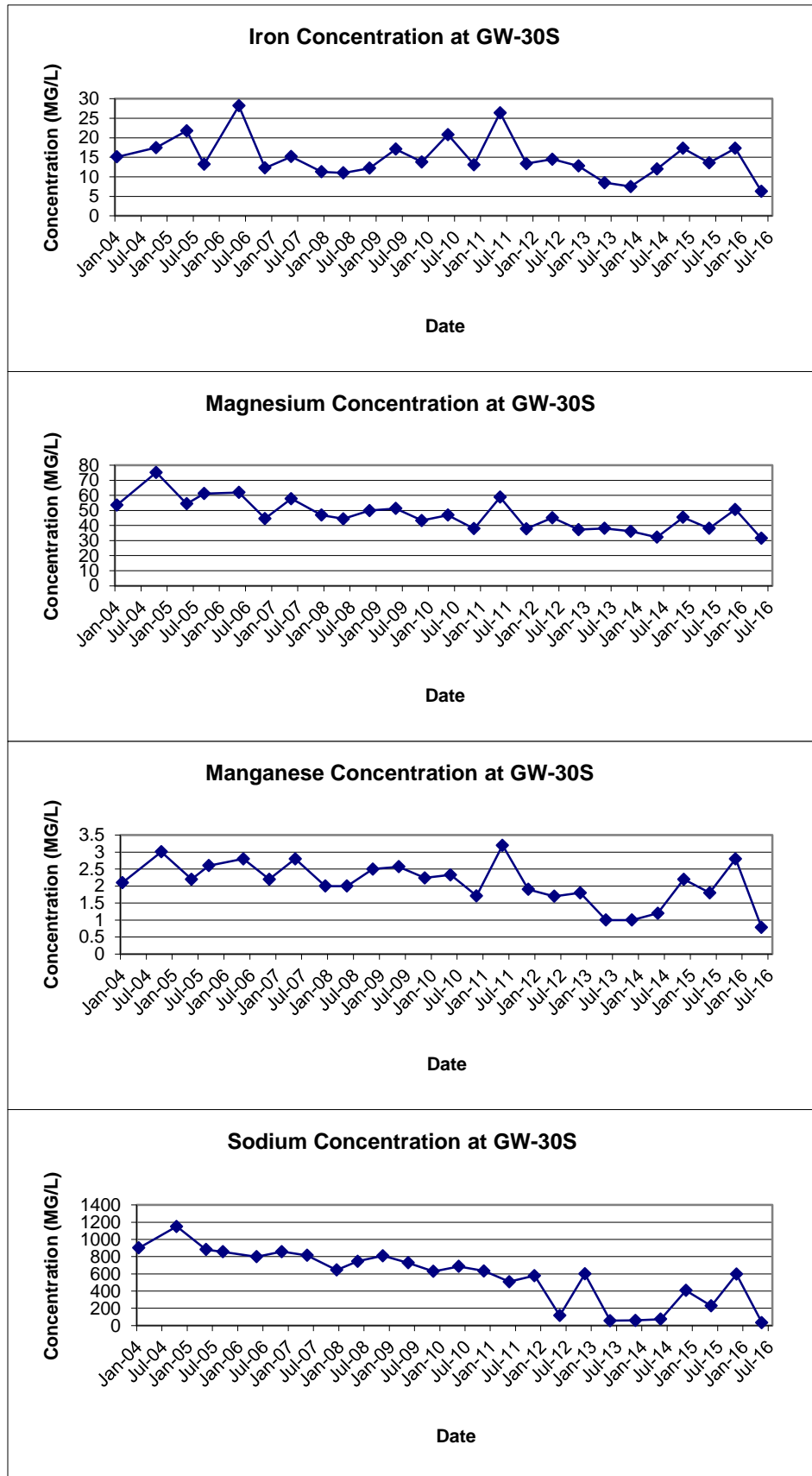


FIGURE E-15
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-31S

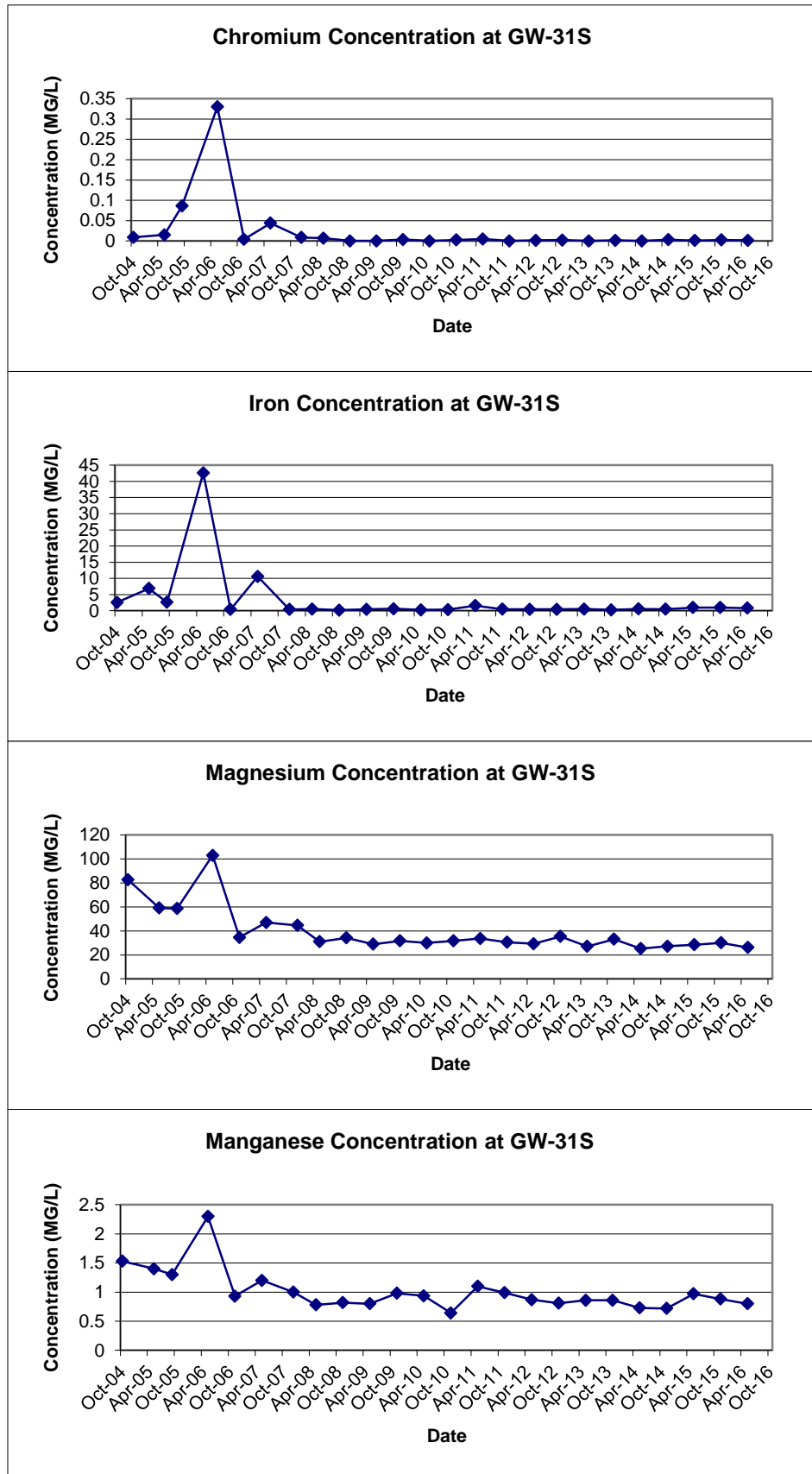


FIGURE E-16
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-32S

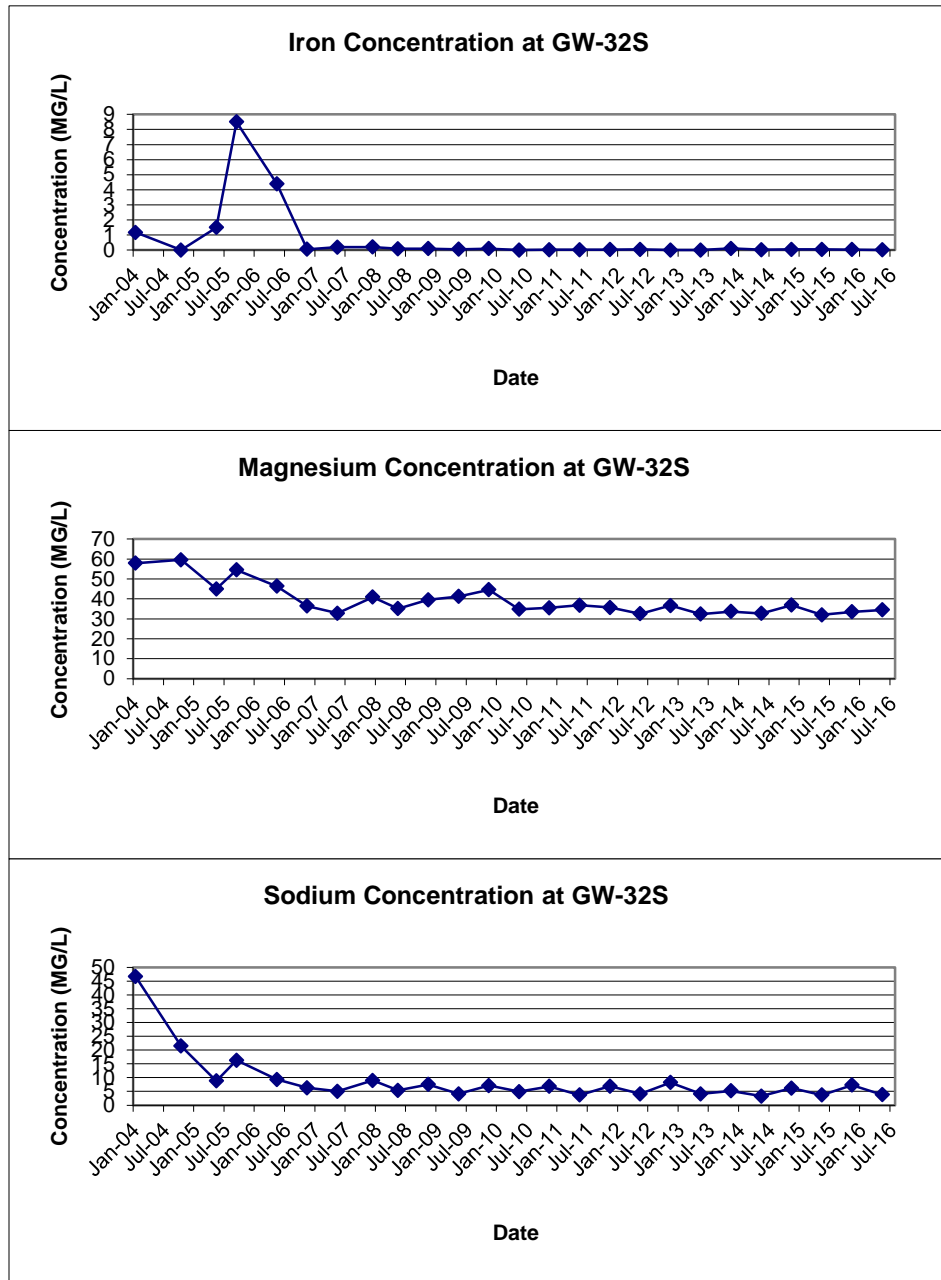


FIGURE E-17
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-33S

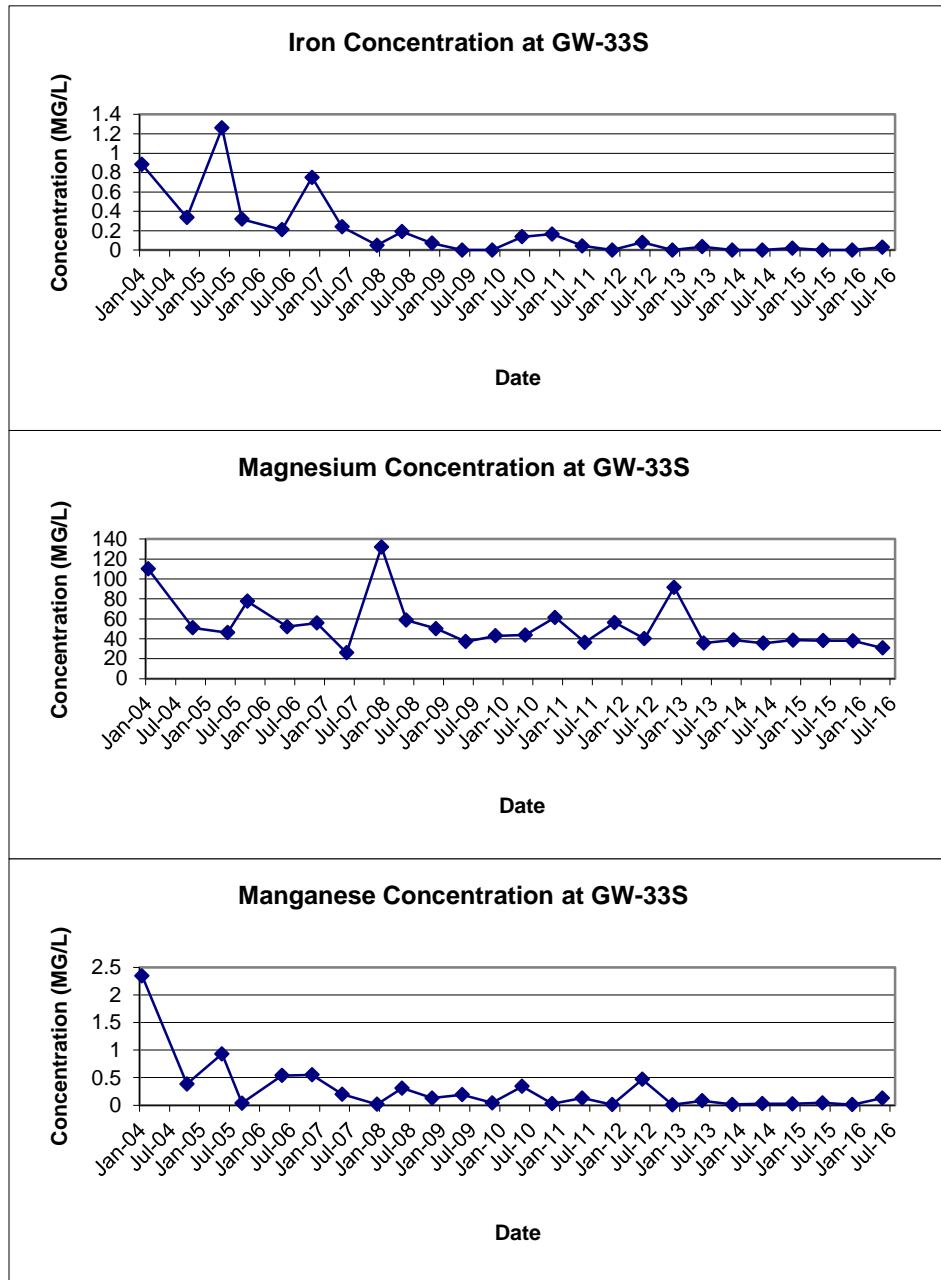


FIGURE E-18
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-34S

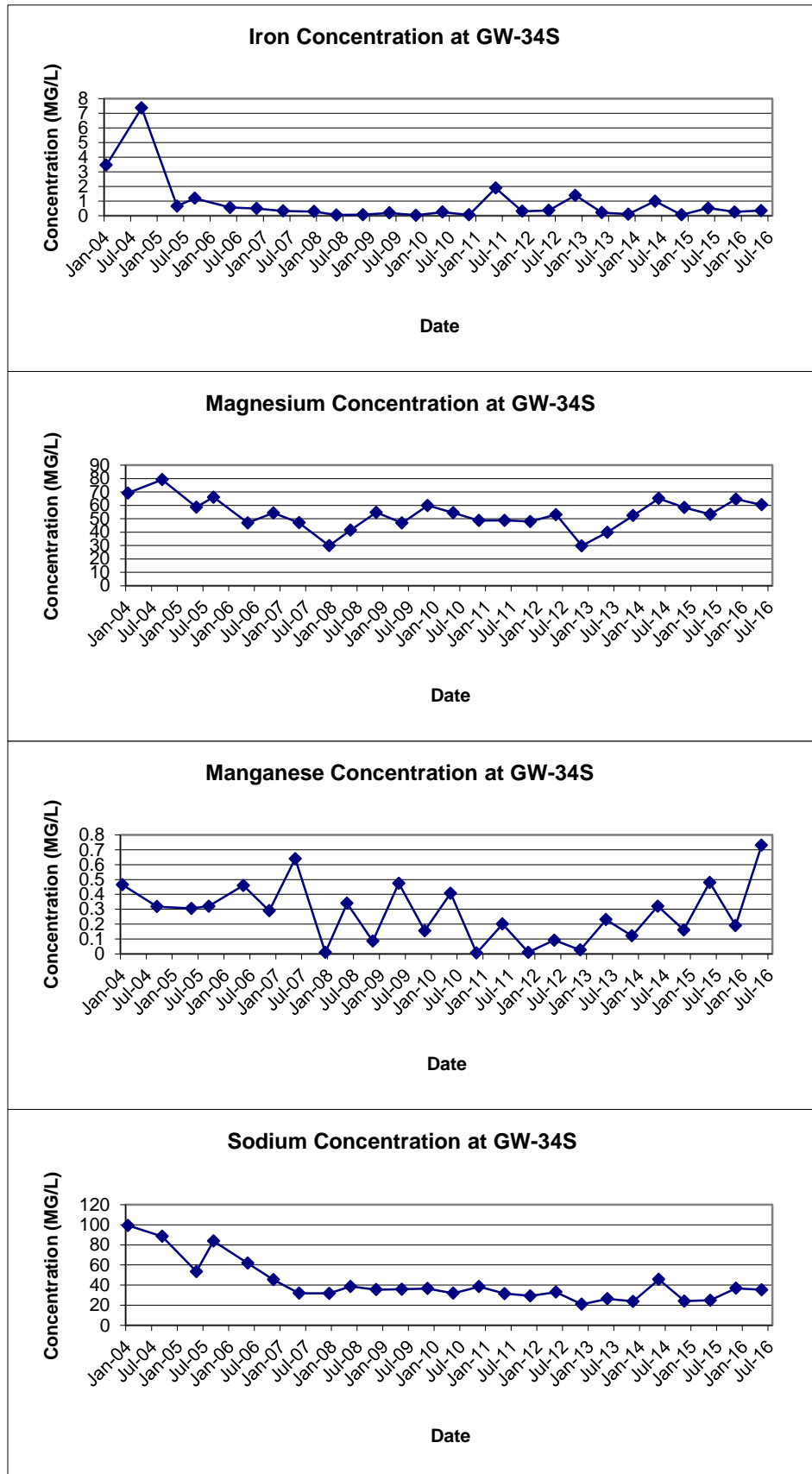
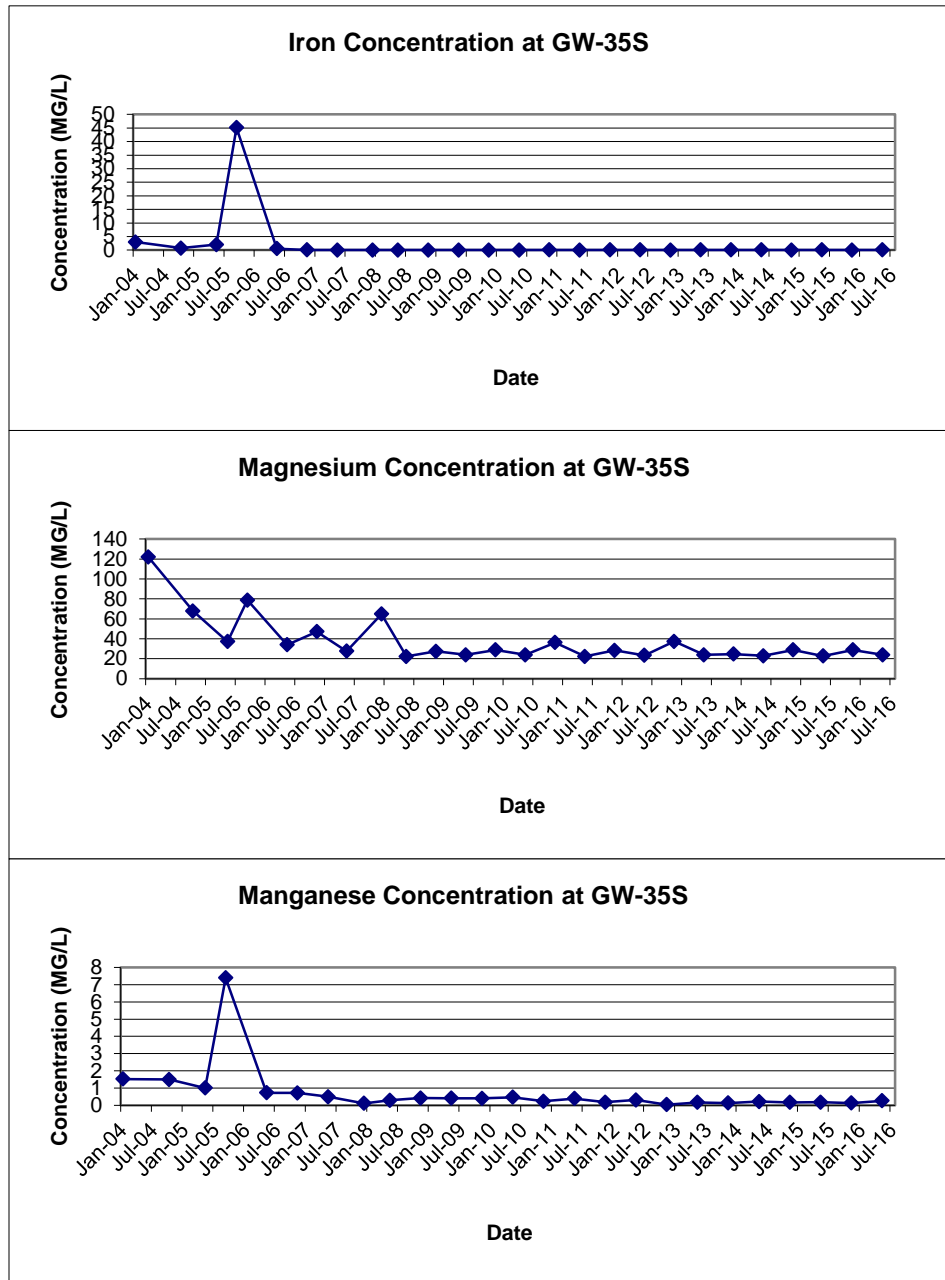


FIGURE E-19
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-35S



APPENDIX F

BSA PERMIT NO. 13-04-CH016 AND 16-04-CH016

The Town of Cheektowaga
275 Alexander Street
Cheektowaga NY 14211



Engineering Department
Office: 716-897-7288
Fax: 716-897-7299

WILLIAM R. PUGH, P.E.
TOWN ENGINEER

October 8, 2013

Mr. Jon Sundquist, PhD
Project Manager
URS Corporation
77 Goodell Street
Buffalo, New York 14203

Re: Pfohl Bros. Landfill
Site Discharge Permit

Dear Mr. Sundquist:

Enclosed please find a copy of the Buffalo Sewer Authority Discharge Permit, BPDES 13-04-0CH16, for your file for the referenced site which was renewed earlier this year having an expiration date of March 31, 2016. All discharge limitations and sampling requirements remain the same as the most recent expired permit.

Should you have any questions, please contact this office at 897-7288.

Very truly yours,

TOWN OF CHEEKTOWAGA

A handwritten signature in dark ink, appearing to read "W. R. Pugh", is written over the printed name.

William R. Pugh, P.E.
Town Engineer

WRP/mj

enc.

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

PERMIT NO. 13-04-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 11, 2013** 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, 2013

To Expire the 31st day of March, 2016



General Manager

Signed this 12th day of March, 2013

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

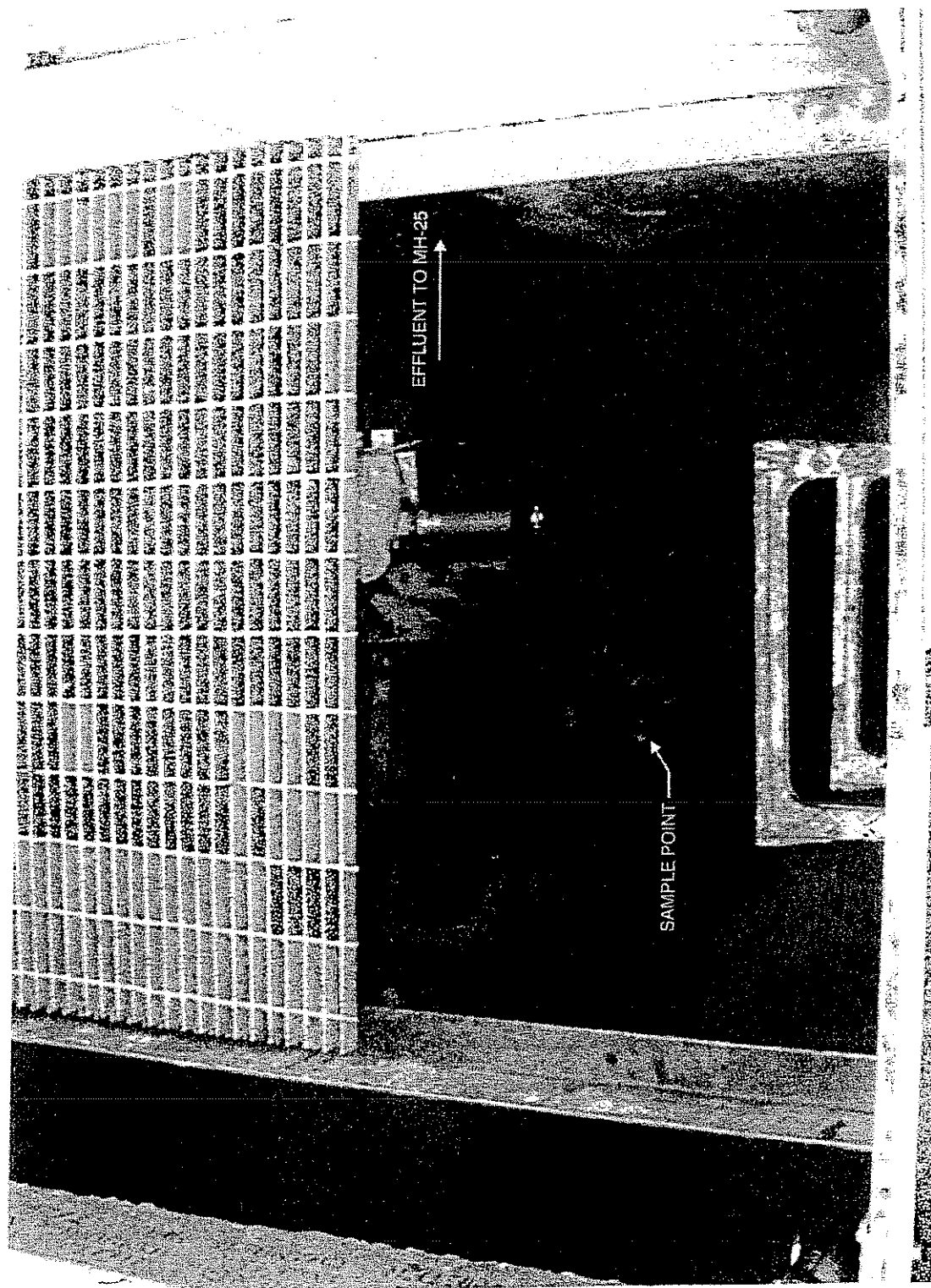
During the period beginning the effective date of this permit and lasting until the expiration date, discharge monitoring results shall be summarized and reported **quarterly** by the permittee on the days specified below:

Sample Point	Parameter	Reporting Requirements	
		Initial Report	Subsequent Reports
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	March 31, 2011	Every March 31 st , June 30 th , September 30 th and December 31 st
	USEPA Test Methods 608, 624 and 625 & T Mercury	March 31, 2011	

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.



URS

PFOHL BROTHERS LANDFILL
EFFLUENT SAMPLE POINT

FIGURE 1

**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:

**Mr. William Pugh, 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.

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

PERMIT NO. 16-04-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:

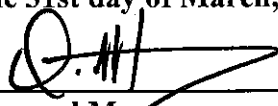
PFOHL BROTHERS LANDFILL REMEDIATION SITE
1000 AERO DRIVE
CHEEKTOWAGA, NEW YORK 14225

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 **July 6, 2016** 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, 2016

To Expire the 31st day of March, 2019



General Manager
Signed this 11th day of July, 2016

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:

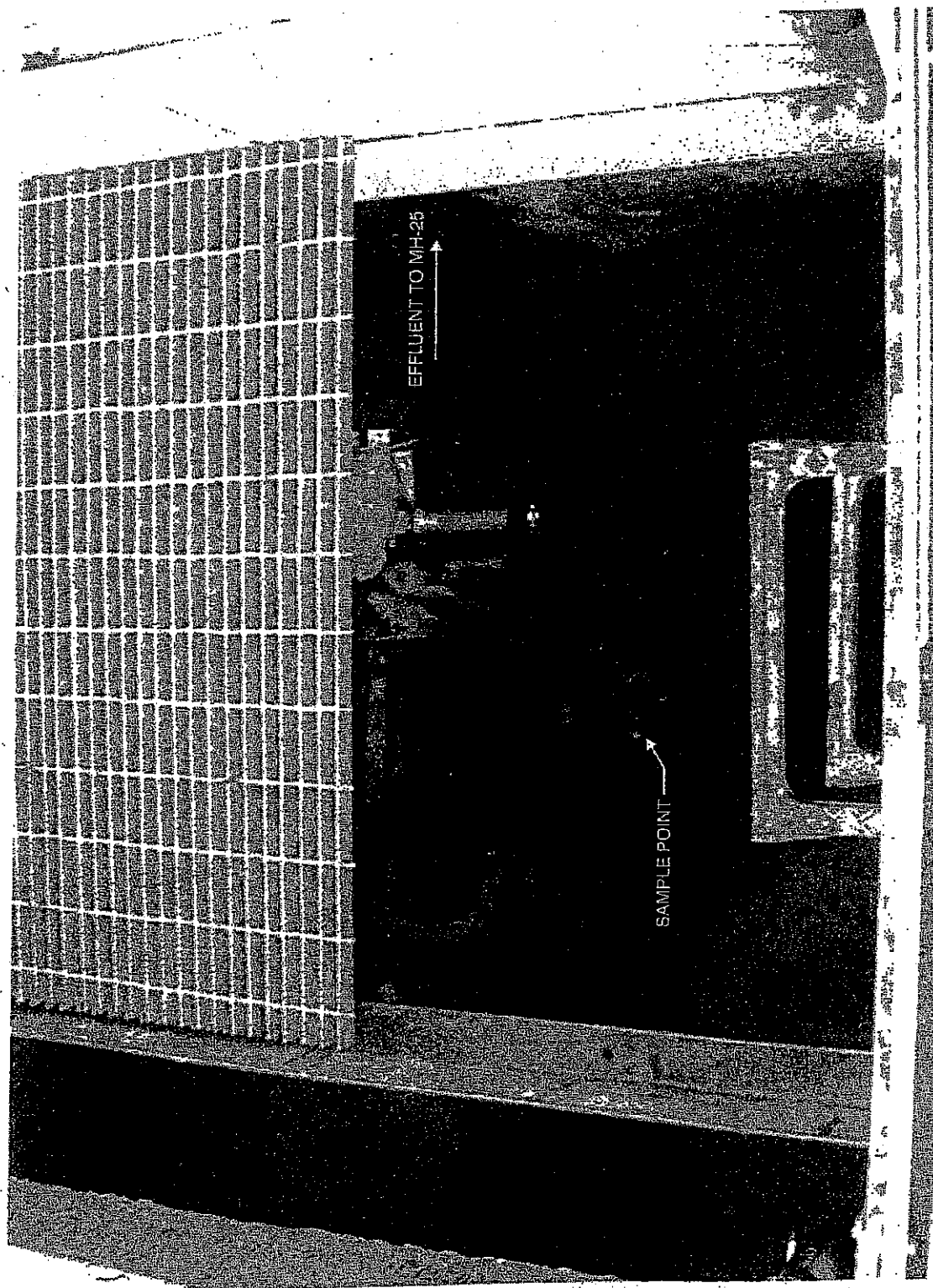
Sample Point	Parameter	Reporting Requirements	
		Initial Report	Subsequent Reports
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	June 30, 2016	Every March 31 st , June 30 th , September 30 th and December 31 st
	USEPA Test Methods 608, 624 and 625 & T Mercury	June 30, 2016	

* Please submit new discharge 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.



URS

PFOHL BROTHERS LANDFILL
EFFLUENT SAMPLE POINT

FIGURE 1

**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:

**PAT BOWEN
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

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.

7. Certification Statement

All self-monitoring reports shall include the following certification statement, signed by the preparer of the report:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the systems, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing

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. Slug Control Plan

Upon written notification by the BSA that a slug control plan is necessary for the permittee, the plan shall be prepared in accordance with the BSA "Sampling Measurement and Analytical Guidelines" sheet. Within 90 days of the BSA notification, the permittee must implement the slug control plan

4. 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 of the quantity and character of such discharge. During normal business hours, Monday- Friday, 7:30 AM – 3:00 PM call 716-851-4664, ext 5374. After normal business hours call 716-851-4664, ext 600. For all slug discharges, and when requested by the B.S.A. following an accidental discharge or spill, 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.

5. 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 716-851-4664 ext. 5374 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.

Additionally, the permittee shall repeat the sampling and analysis and submit these results of the report analysis to the Industrial Waste Section within 30 days after becoming aware of these violations

6. 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.

7. 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.

8. 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.

9. 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.

10. 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.

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.

Revised March 17, 2014 by LS

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: 3/16/16 Crew: R. Murphy, T. Urban, K. McGovern

Weather: 45° F, Light Rain

Sampling Device: NA

Time of Installation: 10:30 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: No wells were running at the time of sample set-up.
PLC display volumes: WW-01 (555,187 gals), WW-02 (0 gals), WW-03 (4,625 gals),
WW-04 (111,824 gals), WW-05 (3,672,575 gals), WW-06 (3,549,716 gals) & MH-25 (7,893,024 gals).

Date: 3/17/16 Crew: R. Murphy, T. Urban, K. McGovern

Weather: 49° F, Clear

Time of Collection: 10:30

Field Measurements:

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

pH Measurement: 8.03

Temperature: 9.5°C

Identification: EFF-031716

Physical Observations: _____

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells were running at the time of sample collection.
PLC display volumes: WW-01 (557,716 gals), WW-02 (0 gals), WW-03 (4,625 gals),
WW-04 (117,333 gals), WW-05 (3,685,620 gals), WW-06 (3,624,963 gals) & MH-25 (7,989,310 gals).

Reviewed By: _____ Date: _____
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
MARCH 2016**

Sample ID	EFF-031716			
Matrix	Effluent Water			
Date Sampled	3/17/2016			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Y/N)
Total Barium	0.25	0.20	2.34	No
Total Cadmuim	< ⁽¹⁾ 0.0005	< 0.00040	1.17	No
Total Chromium	< 0.0010	< 0.0008	1.17	No
Total Copper	0.0099	0.008	3.74	No
Total Lead	0.0045	0.0036	1.17	No
Total Nickel	0.0020	0.0016	3.27	No
Total Zinc	0.040	0.032	5.84	No
Total Suspended Solids	10.8	NA ⁽²⁾	250 ⁽³⁾	No
pH ⁽⁴⁾	8.03	NA	5.0 - 12.0	No
Total Flow ⁽⁵⁾		96,286	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
- * Mercury and organics analysis performed once per permit duration

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

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: 6/7/16 Crew: R. Murphy, T. Urban, J. Boyd

Weather: 64° F, Cloudy

Sampling Device: NA

Time of Installation: 11:40 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: No wells were running at the time of sample set-up.
PLC display volumes: WW-01 (683,036 gals), WW-02 (-670 gals), WW-03 (21,721 gals),
WW-04 (183,501 gals), WW-05 (4,777,546 gals), WW-06 (4,609,526 gals) & MH-25 (10,278,388 gals).

Date: 6/8/16 Crew: R. Murphy, T. Urban, J. Boyd

Weather: 49° F, Clear

Time of Collection: 11:40

Field Measurements:

11:40/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10
(time/initial)

pH Measurement: 8.47

Temperature: 16.3°C

Identification: EFF-060816

Physical Observations: _____

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells were running at the time of sample collection.
PLC display volumes: WW-01 (683,036 gals), WW-02 (-670 gals), WW-03 (21,721 gals),
WW-04 (183,501 gals), WW-05 (4,782,345 gals), WW-06 (4,609,526 gals) & MH-25 (10,283,177 gals).

Reviewed By: _____ Date: _____
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
JUNE 2016**

Sample ID	EFF-060816			
Matrix	Effluent Water			
Date Sampled	6/8/2016			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Y/N)
Total Barium	0.41	0.02	2.34	No
Total Cadmuim	< ⁽¹⁾ 0.0005	< 0.00002	1.17	No
Total Chromium	< 0.0010	< 0.00004	1.17	No
Total Copper	0.0079	0.0003	3.74	No
Total Lead	< 0.0030	< 0.0001	1.17	No
Total Nickel	0.0065	0.0003	3.27	No
Total Zinc	0.043	0.002	5.84	No
Total Suspended Solids	113.0	NA ⁽²⁾	250 ⁽³⁾	No
pH ⁽⁴⁾	8.47	NA	5.0 - 12.0	No
Total Flow ⁽⁵⁾		4,789	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
 * Mercury and organics analysis performed once per permit duration

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

APPENDIX H

MONITORING WELL INSPECTION LOGS

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill

Project Number: 60411174

Inspection Crew Members: K. McGovern, T. Urban

Supervisor: J. Sundquist

Date(s) of Inspection: May 18, 2016

<i>Well I.D. Number</i>	<i>Lock</i>	<i>Surface Seal</i>	<i>Protective Casing</i>	<i>Riser</i>	<i>Water Level (ft. BTOC)</i>	<i>Well Depth (ft. BTOC)</i>	<i>Other Comments</i>
GW-01S	OK	OK	OK	Bulged	4.69	14.94	Replaced Lock
GW-01D	OK	OK	OK	Bulged	3.18	39.65	Replaced Lock
GW-03S	OK	OK	OK	OK	3.05	13.22	
GW-03D	OK	OK	OK	OK	2.18	35.70	
GW-04S	OK	OK	OK	OK	4.73	16.23	
GW-04D	OK	OK	OK	OK	12.78	45.57	
GW-07S	OK	OK	OK	OK	5.40	35.04	
GW-07D	OK	OK	OK	Damaged	48.00	60.45	

Additional Comments:

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill

Project Number: 60411174

Inspection Crew Members: K. McGovern, T. Urban

Supervisor: J. Sundquist

Date(s) of Inspection: May 18, 2016

<i>Well I.D. Number</i>	<i>Lock</i>	<i>Surface Seal</i>	<i>Protective Casing</i>	<i>Riser</i>	<i>Water Level (ft. BTOC)</i>	<i>Well Depth (ft. BTOC)</i>	<i>Other Comments</i>
GW-08SR	OK	OK	OK	OK	5.28	13.02	
GW-08D	OK	OK	OK	OK	6.17	36.54	
GW-26D	OK	OK	OK	OK	7.00	40.70	
GW-28S	OK	OK	OK	OK	9.82	15.52	
GW-29S	OK	OK	OK	OK	9.22	20.04	
GW-30S	OK	OK	OK	OK	7.96	17.97	
GW-31S	OK	OK	OK	OK	4.22	9.57	
GW-32S	OK	OK	OK	OK	4.21	9.93	

Additional Comments:

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: K. McGovern, T. Urban Supervisor: J. Sundquist

Date(s) of Inspection: May 18, 2016

<i>Well I.D. Number</i>	<i>Lock</i>	<i>Surface Seal</i>	<i>Protective Casing</i>	<i>Riser</i>	<i>Water Level (ft. BTOC)</i>	<i>Well Depth (ft. BTOC)</i>	<i>Other Comments</i>
GW-33S	OK	OK	OK	OK	5.49	8.21	
GW-34S	OK	OK	OK	OK	3.15	10.01	
GW-35S	OK	OK	OK	OK	4.19	7.46	

Additional Comments:

DATA APPLICABILITY REPORT

SEMI-ANNUAL GROUNDWATER MONITORING

PFOHL BROTHERS LANDFILL SITE

Analyses Performed by:

**TESTAMERICA LABORATORIES, INC.
10 HAZELWOOD DRIVE
AMHERST, NY 14228**

Prepared for:

**TOWN OF CHEEKTOWAGA
CHEEKTOWAGA, NY 14225**

Prepared by:

**URS CORPORATION
257 WEST GENESEE STREET, SUITE 400
BUFFALO, NY 14202-2657**

AUGUST 2016

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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 2016 semi-annual monitoring program at the Pfohl Brothers Landfill Site, located in Cheektowaga, NY.

II. ANALYTICAL METHODOLOGIES AND DATA VALIDATION PROCEDURES

The data being evaluated are from the May 18-20, 2016 sampling of nineteen (19) groundwater samples, one (1) field duplicate, and one (1) matrix spike (MS)/matrix spike duplicate (MSD) pair. A total of two (2) trip blanks, one per sample shipment, were sent to the laboratory along with the samples. The analytical laboratory that performed the analyses was TestAmerica Laboratories, Inc. 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 Method 6010C/7470A. The trip blanks were only analyzed for VOCs.

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

- *National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-014-002, August 2014.
- *National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-13-001, August 2014.

The limited data validation 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 validated analytical results are presented on Table 1 (groundwater) and Table 2 (field QC). Copies of the validated 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 were provided by the laboratory, which only consisted of analytical summaries, QC reporting forms, case narratives, and sample receipt 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.

Due to the low recharge rates of monitoring wells GW-07D and GW-07S, the VOC aliquots were collected on 05/18/16, while the SVOC/metals aliquots were collected on 05/19/16. All aliquots of sample GW-04S were collected on 05/18/16, however the VOCs were collected at 10:50 am while the SVOCs/metals were collected at 12:40 pm.

V. NON-CONFORMANCES

The metals method blank exhibited contamination for manganese (Mn) at a concentration less than the reporting limit (RL). The laboratory qualified the detected Mn results 'B' in the associated samples. However, since the sample results were greater than the RL and greater than ten times the method blank results, the 'B' qualifier was removed from the affected results during the limited data validation.

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'.

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. All sample results are usable as reported. URS does not recommend the recollection of any samples at this time.

Prepared By: Ann Marie Kropovitch, Chemist

Date: 8/12/16

Reviewed by: Peter R. Fairbanks, Senior Chemist

Date: 8/12/16

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-1D	GW-1S	GW-3D	GW-3S	GW-4D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/18/16	05/18/16	05/19/16	05/19/16	05/18/16
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	9.3 U	9.5 U	2.1 J	9.7 U	9.4 U
1,4-Dichlorobenzene	UG/L	9.3 U	9.5 U	3.0 J	9.7 U	9.4 U
bis(2-Ethylhexyl)phthalate	UG/L	4.7 U	4.8 U	4.8 U	4.8 U	4.7 U
Phenol	UG/L	4.7 U	4.8 U	4.8 U	4.8 U	4.7 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	0.076	0.17	0.079	0.088	0.085
Cadmium	MG/L	0.0010 U	0.0016	0.0010 U	0.0023	0.0010 U
Chromium	MG/L	0.043	0.0034 J	0.0066	0.022	0.014
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.0024 J	0.010 U
Iron	MG/L	1.0	8.5	1.3	1.3	0.11
Lead	MG/L	0.0050 U	0.0032 J	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	36.2	21.2	17.1	101	76.6
Manganese	MG/L	0.038	1.4	0.31	0.18	0.026
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.0086 J	0.010 U	0.0033 J	0.051	0.012

Flags assigned during chemistry validation are shown.

MADE BY: *CHP 6/4/16*
 CHECKED BY: *RF 8/8/16*

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-1D	GW-1S	GW-3D	GW-3S	GW-4D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/18/16	05/18/16	05/19/16	05/19/16	05/18/16
Parameter	Units					
Metals						
Silver	MGL	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MGL	94.6	119	158	73.5	78.5
Zinc	MGL	0.0048 J	0.0017 J	0.010 U	0.015	0.0020 J

Flags assigned during chemistry validation are shown.

MADE BY: CRK 6/6/16
 CHECKED BY: PF 8/8/16

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-04S	GW-04S	GW-07D	GW-07D	GW-07S
Sample ID		GW-4S	GW-4S	GW-7D	GW-7D	GW-7S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/18/16	05/18/16	05/18/16	05/19/16	05/18/16
Parameter	Units					
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	1.0 U	NA	1.0 U	NA	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	NA	2.0 U	NA	2.0 U
Acetone	UG/L	3.3 J	NA	10 U	NA	4.4 J
Benzene	UG/L	1.0 U	NA	1.0 U	NA	1.0 U
Vinyl chloride	UG/L	1.0 U	NA	1.0 U	NA	1.0 U
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	NA	9.2 U	NA	9.2 U	NA
1,4-Dichlorobenzene	UG/L	NA	9.2 U	NA	9.2 U	NA
bis(2-Ethylhexyl)phthalate	UG/L	NA	4.6 U	NA	4.6 U	NA
Phenol	UG/L	NA	4.6 U	NA	4.6 U	NA
Metals						
Antimony	MG/L	NA	0.020 U	NA	0.020 U	NA
Arsenic	MG/L	NA	0.010 U	NA	0.010 U	NA
Barium	MG/L	NA	0.12	NA	0.096	NA
Cadmium	MG/L	NA	0.0015	NA	0.0018	NA
Chromium	MG/L	NA	0.0078	NA	0.19	NA
Copper	MG/L	NA	0.0062 J	NA	0.032	NA
Iron	MG/L	NA	2.4	NA	5.8	NA
Lead	MG/L	NA	0.0050 U	NA	0.092	NA
Magnesium	MG/L	NA	28.6	NA	36.4	NA
Manganese	MG/L	NA	0.093	NA	0.070	NA
Mercury	MG/L	NA	0.00020 U	NA	0.00020 U	NA
Nickel	MG/L	NA	0.0081 J	NA	0.091	NA

Flags assigned during chemistry validation are shown.

MADE BY: QMR 6/6/16
 CHECKED BY: PF 8/8/16

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-04S	GW-04S	GW-07D	GW-07D	GW-07S
Sample ID		GW-4S	GW-4S	GW-7D	GW-7D	GW-7S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/18/16	05/18/16	05/18/16	05/19/16	05/18/16
Parameter	Units					
Metals						
Silver	MG/L	NA	0.0030 U	NA	0.0030 U	NA
Sodium	MG/L	NA	36.8	NA	74.6	NA
Zinc	MG/L	NA	0.017	NA	0.056	NA

Flags assigned during chemistry validation are shown.

MADE BY: OKK 6/6/16
 CHECKED BY: PF 8/8/16

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-07S	GW-08D	GW-08SR	GW-26D	GW-26D
Sample ID		GW-7S	GW-8D	GW-8SR	FD-052016	GW-26D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/19/16	05/19/16	05/19/16	05/20/16	05/20/16
Parameter	Units				Field Duplicate (1-1)	
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	NA	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	NA	2.0 U	2.0 U	1.3 J	1.2 J
Acetone	UG/L	NA	10 U	10 U	10 U	10 U
Benzene	UG/L	NA	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	NA	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	9.4 U	9.4 U	9.6 U	9.8 U	10 U
1,4-Dichlorobenzene	UG/L	9.4 U	9.4 U	9.6 U	9.8 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	4.7 U	4.7 U	4.8 U	4.9 U	5.0 U
Phenol	UG/L	4.7 U	4.7 U	4.8 U	4.9 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	0.0099 J	0.0099 J	0.0088 J
Barium	MG/L	0.31	0.076	0.30	0.13	0.12
Cadmium	MG/L	0.0016	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.026	0.029	0.0016 J	0.0046	0.0031 J
Copper	MG/L	0.010 U	0.0025 J	0.010 U	0.010 U	0.010 U
Iron	MG/L	0.45	0.16	22.3	4.5	4.2
Lead	MG/L	0.0050 U	0.0050 U	0.0042 J	0.0050 U	0.0050 U
Magnesium	MG/L	38.6	16.3	45.2	18.6	18.0
Manganese	MG/L	0.089	0.043	1.3	0.47	0.45
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.017	0.0053 J	0.010 U	0.0024 J	0.0024 J

Flags assigned during chemistry validation are shown.

MADE BY: *CHL 6/6/16*
 CHECKED BY: *PF 5/8/16*

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-07S	GW-08D	GW-08SR	GW-26D	GW-26D
Sample ID		GW-7S	GW-8D	GW-8SR	FD-052016	GW-26D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/19/16	05/19/16	05/19/16	05/20/16	05/20/16
Parameter	Units				Field Duplicate (1-1)	
Metals						
Silver	MGL	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MGL	53.8	199	326	295	291
Zinc	MGL	0.0067 J	0.0042 J	0.010 U	0.0016 J	0.0024 J

Flags assigned during chemistry validation are shown.

MADE BY: CHAK 6/6/16
 CHECKED BY: PC 8/8/16

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-28S	GW-29S	GW-30S	GW-31S	GW-32S
Sample ID		GW-28S	GW-29S	GW-30S	GW-31S	GW-32S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/18/16	05/19/16	05/19/16	05/20/16	05/20/16
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	9.5 U	9.7 U	9.7 U	9.7 U	9.6 U
1,4-Dichlorobenzene	UG/L	9.5 U	9.7 U	9.7 U	9.7 U	9.6 U
bis(2-Ethylhexyl)phthalate	UG/L	4.8 U	4.9 U	4.9 U	4.8 U	4.8 U
Phenol	UG/L	4.8 U	4.9 U	4.9 U	4.8 U	4.8 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	0.019	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.077	0.21	0.11	0.074	0.061
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0040 U	0.0040 U	0.0040 U	0.0014 J	0.0040 U
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	0.35	11.3	6.3	0.84	0.019 J
Lead	MG/L	0.0050 U	0.0035 J	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	26.7	84.4	31.5	26.2	34.5
Manganese	MG/L	0.87	0.60	0.78	0.80	0.40
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.0017 J	0.010 U	0.010 U	0.0034 J	0.0015 J

Flags assigned during chemistry validation are shown.

MADE BY: ORL 2/15/16
 CHECKED BY: PC 8/18/16

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-28S	GW-29S	GW-30S	GW-31S	GW-32S
Sample ID		GW-28S	GW-29S	GW-30S	GW-31S	GW-32S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/18/16	05/19/16	05/19/16	05/20/16	05/20/16
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	12.2	10.0	32.9	3.9	3.8
Zinc	MG/L	0.0020 J	0.010 U	0.010 U	0.0086 J	0.0045 J

Flags assigned during chemistry validation are shown.

MADE BY: CHSR 6/6/16
 CHECKED BY: DF 8/8/16

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-33S	GW-34S	GW-35S
Sample ID		GW-33S	GW-34S	GW-35S
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		05/20/16	05/19/16	05/20/16
Parameter	Units			
Volatile Organic Compounds				
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds				
1,3-Dichlorobenzene	UG/L	10 U	9.6 U	9.5 U
1,4-Dichlorobenzene	UG/L	10 U	9.6 U	9.5 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	4.8 U	4.7 U
Phenol	UG/L	5.0 U	4.8 U	4.7 U
Metals				
Antimony	MG/L	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.029	0.12	0.091
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0040 U	0.0018 J	0.0040 U
Copper	MG/L	0.010 U	0.010 U	0.010 U
Iron	MG/L	0.031 J	0.36	0.060
Lead	MG/L	0.0050 U	0.0035 J	0.0050 U
Magnesium	MG/L	30.8	60.4	23.9
Manganese	MG/L	0.13	0.73	0.26
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.0017 J	0.0068 J	0.0019 J

Flags assigned during chemistry validation are shown.

MADE BY: OKH 6/6/16
 CHECKED BY: PE 8/8/16

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-33S	GW-34S	GW-35S
Sample ID		GW-33S	GW-34S	GW-35S
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		05/20/16	05/19/16	05/20/16
Parameter	Units			
Metals				
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	2.9	35.3	2.6
Zinc	MG/L	0.0048 J	0.0021 J	0.0038 J

Flags assigned during chemistry validation are shown.

MADE BY: CHM 6/6/16
 CHECKED BY: RF 8/8/16

Detection Limits shown are PQL

TABLE 2
VALIDATED FIELD QC SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		FIELDQC	FIELDQC
Sample ID		TRIP BLANK	TRIP BLANK
Matrix		Quality Control	Quality Control
Depth Interval (ft)		-	-
Date Sampled		05/19/16	05/20/16
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: CHL 6/9/16
 CHECKED BY: DE 8/8/16

Detection Limits shown are PQL

APPENDIX A

VALIDATED SAMPLE REPORTING FORMS

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-7S

Lab Sample ID: 480-100414-1

Date Collected: 05/18/16 10:26

Matrix: Water

Date Received: 05/19/16 16:20

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			05/22/16 16:02	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 16:02	1
Acetone	4.4	J	10	3.0	ug/L			05/22/16 16:02	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 16:02	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 16:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 137		05/22/16 16:02	1
Toluene-d8 (Surr)	96		71 - 126		05/22/16 16:02	1
4-Bromofluorobenzene (Surr)	110		73 - 120		05/22/16 16:02	1
Dibromofluoromethane (Surr)	100		60 - 140		05/22/16 16:02	1

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Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-7D

Lab Sample ID: 480-100414-2

Date Collected: 05/18/16 09:15

Matrix: Water

Date Received: 05/19/16 16:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/16 16:29	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 16:29	1
Acetone	ND		10	3.0	ug/L			05/22/16 16:29	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 16:29	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 16:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	96		66 - 137		05/22/16 16:29	1
Toluene-d8 (Surr)	93		71 - 126		05/22/16 16:29	1
4-Bromofluorobenzene (Surr)	115		73 - 120		05/22/16 16:29	1
Dibromofluoromethane (Surr)	97		60 - 140		05/22/16 16:29	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-4S

Lab Sample ID: 480-100414-3

Date Collected: 05/18/16 10:50

Matrix: Water

Date Received: 05/19/16 16:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/16 16:55	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 16:55	1
Acetone	3.3	J	10	3.0	ug/L			05/22/16 16:55	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 16:55	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 16:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 137		05/22/16 16:55	1
Toluene-d8 (Surr)	94		71 - 126		05/22/16 16:55	1
4-Bromofluorobenzene (Surr)	111		73 - 120		05/22/16 16:55	1
Dibromofluoromethane (Surr)	95		60 - 140		05/22/16 16:55	1

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-4D

Lab Sample ID: 480-100414-4

Date Collected: 05/18/16 12:26

Matrix: Water

Date Received: 05/19/16 16:20

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			05/22/16 17:22	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 17:22	1
Acetone	ND		10	3.0	ug/L			05/22/16 17:22	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 17:22	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 17:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 137		05/22/16 17:22	1
Toluene-d8 (Surr)	93		71 - 126		05/22/16 17:22	1
4-Bromofluorobenzene (Surr)	109		73 - 120		05/22/16 17:22	1
Dibromofluoromethane (Surr)	94		60 - 140		05/22/16 17:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.4	0.45	ug/L		05/20/16 07:35	05/25/16 15:03	1
1,4-Dichlorobenzene	ND		9.4	0.43	ug/L		05/20/16 07:35	05/25/16 15:03	1
Bis(2-ethylhexyl) phthalate	ND		4.7	2.1	ug/L		05/20/16 07:35	05/25/16 15:03	1
Phenol	ND		4.7	0.37	ug/L		05/20/16 07:35	05/25/16 15:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	88		52 - 132	05/20/16 07:35	05/25/16 15:03	1
2-Fluorobiphenyl	86		48 - 120	05/20/16 07:35	05/25/16 15:03	1
2-Fluorophenol	58		20 - 120	05/20/16 07:35	05/25/16 15:03	1
Nitrobenzene-d5	88		46 - 120	05/20/16 07:35	05/25/16 15:03	1
Phenol-d5	39		16 - 120	05/20/16 07:35	05/25/16 15:03	1
p-Terphenyl-d14	103		67 - 150	05/20/16 07:35	05/25/16 15:03	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 02:35	1
Arsenic	ND		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 02:35	1
Barium	0.085		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 02:35	1
Cadmium	ND		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 02:35	1
Chromium	0.014		0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 02:35	1
Copper	ND		0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 02:35	1
Iron	0.11		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 02:35	1
Lead	ND		0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 02:35	1
Magnesium	76.6		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 02:35	1
Manganese	0.026		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 02:35	1
Nickel	0.012		0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 02:35	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 02:35	1
Sodium	78.5		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 02:35	1
Zinc	0.0020	J	0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 02:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 14:29	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-4S

Lab Sample ID: 480-100414-5

Date Collected: 05/18/16 12:40

Matrix: Water

Date Received: 05/19/16 16:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.2	0.44	ug/L		05/20/16 07:35	05/22/16 03:37	1
1,4-Dichlorobenzene	ND		9.2	0.42	ug/L		05/20/16 07:35	05/22/16 03:37	1
Bis(2-ethylhexyl) phthalate	ND		4.6	2.0	ug/L		05/20/16 07:35	05/22/16 03:37	1
Phenol	ND		4.6	0.36	ug/L		05/20/16 07:35	05/22/16 03:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	74		52 - 132	05/20/16 07:35	05/22/16 03:37	1
2-Fluorobiphenyl	71		48 - 120	05/20/16 07:35	05/22/16 03:37	1
2-Fluorophenol	45		20 - 120	05/20/16 07:35	05/22/16 03:37	1
Nitrobenzene-d5	69		46 - 120	05/20/16 07:35	05/22/16 03:37	1
Phenol-d5	29		16 - 120	05/20/16 07:35	05/22/16 03:37	1
p-Terphenyl-d14	86		67 - 150	05/20/16 07:35	05/22/16 03:37	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 02:48	1
Arsenic	ND		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 02:48	1
Barium	0.12		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 02:48	1
Cadmium	0.0015		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 02:48	1
Chromium	0.0078		0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 02:48	1
Copper	0.0062	J	0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 02:48	1
Iron	2.4		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 02:48	1
Lead	ND		0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 02:48	1
Magnesium	28.6		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 02:48	1
Manganese	0.093		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 02:48	1
Nickel	0.0081	J	0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 02:48	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 02:48	1
Sodium	36.8		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 02:48	1
Zinc	0.017		0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 02:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 14:36	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-1S

Lab Sample ID: 480-100414-6

Date Collected: 05/18/16 14:04

Matrix: Water

Date Received: 05/19/16 16:20

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			05/22/16 17:49	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 17:49	1
Acetone	ND		10	3.0	ug/L			05/22/16 17:49	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 17:49	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 17:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		66 - 137		05/22/16 17:49	1
Toluene-d8 (Surr)	94		71 - 126		05/22/16 17:49	1
4-Bromofluorobenzene (Surr)	112		73 - 120		05/22/16 17:49	1
Dibromofluoromethane (Surr)	92		60 - 140		05/22/16 17:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.5	0.46	ug/L		05/20/16 07:35	05/22/16 04:06	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		05/20/16 07:35	05/22/16 04:06	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		05/20/16 07:35	05/22/16 04:06	1
Phenol	ND		4.8	0.37	ug/L		05/20/16 07:35	05/22/16 04:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	86		52 - 132	05/20/16 07:35	05/22/16 04:06	1
2-Fluorobiphenyl	87		48 - 120	05/20/16 07:35	05/22/16 04:06	1
2-Fluorophenol	52		20 - 120	05/20/16 07:35	05/22/16 04:06	1
Nitrobenzene-d5	83		46 - 120	05/20/16 07:35	05/22/16 04:06	1
Phenol-d5	35		16 - 120	05/20/16 07:35	05/22/16 04:06	1
p-Terphenyl-d14	107		67 - 150	05/20/16 07:35	05/22/16 04:06	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 02:52	1
Arsenic	ND		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 02:52	1
Barium	0.17		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 02:52	1
Cadmium	0.0016		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 02:52	1
Chromium	0.0034	J	0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 02:52	1
Copper	ND		0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 02:52	1
Iron	8.5		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 02:52	1
Lead	0.0032	J	0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 02:52	1
Magnesium	21.2		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 02:52	1
Manganese	1.4		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 02:52	1
Nickel	ND		0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 02:52	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 02:52	1
Sodium	119		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 02:52	1
Zinc	0.0017	J	0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 02:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 14:38	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-1D

Lab Sample ID: 480-100414-7

Date Collected: 05/18/16 15:09

Matrix: Water

Date Received: 05/19/16 16:20

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			05/22/16 18:16	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 18:16	1
Acetone	ND		10	3.0	ug/L			05/22/16 18:16	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 18:16	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 18:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		66 - 137		05/22/16 18:16	1
Toluene-d8 (Surr)	93		71 - 126		05/22/16 18:16	1
4-Bromofluorobenzene (Surr)	112		73 - 120		05/22/16 18:16	1
Dibromofluoromethane (Surr)	98		60 - 140		05/22/16 18:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.3	0.45	ug/L		05/20/16 07:35	05/22/16 04:35	1
1,4-Dichlorobenzene	ND		9.3	0.43	ug/L		05/20/16 07:35	05/22/16 04:35	1
Bis(2-ethylhexyl) phthalate	ND		4.7	2.1	ug/L		05/20/16 07:35	05/22/16 04:35	1
Phenol	ND		4.7	0.36	ug/L		05/20/16 07:35	05/22/16 04:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	64		52 - 132	05/20/16 07:35	05/22/16 04:35	1
2-Fluorobiphenyl	69		48 - 120	05/20/16 07:35	05/22/16 04:35	1
2-Fluorophenol	44		20 - 120	05/20/16 07:35	05/22/16 04:35	1
Nitrobenzene-d5	70		46 - 120	05/20/16 07:35	05/22/16 04:35	1
Phenol-d5	30		16 - 120	05/20/16 07:35	05/22/16 04:35	1
p-Terphenyl-d14	99		67 - 150	05/20/16 07:35	05/22/16 04:35	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 02:55	1
Arsenic	ND		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 02:55	1
Barium	0.076		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 02:55	1
Cadmium	ND		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 02:55	1
Chromium	0.043		0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 02:55	1
Copper	ND		0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 02:55	1
Iron	1.0		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 02:55	1
Lead	ND		0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 02:55	1
Magnesium	36.2		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 02:55	1
Manganese	0.038		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 02:55	1
Nickel	0.0086	J	0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 02:55	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 02:55	1
Sodium	94.6		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 02:55	1
Zinc	0.0048	J	0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 02:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 14:39	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-28S

Lab Sample ID: 480-100414-8

Date Collected: 05/18/16 16:06

Matrix: Water

Date Received: 05/19/16 16:20

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			05/22/16 18:42	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 18:42	1
Acetone	ND		10	3.0	ug/L			05/22/16 18:42	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 18:42	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 18:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		66 - 137		05/22/16 18:42	1
Toluene-d8 (Surr)	95		71 - 126		05/22/16 18:42	1
4-Bromofluorobenzene (Surr)	118		73 - 120		05/22/16 18:42	1
Dibromofluoromethane (Surr)	93		60 - 140		05/22/16 18:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.5	0.46	ug/L		05/20/16 07:35	05/22/16 05:04	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		05/20/16 07:35	05/22/16 05:04	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		05/20/16 07:35	05/22/16 05:04	1
Phenol	ND		4.8	0.37	ug/L		05/20/16 07:35	05/22/16 05:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	71		52 - 132	05/20/16 07:35	05/22/16 05:04	1
2-Fluorobiphenyl	78		48 - 120	05/20/16 07:35	05/22/16 05:04	1
2-Fluorophenol	54		20 - 120	05/20/16 07:35	05/22/16 05:04	1
Nitrobenzene-d5	82		46 - 120	05/20/16 07:35	05/22/16 05:04	1
Phenol-d5	37		16 - 120	05/20/16 07:35	05/22/16 05:04	1
p-Terphenyl-d14	97		67 - 150	05/20/16 07:35	05/22/16 05:04	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 02:59	1
Arsenic	ND		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 02:59	1
Barium	0.077		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 02:59	1
Cadmium	ND		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 02:59	1
Chromium	ND		0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 02:59	1
Copper	ND		0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 02:59	1
Iron	0.35		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 02:59	1
Lead	ND		0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 02:59	1
Magnesium	26.7		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 02:59	1
Manganese	0.87		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 02:59	1
Nickel	0.0017	J	0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 02:59	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 02:59	1
Sodium	12.2		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 02:59	1
Zinc	0.0020	J	0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 02:59	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 14:45	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-7D

Lab Sample ID: 480-100414-9

Date Collected: 05/19/16 07:30

Matrix: Water

Date Received: 05/19/16 16:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.2	0.44	ug/L		05/20/16 07:35	05/22/16 05:33	1
1,4-Dichlorobenzene	ND		9.2	0.42	ug/L		05/20/16 07:35	05/22/16 05:33	1
Bis(2-ethylhexyl) phthalate	ND		4.6	2.0	ug/L		05/20/16 07:35	05/22/16 05:33	1
Phenol	ND		4.6	0.36	ug/L		05/20/16 07:35	05/22/16 05:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	93		52 - 132	05/20/16 07:35	05/22/16 05:33	1
2-Fluorobiphenyl	92		48 - 120	05/20/16 07:35	05/22/16 05:33	1
2-Fluorophenol	61		20 - 120	05/20/16 07:35	05/22/16 05:33	1
Nitrobenzene-d5	94		46 - 120	05/20/16 07:35	05/22/16 05:33	1
Phenol-d5	41		16 - 120	05/20/16 07:35	05/22/16 05:33	1
p-Terphenyl-d14	91		67 - 150	05/20/16 07:35	05/22/16 05:33	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 03:02	1
Arsenic	ND		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 03:02	1
Barium	0.096		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 03:02	1
Cadmium	0.0018		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 03:02	1
Chromium	0.19		0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 03:02	1
Copper	0.032		0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 03:02	1
Iron	5.8		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 03:02	1
Lead	0.092		0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 03:02	1
Magnesium	36.4		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 03:02	1
Manganese	0.070		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 03:02	1
Nickel	0.091		0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 03:02	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 03:02	1
Sodium	74.6		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 03:02	1
Zinc	0.056		0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 03:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 14:47	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-7S

Lab Sample ID: 480-100414-10

Date Collected: 05/19/16 07:35

Matrix: Water

Date Received: 05/19/16 16:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.4	0.45	ug/L		05/20/16 07:35	05/22/16 06:01	1
1,4-Dichlorobenzene	ND		9.4	0.43	ug/L		05/20/16 07:35	05/22/16 06:01	1
Bis(2-ethylhexyl) phthalate	ND		4.7	2.1	ug/L		05/20/16 07:35	05/22/16 06:01	1
Phenol	ND		4.7	0.37	ug/L		05/20/16 07:35	05/22/16 06:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	87		52 - 132	05/20/16 07:35	05/22/16 06:01	1
2-Fluorobiphenyl	90		48 - 120	05/20/16 07:35	05/22/16 06:01	1
2-Fluorophenol	61		20 - 120	05/20/16 07:35	05/22/16 06:01	1
Nitrobenzene-d5	93		46 - 120	05/20/16 07:35	05/22/16 06:01	1
Phenol-d5	40		16 - 120	05/20/16 07:35	05/22/16 06:01	1
p-Terphenyl-d14	96		67 - 150	05/20/16 07:35	05/22/16 06:01	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 03:05	1
Arsenic	ND		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 03:05	1
Barium	0.31		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 03:05	1
Cadmium	0.0016		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 03:05	1
Chromium	0.026		0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 03:05	1
Copper	ND		0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 03:05	1
Iron	0.45		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 03:05	1
Lead	ND		0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 03:05	1
Magnesium	38.6		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 03:05	1
Manganese	0.089		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 03:05	1
Nickel	0.017		0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 03:05	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 03:05	1
Sodium	53.8		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 03:05	1
Zinc	0.0067	J	0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 03:05	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 14:49	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-34S

Lab Sample ID: 480-100414-11

Date Collected: 05/19/16 08:45

Matrix: Water

Date Received: 05/19/16 16:20

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			05/22/16 19:09	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 19:09	1
Acetone	ND		10	3.0	ug/L			05/22/16 19:09	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 19:09	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 19:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		66 - 137		05/22/16 19:09	1
Toluene-d8 (Surr)	94		71 - 126		05/22/16 19:09	1
4-Bromofluorobenzene (Surr)	111		73 - 120		05/22/16 19:09	1
Dibromofluoromethane (Surr)	94		60 - 140		05/22/16 19:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.6	0.46	ug/L		05/20/16 07:35	05/22/16 06:31	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		05/20/16 07:35	05/22/16 06:31	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		05/20/16 07:35	05/22/16 06:31	1
Phenol	ND		4.8	0.37	ug/L		05/20/16 07:35	05/22/16 06:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	76		52 - 132	05/20/16 07:35	05/22/16 06:31	1
2-Fluorobiphenyl	93		48 - 120	05/20/16 07:35	05/22/16 06:31	1
2-Fluorophenol	54		20 - 120	05/20/16 07:35	05/22/16 06:31	1
Nitrobenzene-d5	95		46 - 120	05/20/16 07:35	05/22/16 06:31	1
Phenol-d5	38		16 - 120	05/20/16 07:35	05/22/16 06:31	1
p-Terphenyl-d14	96		67 - 150	05/20/16 07:35	05/22/16 06:31	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 03:09	1
Arsenic	ND		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 03:09	1
Barium	0.12		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 03:09	1
Cadmium	ND		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 03:09	1
Chromium	0.0018	J	0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 03:09	1
Copper	ND		0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 03:09	1
Iron	0.36		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 03:09	1
Lead	0.0035	J	0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 03:09	1
Magnesium	60.4		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 03:09	1
Manganese	0.73		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 03:09	1
Nickel	0.0068	J	0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 03:09	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 03:09	1
Sodium	35.3		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 03:09	1
Zinc	0.0021	J	0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 03:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 14:51	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-8SR

Lab Sample ID: 480-100414-12

Date Collected: 05/19/16 13:25

Matrix: Water

Date Received: 05/19/16 16:20

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			05/22/16 19:36	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 19:36	1
Acetone	ND		10	3.0	ug/L			05/22/16 19:36	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 19:36	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 19:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		66 - 137		05/22/16 19:36	1
Toluene-d8 (Surr)	96		71 - 126		05/22/16 19:36	1
4-Bromofluorobenzene (Surr)	115		73 - 120		05/22/16 19:36	1
Dibromofluoromethane (Surr)	92		60 - 140		05/22/16 19:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.6	0.46	ug/L		05/20/16 07:35	05/22/16 07:00	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		05/20/16 07:35	05/22/16 07:00	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		05/20/16 07:35	05/22/16 07:00	1
Phenol	ND		4.8	0.37	ug/L		05/20/16 07:35	05/22/16 07:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	93		52 - 132	05/20/16 07:35	05/22/16 07:00	1
2-Fluorobiphenyl	91		48 - 120	05/20/16 07:35	05/22/16 07:00	1
2-Fluorophenol	62		20 - 120	05/20/16 07:35	05/22/16 07:00	1
Nitrobenzene-d5	92		46 - 120	05/20/16 07:35	05/22/16 07:00	1
Phenol-d5	40		16 - 120	05/20/16 07:35	05/22/16 07:00	1
p-Terphenyl-d14	93		67 - 150	05/20/16 07:35	05/22/16 07:00	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 03:12	1
Arsenic	0.0099	J	0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 03:12	1
Barium	0.30		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 03:12	1
Cadmium	ND		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 03:12	1
Chromium	0.0016	J	0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 03:12	1
Copper	ND		0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 03:12	1
Iron	22.3		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 03:12	1
Lead	0.0042	J	0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 03:12	1
Magnesium	45.2		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 03:12	1
Manganese	1.3		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 03:12	1
Nickel	ND		0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 03:12	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 03:12	1
Sodium	326		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 03:12	1
Zinc	ND		0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 03:12	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 14:53	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-8D

Lab Sample ID: 480-100414-13

Date Collected: 05/19/16 12:40

Matrix: Water

Date Received: 05/19/16 16:20

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			05/22/16 20:03	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 20:03	1
Acetone	ND		10	3.0	ug/L			05/22/16 20:03	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 20:03	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 20:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		66 - 137		05/22/16 20:03	1
Toluene-d8 (Surr)	95		71 - 126		05/22/16 20:03	1
4-Bromofluorobenzene (Surr)	111		73 - 120		05/22/16 20:03	1
Dibromofluoromethane (Surr)	94		60 - 140		05/22/16 20:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.4	0.45	ug/L		05/20/16 07:35	05/22/16 07:29	1
1,4-Dichlorobenzene	ND		9.4	0.43	ug/L		05/20/16 07:35	05/22/16 07:29	1
Bis(2-ethylhexyl) phthalate	ND		4.7	2.1	ug/L		05/20/16 07:35	05/22/16 07:29	1
Phenol	ND		4.7	0.37	ug/L		05/20/16 07:35	05/22/16 07:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	87		52 - 132	05/20/16 07:35	05/22/16 07:29	1
2-Fluorobiphenyl	90		48 - 120	05/20/16 07:35	05/22/16 07:29	1
2-Fluorophenol	58		20 - 120	05/20/16 07:35	05/22/16 07:29	1
Nitrobenzene-d5	91		46 - 120	05/20/16 07:35	05/22/16 07:29	1
Phenol-d5	38		16 - 120	05/20/16 07:35	05/22/16 07:29	1
p-Terphenyl-d14	102		67 - 150	05/20/16 07:35	05/22/16 07:29	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 03:16	1
Arsenic	ND		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 03:16	1
Barium	0.076		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 03:16	1
Cadmium	ND		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 03:16	1
Chromium	0.029		0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 03:16	1
Copper	0.0025	J	0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 03:16	1
Iron	0.16		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 03:16	1
Lead	ND		0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 03:16	1
Magnesium	16.3		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 03:16	1
Manganese	0.043		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 03:16	1
Nickel	0.0053	J	0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 03:16	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 03:16	1
Sodium	199		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 03:16	1
Zinc	0.0042	J	0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 03:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 14:55	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-3S

Date Collected: 05/19/16 09:52

Date Received: 05/19/16 16:20

Lab Sample ID: 480-100414-14

Matrix: Water

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			05/22/16 20:30	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 20:30	1
Acetone	ND		10	3.0	ug/L			05/22/16 20:30	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 20:30	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 20:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		66 - 137		05/22/16 20:30	1
Toluene-d8 (Surr)	95		71 - 126		05/22/16 20:30	1
4-Bromofluorobenzene (Surr)	116		73 - 120		05/22/16 20:30	1
Dibromofluoromethane (Surr)	95		60 - 140		05/22/16 20:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.7	0.46	ug/L		05/20/16 07:35	05/22/16 07:58	1
1,4-Dichlorobenzene	ND		9.7	0.44	ug/L		05/20/16 07:35	05/22/16 07:58	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		05/20/16 07:35	05/22/16 07:58	1
Phenol	ND		4.8	0.38	ug/L		05/20/16 07:35	05/22/16 07:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		52 - 132	05/20/16 07:35	05/22/16 07:58	1
2-Fluorobiphenyl	90		48 - 120	05/20/16 07:35	05/22/16 07:58	1
2-Fluorophenol	56		20 - 120	05/20/16 07:35	05/22/16 07:58	1
Nitrobenzene-d5	88		46 - 120	05/20/16 07:35	05/22/16 07:58	1
Phenol-d5	37		16 - 120	05/20/16 07:35	05/22/16 07:58	1
p-Terphenyl-d14	107		67 - 150	05/20/16 07:35	05/22/16 07:58	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 03:30	1
Arsenic	ND		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 03:30	1
Barium	0.088		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 03:30	1
Cadmium	0.0023		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 03:30	1
Chromium	0.022		0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 03:30	1
Copper	0.0024	J	0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 03:30	1
Iron	1.3		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 03:30	1
Lead	ND		0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 03:30	1
Magnesium	101		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 03:30	1
Manganese	0.18		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 03:30	1
Nickel	0.051		0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 03:30	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 03:30	1
Sodium	73.5		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 03:30	1
Zinc	0.015		0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 03:30	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 14:57	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-3D

Lab Sample ID: 480-100414-15

Date Collected: 05/19/16 11:05

Matrix: Water

Date Received: 05/19/16 16:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/16 20:56	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 20:56	1
Acetone	ND		10	3.0	ug/L			05/22/16 20:56	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 20:56	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 20:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	93		66 - 137		05/22/16 20:56	1
Toluene-d8 (Surr)	94		71 - 126		05/22/16 20:56	1
4-Bromofluorobenzene (Surr)	116		73 - 120		05/22/16 20:56	1
Dibromofluoromethane (Surr)	92		60 - 140		05/22/16 20:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	2.1	J	9.7	0.46	ug/L		05/20/16 07:35	05/22/16 08:27	1
1,4-Dichlorobenzene	3.0	J	9.7	0.45	ug/L		05/20/16 07:35	05/22/16 08:27	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		05/20/16 07:35	05/22/16 08:27	1
Phenol	ND		4.8	0.38	ug/L		05/20/16 07:35	05/22/16 08:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	92		52 - 132	05/20/16 07:35	05/22/16 08:27	1
2-Fluorobiphenyl	95		48 - 120	05/20/16 07:35	05/22/16 08:27	1
2-Fluorophenol	61		20 - 120	05/20/16 07:35	05/22/16 08:27	1
Nitrobenzene-d5	93		46 - 120	05/20/16 07:35	05/22/16 08:27	1
Phenol-d5	41		16 - 120	05/20/16 07:35	05/22/16 08:27	1
p-Terphenyl-d14	107		67 - 150	05/20/16 07:35	05/22/16 08:27	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 03:33	1
Arsenic	ND		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 03:33	1
Barium	0.079		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 03:33	1
Cadmium	ND		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 03:33	1
Chromium	0.0066		0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 03:33	1
Copper	ND		0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 03:33	1
Iron	1.3		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 03:33	1
Lead	ND		0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 03:33	1
Magnesium	17.1		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 03:33	1
Manganese	0.31		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 03:33	1
Nickel	0.0033	J	0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 03:33	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 03:33	1
Sodium	158		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 03:33	1
Zinc	ND		0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 03:33	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 14:58	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-29S

Lab Sample ID: 480-100414-16

Date Collected: 05/19/16 14:35

Matrix: Water

Date Received: 05/19/16 16:20

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			05/22/16 21:23	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 21:23	1
Acetone	ND		10	3.0	ug/L			05/22/16 21:23	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 21:23	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 21:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		66 - 137		05/22/16 21:23	1
Toluene-d8 (Surr)	91		71 - 126		05/22/16 21:23	1
4-Bromofluorobenzene (Surr)	112		73 - 120		05/22/16 21:23	1
Dibromofluoromethane (Surr)	94		60 - 140		05/22/16 21:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.7	0.47	ug/L		05/20/16 07:35	05/22/16 08:56	1
1,4-Dichlorobenzene	ND		9.7	0.45	ug/L		05/20/16 07:35	05/22/16 08:56	1
Bis(2-ethylhexyl) phthalate	ND		4.9	2.1	ug/L		05/20/16 07:35	05/22/16 08:56	1
Phenol	ND		4.9	0.38	ug/L		05/20/16 07:35	05/22/16 08:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	85		52 - 132	05/20/16 07:35	05/22/16 08:56	1
2-Fluorobiphenyl	83		48 - 120	05/20/16 07:35	05/22/16 08:56	1
2-Fluorophenol	55		20 - 120	05/20/16 07:35	05/22/16 08:56	1
Nitrobenzene-d5	82		46 - 120	05/20/16 07:35	05/22/16 08:56	1
Phenol-d5	37		16 - 120	05/20/16 07:35	05/22/16 08:56	1
p-Terphenyl-d14	93		67 - 150	05/20/16 07:35	05/22/16 08:56	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 03:50	1
Arsenic	0.019		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 03:50	1
Barium	0.21		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 03:50	1
Cadmium	ND		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 03:50	1
Chromium	ND		0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 03:50	1
Copper	ND		0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 03:50	1
Iron	11.3		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 03:50	1
Lead	0.0035	J	0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 03:50	1
Magnesium	84.4		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 03:50	1
Manganese	0.60		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 03:50	1
Nickel	ND		0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 03:50	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 03:50	1
Sodium	10.0		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 03:50	1
Zinc	ND		0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 03:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 15:08	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: GW-30S

Date Collected: 05/19/16 15:25

Date Received: 05/19/16 16:20

Lab Sample ID: 480-100414-17

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/22/16 21:49	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/22/16 21:49	1
Acetone	ND		10	3.0	ug/L			05/22/16 21:49	1
Benzene	ND		1.0	0.41	ug/L			05/22/16 21:49	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/22/16 21:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	91		66 - 137		05/22/16 21:49	1
Toluene-d8 (Surr)	93		71 - 126		05/22/16 21:49	1
4-Bromofluorobenzene (Surr)	109		73 - 120		05/22/16 21:49	1
Dibromofluoromethane (Surr)	93		60 - 140		05/22/16 21:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.7	0.47	ug/L		05/20/16 07:35	05/22/16 09:25	1
1,4-Dichlorobenzene	ND		9.7	0.45	ug/L		05/20/16 07:35	05/22/16 09:25	1
Bis(2-ethylhexyl) phthalate	ND		4.9	2.1	ug/L		05/20/16 07:35	05/22/16 09:25	1
Phenol	ND		4.9	0.38	ug/L		05/20/16 07:35	05/22/16 09:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	79		52 - 132	05/20/16 07:35	05/22/16 09:25	1
2-Fluorobiphenyl	86		48 - 120	05/20/16 07:35	05/22/16 09:25	1
2-Fluorophenol	58		20 - 120	05/20/16 07:35	05/22/16 09:25	1
Nitrobenzene-d5	86		46 - 120	05/20/16 07:35	05/22/16 09:25	1
Phenol-d5	39		16 - 120	05/20/16 07:35	05/22/16 09:25	1
p-Terphenyl-d14	95		67 - 150	05/20/16 07:35	05/22/16 09:25	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		05/20/16 09:00	05/24/16 03:54	1
Arsenic	ND		0.010	0.0056	mg/L		05/20/16 09:00	05/24/16 03:54	1
Barium	0.11		0.0020	0.00070	mg/L		05/20/16 09:00	05/24/16 03:54	1
Cadmium	ND		0.0010	0.00050	mg/L		05/20/16 09:00	05/24/16 03:54	1
Chromium	ND		0.0040	0.0010	mg/L		05/20/16 09:00	05/24/16 03:54	1
Copper	ND		0.010	0.0016	mg/L		05/20/16 09:00	05/24/16 03:54	1
Iron	6.3		0.050	0.019	mg/L		05/20/16 09:00	05/24/16 03:54	1
Lead	ND		0.0050	0.0030	mg/L		05/20/16 09:00	05/24/16 03:54	1
Magnesium	31.5		0.20	0.043	mg/L		05/20/16 09:00	05/24/16 03:54	1
Manganese	0.78		0.0030	0.00040	mg/L		05/20/16 09:00	05/24/16 03:54	1
Nickel	ND		0.010	0.0013	mg/L		05/20/16 09:00	05/24/16 03:54	1
Silver	ND		0.0030	0.0017	mg/L		05/20/16 09:00	05/24/16 03:54	1
Sodium	32.9		1.0	0.32	mg/L		05/20/16 09:00	05/24/16 03:54	1
Zinc	ND		0.010	0.0015	mg/L		05/20/16 09:00	05/24/16 03:54	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		05/23/16 12:00	05/23/16 15:09	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 480-100414-18

Date Collected: 05/19/16 00:00

Matrix: Water

Date Received: 05/19/16 16:20

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

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	92		66 - 137		05/22/16 22:16	1
Toluene-d8 (Surr)	93		71 - 126		05/22/16 22:16	1
4-Bromofluorobenzene (Surr)	117		73 - 120		05/22/16 22:16	1
Dibromofluoromethane (Surr)	92		60 - 140		05/22/16 22:16	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100475-1

Client Sample ID: GW-31S

Lab Sample ID: 480-100475-1

Date Collected: 05/20/16 07:55

Matrix: Water

Date Received: 05/20/16 12:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/24/16 17:39	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/24/16 17:39	1
Acetone	ND		10	3.0	ug/L			05/24/16 17:39	1
Benzene	ND		1.0	0.41	ug/L			05/24/16 17:39	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/24/16 17:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	105		66 - 137		05/24/16 17:39	1
Toluene-d8 (Surr)	99		71 - 126		05/24/16 17:39	1
4-Bromofluorobenzene (Surr)	107		73 - 120		05/24/16 17:39	1
Dibromofluoromethane (Surr)	100		60 - 140		05/24/16 17:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.7	0.46	ug/L		05/21/16 08:50	05/23/16 16:12	1
1,4-Dichlorobenzene	ND		9.7	0.44	ug/L		05/21/16 08:50	05/23/16 16:12	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		05/21/16 08:50	05/23/16 16:12	1
Phenol	ND		4.8	0.38	ug/L		05/21/16 08:50	05/23/16 16:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	100		52 - 132	05/21/16 08:50	05/23/16 16:12	1
2-Fluorobiphenyl	67		48 - 120	05/21/16 08:50	05/23/16 16:12	1
2-Fluorophenol	40		20 - 120	05/21/16 08:50	05/23/16 16:12	1
Nitrobenzene-d5	64		46 - 120	05/21/16 08:50	05/23/16 16:12	1
Phenol-d5	28		16 - 120	05/21/16 08:50	05/23/16 16:12	1
p-Terphenyl-d14	81		67 - 150	05/21/16 08:50	05/23/16 16:12	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/16 07:35	05/27/16 18:54	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/16 07:35	05/27/16 18:54	1
Barium	0.074		0.0020	0.00070	mg/L		05/27/16 07:35	05/27/16 18:54	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/16 07:35	05/27/16 18:54	1
Chromium	0.0014	J	0.0040	0.0010	mg/L		05/27/16 07:35	05/27/16 18:54	1
Copper	ND		0.010	0.0016	mg/L		05/27/16 07:35	05/27/16 18:54	1
Iron	0.84		0.050	0.019	mg/L		05/27/16 07:35	05/27/16 18:54	1
Lead	ND		0.0050	0.0030	mg/L		05/27/16 07:35	05/27/16 18:54	1
Magnesium	26.2		0.20	0.043	mg/L		05/27/16 07:35	05/27/16 18:54	1
Manganese	0.80	B	0.0030	0.00040	mg/L		05/27/16 07:35	05/27/16 18:54	1
Nickel	0.0034	J	0.010	0.0013	mg/L		05/27/16 07:35	05/27/16 18:54	1
Silver	ND		0.0030	0.0017	mg/L		05/27/16 07:35	05/27/16 18:54	1
Sodium	3.9		1.0	0.32	mg/L		05/27/16 07:35	05/27/16 18:54	1
Zinc	0.0086	J	0.010	0.0015	mg/L		05/27/16 07:35	05/27/16 18:54	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		05/24/16 08:30	05/24/16 12:34	1

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6/6/16 TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100475-1

Client Sample ID: GW-32S

Lab Sample ID: 480-100475-2

Date Collected: 05/20/16 08:45

Matrix: Water

Date Received: 05/20/16 12:20

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			05/24/16 18:05	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/24/16 18:05	1
Acetone	ND		10	3.0	ug/L			05/24/16 18:05	1
Benzene	ND		1.0	0.41	ug/L			05/24/16 18:05	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/24/16 18:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		66 - 137		05/24/16 18:05	1
Toluene-d8 (Surr)	99		71 - 126		05/24/16 18:05	1
4-Bromofluorobenzene (Surr)	105		73 - 120		05/24/16 18:05	1
Dibromofluoromethane (Surr)	100		60 - 140		05/24/16 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		9.6	0.46	ug/L		05/21/16 08:50	05/23/16 16:41	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		05/21/16 08:50	05/23/16 16:41	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		05/21/16 08:50	05/23/16 16:41	1
Phenol	ND		4.8	0.37	ug/L		05/21/16 08:50	05/23/16 16:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	99		52 - 132	05/21/16 08:50	05/23/16 16:41	1
2-Fluorobiphenyl	79		48 - 120	05/21/16 08:50	05/23/16 16:41	1
2-Fluorophenol	42		20 - 120	05/21/16 08:50	05/23/16 16:41	1
Nitrobenzene-d5	74		46 - 120	05/21/16 08:50	05/23/16 16:41	1
Phenol-d5	31		16 - 120	05/21/16 08:50	05/23/16 16:41	1
p-Terphenyl-d14	84		67 - 150	05/21/16 08:50	05/23/16 16:41	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/16 07:35	05/27/16 19:21	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/16 07:35	05/27/16 19:21	1
Barium	0.061		0.0020	0.00070	mg/L		05/27/16 07:35	05/27/16 19:21	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/16 07:35	05/27/16 19:21	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/16 07:35	05/27/16 19:21	1
Copper	ND		0.010	0.0016	mg/L		05/27/16 07:35	05/27/16 19:21	1
Iron	0.019	J	0.050	0.019	mg/L		05/27/16 07:35	05/27/16 19:21	1
Lead	ND		0.0050	0.0030	mg/L		05/27/16 07:35	05/27/16 19:21	1
Magnesium	34.5		0.20	0.043	mg/L		05/27/16 07:35	05/27/16 19:21	1
Manganese	0.40	B	0.0030	0.00040	mg/L		05/27/16 07:35	05/27/16 19:21	1
Nickel	0.0015	J	0.010	0.0013	mg/L		05/27/16 07:35	05/27/16 19:21	1
Silver	ND		0.0030	0.0017	mg/L		05/27/16 07:35	05/27/16 19:21	1
Sodium	3.8		1.0	0.32	mg/L		05/27/16 07:35	05/27/16 19:21	1
Zinc	0.0045	J	0.010	0.0015	mg/L		05/27/16 07:35	05/27/16 19:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/24/16 08:30	05/24/16 12:36	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100475-1

Client Sample ID: GW-35S

Lab Sample ID: 480-100475-3

Date Collected: 05/20/16 09:31

Matrix: Water

Date Received: 05/20/16 12:20

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			05/24/16 18:32	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/24/16 18:32	1
Acetone	ND		10	3.0	ug/L			05/24/16 18:32	1
Benzene	ND		1.0	0.41	ug/L			05/24/16 18:32	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/24/16 18:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		66 - 137		05/24/16 18:32	1
Toluene-d8 (Surr)	101		71 - 126		05/24/16 18:32	1
4-Bromofluorobenzene (Surr)	109		73 - 120		05/24/16 18:32	1
Dibromofluoromethane (Surr)	100		60 - 140		05/24/16 18:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.5	0.45	ug/L		05/21/16 08:50	05/23/16 17:11	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		05/21/16 08:50	05/23/16 17:11	1
Bis(2-ethylhexyl) phthalate	ND		4.7	2.1	ug/L		05/21/16 08:50	05/23/16 17:11	1
Phenol	ND		4.7	0.37	ug/L		05/21/16 08:50	05/23/16 17:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	71		52 - 132	05/21/16 08:50	05/23/16 17:11	1
2-Fluorobiphenyl	57		48 - 120	05/21/16 08:50	05/23/16 17:11	1
2-Fluorophenol	30		20 - 120	05/21/16 08:50	05/23/16 17:11	1
Nitrobenzene-d5	53		46 - 120	05/21/16 08:50	05/23/16 17:11	1
Phenol-d5	23		16 - 120	05/21/16 08:50	05/23/16 17:11	1
p-Terphenyl-d14	66	X	67 - 150	05/21/16 08:50	05/23/16 17:11	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/16 07:35	05/27/16 19:24	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/16 07:35	05/27/16 19:24	1
Barium	0.091		0.0020	0.00070	mg/L		05/27/16 07:35	05/27/16 19:24	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/16 07:35	05/27/16 19:24	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/16 07:35	05/27/16 19:24	1
Copper	ND		0.010	0.0016	mg/L		05/27/16 07:35	05/27/16 19:24	1
Iron	0.060		0.050	0.019	mg/L		05/27/16 07:35	05/27/16 19:24	1
Lead	ND		0.0050	0.0030	mg/L		05/27/16 07:35	05/27/16 19:24	1
Magnesium	23.9		0.20	0.043	mg/L		05/27/16 07:35	05/27/16 19:24	1
Manganese	0.26	B	0.0030	0.00040	mg/L		05/27/16 07:35	05/27/16 19:24	1
Nickel	0.0019	J	0.010	0.0013	mg/L		05/27/16 07:35	05/27/16 19:24	1
Silver	ND		0.0030	0.0017	mg/L		05/27/16 07:35	05/27/16 19:24	1
Sodium	2.6		1.0	0.32	mg/L		05/27/16 07:35	05/27/16 19:24	1
Zinc	0.0038	J	0.010	0.0015	mg/L		05/27/16 07:35	05/27/16 19:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/24/16 08:30	05/24/16 12:38	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100475-1

Client Sample ID: GW-26D

Lab Sample ID: 480-100475-4

Date Collected: 05/20/16 10:40

Matrix: Water

Date Received: 05/20/16 12:20

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			05/24/16 18:59	1
1,2-Dichloroethene, Total	1.2	J	2.0	0.81	ug/L			05/24/16 18:59	1
Acetone	ND		10	3.0	ug/L			05/24/16 18:59	1
Benzene	ND		1.0	0.41	ug/L			05/24/16 18:59	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/24/16 18:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		66 - 137		05/24/16 18:59	1
Toluene-d8 (Surr)	101		71 - 126		05/24/16 18:59	1
4-Bromofluorobenzene (Surr)	106		73 - 120		05/24/16 18:59	1
Dibromofluoromethane (Surr)	102		60 - 140		05/24/16 18:59	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		05/21/16 08:50	05/23/16 17:40	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/21/16 08:50	05/23/16 17:40	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/21/16 08:50	05/23/16 17:40	1
Phenol	ND		5.0	0.39	ug/L		05/21/16 08:50	05/23/16 17:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	98		52 - 132	05/21/16 08:50	05/23/16 17:40	1
2-Fluorobiphenyl	68		48 - 120	05/21/16 08:50	05/23/16 17:40	1
2-Fluorophenol	41		20 - 120	05/21/16 08:50	05/23/16 17:40	1
Nitrobenzene-d5	63		46 - 120	05/21/16 08:50	05/23/16 17:40	1
Phenol-d5	29		16 - 120	05/21/16 08:50	05/23/16 17:40	1
p-Terphenyl-d14	75		67 - 150	05/21/16 08:50	05/23/16 17:40	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/16 07:35	05/27/16 19:27	1
Arsenic	0.0088	J	0.010	0.0056	mg/L		05/27/16 07:35	05/27/16 19:27	1
Barium	0.12		0.0020	0.00070	mg/L		05/27/16 07:35	05/27/16 19:27	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/16 07:35	05/27/16 19:27	1
Chromium	0.0031	J	0.0040	0.0010	mg/L		05/27/16 07:35	05/27/16 19:27	1
Copper	ND		0.010	0.0016	mg/L		05/27/16 07:35	05/27/16 19:27	1
Iron	4.2		0.050	0.019	mg/L		05/27/16 07:35	05/27/16 19:27	1
Lead	ND		0.0050	0.0030	mg/L		05/27/16 07:35	05/27/16 19:27	1
Magnesium	18.0		0.20	0.043	mg/L		05/27/16 07:35	05/27/16 19:27	1
Manganese	0.45	J	0.0030	0.00040	mg/L		05/27/16 07:35	05/27/16 19:27	1
Nickel	0.0024	J	0.010	0.0013	mg/L		05/27/16 07:35	05/27/16 19:27	1
Silver	ND		0.0030	0.0017	mg/L		05/27/16 07:35	05/27/16 19:27	1
Sodium	291		1.0	0.32	mg/L		05/27/16 07:35	05/27/16 19:27	1
Zinc	0.0024	J	0.010	0.0015	mg/L		05/27/16 07:35	05/27/16 19:27	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/24/16 08:30	05/24/16 12:40	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100475-1

Client Sample ID: GW-33S

Lab Sample ID: 480-100475-5

Date Collected: 05/20/16 11:30

Matrix: Water

Date Received: 05/20/16 12:20

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			05/24/16 19:26	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/24/16 19:26	1
Acetone	ND		10	3.0	ug/L			05/24/16 19:26	1
Benzene	ND		1.0	0.41	ug/L			05/24/16 19:26	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/24/16 19:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		66 - 137		05/24/16 19:26	1
Toluene-d8 (Surr)	98		71 - 126		05/24/16 19:26	1
4-Bromofluorobenzene (Surr)	104		73 - 120		05/24/16 19:26	1
Dibromofluoromethane (Surr)	108		60 - 140		05/24/16 19:26	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		05/21/16 08:50	05/23/16 18:10	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/21/16 08:50	05/23/16 18:10	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/21/16 08:50	05/23/16 18:10	1
Phenol	ND		5.0	0.39	ug/L		05/21/16 08:50	05/23/16 18:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	103		52 - 132	05/21/16 08:50	05/23/16 18:10	1
2-Fluorobiphenyl	79		48 - 120	05/21/16 08:50	05/23/16 18:10	1
2-Fluorophenol	45		20 - 120	05/21/16 08:50	05/23/16 18:10	1
Nitrobenzene-d5	77		46 - 120	05/21/16 08:50	05/23/16 18:10	1
Phenol-d5	34		16 - 120	05/21/16 08:50	05/23/16 18:10	1
p-Terphenyl-d14	89		67 - 150	05/21/16 08:50	05/23/16 18:10	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/16 07:35	05/27/16 19:31	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/16 07:35	05/27/16 19:31	1
Barium	0.029		0.0020	0.00070	mg/L		05/27/16 07:35	05/27/16 19:31	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/16 07:35	05/27/16 19:31	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/16 07:35	05/27/16 19:31	1
Copper	ND		0.010	0.0016	mg/L		05/27/16 07:35	05/27/16 19:31	1
Iron	0.031	J	0.050	0.019	mg/L		05/27/16 07:35	05/27/16 19:31	1
Lead	ND		0.0050	0.0030	mg/L		05/27/16 07:35	05/27/16 19:31	1
Magnesium	30.8		0.20	0.043	mg/L		05/27/16 07:35	05/27/16 19:31	1
Manganese	0.13	B	0.0030	0.00040	mg/L		05/27/16 07:35	05/27/16 19:31	1
Nickel	0.0017	J	0.010	0.0013	mg/L		05/27/16 07:35	05/27/16 19:31	1
Silver	ND		0.0030	0.0017	mg/L		05/27/16 07:35	05/27/16 19:31	1
Sodium	2.9		1.0	0.32	mg/L		05/27/16 07:35	05/27/16 19:31	1
Zinc	0.0048	J	0.010	0.0015	mg/L		05/27/16 07:35	05/27/16 19:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/24/16 08:30	05/24/16 12:42	1

OK
6/6/16

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100475-1

Client Sample ID: FD-052016

GW-026D

Lab Sample ID: 480-100475-6

Date Collected: 05/20/16 00:00

Matrix: Water

Date Received: 05/20/16 12:20

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			05/24/16 19:53	1
1,2-Dichloroethene, Total	1.3	J	2.0	0.81	ug/L			05/24/16 19:53	1
Acetone	ND		10	3.0	ug/L			05/24/16 19:53	1
Benzene	ND		1.0	0.41	ug/L			05/24/16 19:53	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/24/16 19:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		66 - 137		05/24/16 19:53	1
Toluene-d8 (Surr)	98		71 - 126		05/24/16 19:53	1
4-Bromofluorobenzene (Surr)	105		73 - 120		05/24/16 19:53	1
Dibromofluoromethane (Surr)	99		60 - 140		05/24/16 19:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.8	0.47	ug/L		05/21/16 08:50	05/23/16 18:40	1
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		05/21/16 08:50	05/23/16 18:40	1
Bis(2-ethylhexyl) phthalate	ND		4.9	2.2	ug/L		05/21/16 08:50	05/23/16 18:40	1
Phenol	ND		4.9	0.38	ug/L		05/21/16 08:50	05/23/16 18:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	111		52 - 132	05/21/16 08:50	05/23/16 18:40	1
2-Fluorobiphenyl	79		48 - 120	05/21/16 08:50	05/23/16 18:40	1
2-Fluorophenol	48		20 - 120	05/21/16 08:50	05/23/16 18:40	1
Nitrobenzene-d5	73		46 - 120	05/21/16 08:50	05/23/16 18:40	1
Phenol-d5	34		16 - 120	05/21/16 08:50	05/23/16 18:40	1
p-Terphenyl-d14	81		67 - 150	05/21/16 08:50	05/23/16 18:40	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/16 07:35	05/27/16 19:34	1
Arsenic	0.0099	J	0.010	0.0056	mg/L		05/27/16 07:35	05/27/16 19:34	1
Barium	0.13		0.0020	0.00070	mg/L		05/27/16 07:35	05/27/16 19:34	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/16 07:35	05/27/16 19:34	1
Chromium	0.0046		0.0040	0.0010	mg/L		05/27/16 07:35	05/27/16 19:34	1
Copper	ND		0.010	0.0016	mg/L		05/27/16 07:35	05/27/16 19:34	1
Iron	4.5		0.050	0.019	mg/L		05/27/16 07:35	05/27/16 19:34	1
Lead	ND		0.0050	0.0030	mg/L		05/27/16 07:35	05/27/16 19:34	1
Magnesium	18.6		0.20	0.043	mg/L		05/27/16 07:35	05/27/16 19:34	1
Manganese	0.47	B	0.0030	0.00040	mg/L		05/27/16 07:35	05/27/16 19:34	1
Nickel	0.0024	J	0.010	0.0013	mg/L		05/27/16 07:35	05/27/16 19:34	1
Silver	ND		0.0030	0.0017	mg/L		05/27/16 07:35	05/27/16 19:34	1
Sodium	295		1.0	0.32	mg/L		05/27/16 07:35	05/27/16 19:34	1
Zinc	0.0016	J	0.010	0.0015	mg/L		05/27/16 07:35	05/27/16 19:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/24/16 08:30	05/24/16 12:44	1

6/6/16

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100475-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 480-100475-7

Date Collected: 05/20/16 00:00

Matrix: Water

Date Received: 05/20/16 12:20

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			05/24/16 11:52	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/24/16 11:52	1
Acetone	ND		10	3.0	ug/L			05/24/16 11:52	1
Benzene	ND		1.0	0.41	ug/L			05/24/16 11:52	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/24/16 11:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		66 - 137		05/24/16 11:52	1
Toluene-d8 (Surr)	97		71 - 126		05/24/16 11:52	1
4-Bromofluorobenzene (Surr)	102		73 - 120		05/24/16 11:52	1
Dibromofluoromethane (Surr)	91		60 - 140		05/24/16 11:52	1

TestAmerica Buffalo

APPENDIX B

SUPPORT DOCUMENTATION

TestAmerica Buffalo

10 Hazelwood Drive
Amherst, NY 14228-2208
Phone (716) 691-2800 Fax (716) 691-7991

Chain of Custody Record

TestAmerica

TESTAMERICA INC. 10000 AMHERST, NY 14228

Client Information Client Contact: Mrs. Ann Marie Kropovitch Company: URS Corporation Address: 257 W. Genesee Street City: Buffalo State, Zip: NY, 14202 Phone: 716-923-1137 Email: ann.marie.kropovitch@aecorn.com Project Name: Prohl Brothers Landfill GW Monitoring SOW#:		Lab PM: Deyo, Melissa L. E-Mail: melissa.deyo@testamerica.com Carrier Tracking No(s): Page: 1 of 2 Job #:	
Analysis Requested Due Date Requested: TAT Requested (days): PO #: 60411174 Task1175616.00000 WO #: ann.marie.kropovitch@aecorn.com Project #: 48002609 SOW#:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate	
Sample Identification Sample ID: GW-73 Sample Type: (C=comp, G=grab) Sample Time: 10:26 Sample Date: 5/19/16 Matrix: (Water, Soil, Other) Matrix: Water		Special Instructions/Note: 480-100414 Chain of Custody	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by:		Date/Time: 5/19/16, 16:20 Company: URS	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 3.0, 2.8, 13.3 #1	

Chain of Custody Record

TestAmerica

THE UNIVERSITY OF CHICAGO PRESS

Client Information					
Sampler:	Karin J. McGowan				
Lab P/N:	Devo, Melissa L				
Client Contact:	Mrs. Ann Marie Kropovitch				
Phone:	716-923-1101				
E-Mail:	melissa.devo@testamericalnc.com				
Company:	URS Corporation				
Address: 257 W. Genesee Street City: Buffalo State, Zip: NY, 14202 Phone: 716-923-1137 Email: ann.marie.kropovitch@aecom.com Project Name: Pfchl Brothers Landfill GW Monitoring Site:					
Due Date Requested: TAT Requested (days): PO #: 80411174 Task1175616.00000 WO #: ann.marie.kropovitch@aecom.com 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:					
Special Instructions/Note:					
Total Number of Containers					
Sample Identification					
GW-85R	5/19/16	13:25	G	Water	Matrix (Volatile, Semi-volatile Organic Compounds by GC/MS)
GW-8D		12:40		Water	
GW-3S		09:52		Water	
GW-3D		11:05		Water	
GW-3D MS				Water	
GW-3D MSD				Water	
GW-29S		14:35		Water	
GW-30S		15:25		Water	
THIP BLANK				Water	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					
Deliverable Requested: I, II, III, IV, Other (specify)					
Empty Kit Relinquished by:					
Relinquished by:					
Relinquished by:					
Relinquished by:					
Date:					
Time:					
Method of Shipment:					
Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/>					
Archive For Months					
Special Instructions/QC Requirements:					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/>					
Received by:					
Received by:					
Received by:					
Received by:					
Date/Time:					
Date/Time:					
Date/Time:					
Date/Time:					
Company:					
Company:					
Company:					
Company:					
Custody Seal No.: A Yes A No					
Custody Seals Intact:					
Cooler Temperature(s) °C and Other Remarks:					

Case Narrative

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100414-1

Job ID: 480-100414-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-100414-1**

Receipt

The samples were received on 5/19/2016 4:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.8° C, 3.0° C and 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

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

Client Information				Lab PM:		Carrier Tracking No(s)		COC No:			
Client Contact:				Deyo, Melissa L				480-83481-13273.3			
Company:				E-Mail:				Page: 1 of 1			
URS Corporation				melissa.deyo@tesamericainc.com				Job #:			
Address:				Due Date Requested:		Analysis Requested					
257 W. Genesee Street											
City:				TAT Requested (days):							
Buffalo				Can Ann Marie / Kropovitch							
State, Zip											
NY, 14202											
Phone:				PO #:							
716-223-1137				60411174 Task11175616.00000							
Email:				WO #:							
ann.marie.kropovitch@aecom.com				ann.marie.kropovitch@aecom.com							
Project Name:				Project #:							
Pfchl Brothers Landfill GW Monitoring				48002609							
Site:				SSOW#:							
Sample Identification				Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, B=solid, O=wastefill, BT=tissue, Anal.)	
GW-315				5/10/16		07:55		G		Water	
GW-325						08:45				Water	
GW-355						09:31					
GW-260						10:40					
GW-335						11:30					
FD-20520 FD-052016											
THP Basic											
Possible Hazard Identification				Poison B		Unknown		Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant				<input type="checkbox"/> Return To Client		<input type="checkbox"/> Disposal By Lab		<input type="checkbox"/> Archive For		Months	
Deliverable Requested: I, II, III, IV, Other (specify)				Special Instructions/QC Requirements:							
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment:			
Relinquished by:				Date/Time:		Date/Time:		Date/Time:		Company	
Relinquished by:				Date/Time:		Date/Time:		Date/Time:		Company	
Relinquished by:				Date/Time:		Date/Time:		Date/Time:		Company	
Custody Seal No.:				Custody Seal Intact:		Custody Seal Intact:		Custody Seal Intact:		Custody Seal Intact:	
A Yes A No				A Yes A No		A Yes A No		A Yes A No		A Yes A No	

Case Narrative

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-100475-1

Job ID: 480-100475-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative 480-100475-1

Receipt

The samples were received on 5/20/2016 12:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° 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(s) 8270D: Six surrogates are used for this analysis. The laboratory's SOP allows two of these surrogates to be outside acceptance criteria without performing re-analysis. The following sample contained an allowable number of surrogate compounds outside limits: GW-35S (480-100475-3). These results have been reported and qualified.

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.

ATTACHMENT B

July 2016 – December 2016

Semi Annual Report

And

Data Applicability Report

**SEMI ANNUAL REPORT
OPERATION AND MAINTENANCE
JULY 2016 TO DECEMBER 2016
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
257 WEST GENESEE STREET, SUITE 400
BUFFALO, NEW YORK 14202-2657**

Prepared for:

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

**MARCH
2017**



March 17, 2016

Mr. David Szymanski
New York State Department of Environmental Conservation
270 Michigan Ave.
Buffalo, NY 14203

**Re: Semi-Annual Report January 2016 – June 2016
 Pfohl Brothers Landfill, Town of Cheektowaga, New York**

Dear Mr. Szymanski:

Enclosed is one copy of the July 2016 – December 2016 Semi-Annual Report for the Pfohl Brothers Landfill in Cheektowaga, New York. A copy has also been sent to Ms. Pamela Tames, P.E. of the United States Environmental Protection Agency.

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

Sincerely,

URS CORPORATION

A handwritten signature in black ink, appearing to read "Jon Sundquist".

Jon Sundquist, Ph.D.
Project Manager

Enclosures

cc: Pamela Tames, P.E. - USEPA (w/attachments)
 Patrick Bowen, P.E. – Town of Cheektowaga (w/attachments)
 File 11172700 (C-1)

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TABLES

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Table 3-2	Approved Revision of Table 3.2 from the O&M Plan

FIGURES

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Figure 3-1	Monitoring Locations

APPENDICES

Appendix A	Example Daily Inspection Sheets
Appendix B	Monthly Flow Summaries (July 2016 – December 2016)
Appendix C	Hydraulic Monitoring Tables
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Appendix E	Groundwater Trend Analysis
Appendix F	BSA Permit No. 16-04-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 manual was not approved by the NYSDEC until March 10, 2006. However, the Town of Cheektowaga and its consultant (URS Corporation – New York) 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 semi-annual 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 2016 through December 2016 include the following actions:

- The amount of groundwater discharged through the collection system was recorded on a daily basis. 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. Examples of the daily inspection sheet are attached in Appendix A.
- Total cumulative effluent flow rates and volumes were summarized on a monthly basis starting in February 2003. The monthly totals for the period of July 2016 through December 2016, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- The wet well pumps were shut down 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 as previously requested by NYSDEC.
- Plowed snow to access the Control Building when necessary.
- Replaced batteries in Emergency Lighting System.
- Hired exterminator to trap and remove 18 woodchucks.
- Contractor mowed entire cap and trimmed along perimeter chain link fence
- Inspected and maintained perimeter security fencing
- Inspected wet wells for excessive corrosion to critical equipment.

3.0 MONITORING ACTIVITIES

The Town of Cheektowaga retained URS Corporation to perform monitoring activities as outlined in Section 3.1 of the O&M plan. During the period of January 2004 through the present, URS performed 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) on a quarterly basis. URS also performed the semi-annual groundwater quality monitoring (Section 3.1.1.3 of the O&M plan) during this period. 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. Table C-1 of Appendix C lists the measured elevations. 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. Therefore, these data demonstrate that the collection system is operating as designed.

3.2 Groundwater Quality Monitoring

This semi-annual round of groundwater sampling was conducted between November 16 and 18, 2016. All 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 at most monitoring well locations.

Passive diffusion bags (PDBs) were placed in three monitoring wells with low recharge rates (GW-04S, GW-07S, and GW-07D) on September 30, 2016. The PDBs were removed from the wells during the sampling event and their contents were analyzed for VOCs. Following removal of the PDBs the three wells were purged dry. These wells were sampled for the other required parameters after their water levels recovered.

Purge logs and sampling summary sheets are provided in Appendix D. Measurements of pH, specific conductivity, temperature, dissolved oxygen, oxidation reduction potential, and turbidity taken during purging are provided in Appendix D. The samples were packed with ice in coolers and transported under chain-of-custody (CoC) control to Test America Laboratories of Amherst, New York.

Table 3-1 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. Groundwater samples were analyzed for the parameters listed in Table 3.2 of the O&M plan as revised in accordance with Table 3-6 in the Semi Annual 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 (that table is included in this report as Table 3-2).

Results

No VOCs or SVOCs were detected at concentrations above the Class GA water quality standards at any location.

Among the metals, iron, magnesium, manganese, and sodium routinely exceed Class GA standards in most site wells. In addition, chromium and lead were detected at concentrations exceeding their respective Class GA standards in well GW-07D.

Comparison to Historical Results

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

Sodium concentrations were generally higher in bedrock wells (GW-01D, GW-03D, GW-08D and GW-26D) and shallow wells adjacent to roads (GW-01S and GW-30S). The sodium concentration was also elevated in GW-08SR. The higher sodium concentrations in the bedrock wells may be attributed to the local bedrock composition and the elevated concentration in the shallow wells may be the result of seasonal road de-icing activities.

Trend Analysis

A trend analysis of groundwater parameters that routinely exceed Class GA groundwater standards was performed and is presented 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 except as described below. Figure E-2 for GW-01S, indicates an upward trend in manganese concentrations and a downward trend in sodium concentration since monitoring began. Figure E-3 for GW-03D indicates downward trends for iron, manganese, and sodium. Figure E-4 indicates upward trends for magnesium and sodium in GW-03S since monitoring began. Figure E-5 for GW-04D, indicates a slight increasing trend for magnesium. Figure E-9 for GW-08D shows a decreasing trend for both iron and manganese since monitoring began. Figure E-10 for GW-08SR shows an increasing trend for sodium since monitoring began; however, there was a sharp decrease during the most recent sampling event. Figure E-11 for GW-26D indicates downward trends for iron and manganese and a slight upward trend for sodium. Figures E-12 and E-13 for GW-28S and GW-29S, respectively, indicate a decreasing trend for sodium since monitoring began. Figure E-14 for GW-30S shows a decreasing trend for iron, magnesium, manganese, and sodium. Figure E-16 shows there is a seasonal variation in sodium concentration in monitoring well GW-32S. Figure E-18 for GW-34S indicates a seasonal fluctuation in manganese concentration with an overall increasing trend since the Fall of 2011.

Laboratory Report

The groundwater analytical data package was prepared by Test America in accordance with NYSDEC Category A deliverable requirements. It was reviewed for compliance with analytical method requirements and the following guidelines: *National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-014-002, August 2014; and *National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-13-001, August 2014. Qualifications applied to the data include “J/UJ” (estimated concentration/estimated quantitation limit), “J+” (estimated concentration with possible high bias), “J-” (estimated concentration with possible low bias), and “U” (not detected).

A Data Applicability Report (DAR) was prepared 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 2017 is submitted separately from this report.

3.3 Groundwater Discharge Monitoring

URS completed two quarterly sampling events (September 2016 and December 2016) of the groundwater collection system discharge since the previous semi-annual report. The sampling was performed in accordance with the requirements of Discharge Permit No. 16-04-CH016 between the Buffalo Sewer Authority and the Town of Cheektowaga. A copy of the permit is included as Appendix F.

During the sampling events in September 2016 and December 2016, each regulated parameter was below the limits set by the permit, with the exception of daily flow during the December event which was calculated at 163,533 gallons during the period of sample collection, exceeding the permitted amount of 140,000 gallons per day. Copies of the data summary tables that were included with the monitoring reports are included as Appendix G.

3.4 Monitoring Well Inspections

During the November 2016 groundwater sampling event, a well inspection was performed. All wells appeared to be in good condition with the exception of previously existing damage to the risers on GW-07D, GW-01S, and GW-01D. The monitoring well inspection logs may be found in Appendix H.

4.0 SUMMARY AND RECOMMENDATIONS

General Maintenance: The Town 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 access to the control building during winter months 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 hydraulic gradient is from outside the landfill towards the collection trench. Continued quarterly monitoring is recommended.

Groundwater Quality Monitoring: Groundwater sample results indicate that only low levels of organic compounds 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 2017. 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 even using low flow sampling techniques.

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

TABLES

TABLE 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2016

Location ID			GW-01D	GW-01S	GW-03D	GW-04D	GW-04S
Sample ID			GW-1D	GW-1S	GW-3D	GW-4D	GW-4S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/16/16	11/16/16	11/17/16	11/16/16	11/16/16
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					
Acetone	UG/L	50					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3			2.0 J		NA
1,4-Dichlorobenzene	UG/L	3			2.9 J		NA
Metals							
Arsenic	MG/L	0.025					NA
Barium	MG/L	1	0.074	0.18	0.042	0.092	NA
Cadmium	MG/L	0.005		0.0013			NA
Chromium	MG/L	0.05	0.036	0.0044		0.0027 J	NA
Copper	MG/L	0.2					NA
Iron	MG/L	0.3	0.33	9.1	0.72	0.13	NA
Lead	MG/L	0.025					NA
Magnesium	MG/L	35	33.9	20.6	10.0	79.5	NA
Manganese	MG/L	0.3	0.020	1.3	0.18	0.020	NA
Nickel	MG/L	0.1	0.0059 J	0.0013 J	0.0039 J		NA
Sodium	MG/L	20	103	132	88.0	91.9	NA
Zinc	MG/L	2					NA

* - 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 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2016

Location ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID			GW-4S	GW-7D	GW-7D	GW-7S	GW-7S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/16/16	11/16/16	11/17/16	11/16/16	11/17/16
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5	NA		NA		NA
Acetone	UG/L	50	NA	4.0 J	NA		NA
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3		NA		NA	
1,4-Dichlorobenzene	UG/L	3		NA		NA	
Metals							
Arsenic	MG/L	0.025		NA		NA	
Barium	MG/L	1	0.13	NA	0.079	NA	0.31
Cadmium	MG/L	0.005		NA	0.00075 J	NA	
Chromium	MG/L	0.05	0.0061	NA	0.12	NA	0.0023 J
Copper	MG/L	0.2	0.0028 J	NA	0.017	NA	
Iron	MG/L	0.3	2.4	NA	4.6	NA	0.25
Lead	MG/L	0.025		NA	0.066	NA	
Magnesium	MG/L	35	26.9	NA	38.5	NA	38.4
Manganese	MG/L	0.3	0.14	NA	0.069	NA	0.038
Nickel	MG/L	0.1	0.0070 J	NA	0.067	NA	0.011
Sodium	MG/L	20	30.6	NA	81.9	NA	60.2
Zinc	MG/L	2	0.012	NA	0.033	NA	0.0053 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 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2016

Location ID			GW-08D	GW-08D	GW-08SR	GW-26D	GW-28S
Sample ID			FD-111716	GW-8D	GW-8SR	GW-26D	GW-28S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/17/16	11/17/16	11/17/16	11/18/16	11/17/16
Parameter	Units	*	Field Duplicate (1-1)				
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5				0.97 J	
Acetone	UG/L	50					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
Metals							
Arsenic	MG/L	0.025				0.0064 J	
Barium	MG/L	1	0.067	0.070	0.16	0.11	0.097
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05	0.020	0.024	0.014	0.0022 J	
Copper	MG/L	0.2	0.0019 J	0.0019 J			0.0021 J
Iron	MG/L	0.3	0.20	0.24	9.9	3.5	0.58
Lead	MG/L	0.025					
Magnesium	MG/L	35	16.2	16.6	62.3	16.3	29.6
Manganese	MG/L	0.3	0.034	0.036	0.90	0.41	0.35
Nickel	MG/L	0.1	0.0028 J	0.0049 J	0.0092 J	0.0015 J	0.0014 J
Sodium	MG/L	20	148	153	155	258	14.4
Zinc	MG/L	2	0.0041 J	0.0051 J	0.0017 J		0.0071 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 aromatics.

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 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2016

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			11/18/16	11/18/16	11/18/16	11/18/16	11/17/16
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					
Acetone	UG/L	50					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
Metals							
Arsenic	MG/L	0.025	0.016				
Barium	MG/L	1	0.19	0.40	0.13	0.067	0.060
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05		0.0012 J			0.0058
Copper	MG/L	0.2					
Iron	MG/L	0.3	9.5	16.8	0.61	0.022 J	0.029 J
Lead	MG/L	0.025					
Magnesium	MG/L	35	74.8	49.7	44.6	36.0	74.6
Manganese	MG/L	0.3	0.56	2.8	0.67	0.20	0.0095
Nickel	MG/L	0.1			0.0080 J		
Sodium	MG/L	20	9.8	704	8.8	6.6	4.1
Zinc	MG/L	2	0.0016 J		0.0069 J	0.0028 J	0.0035 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 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2016

Location ID			GW-34S	GW-35S
Sample ID			GW-34S	GW-35S
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			11/17/16	11/18/16
Parameter	Units	*		
Volatile Organic Compounds				
1,2-Dichloroethene (total)	UG/L	5		
Acetone	UG/L	50		
Semivolatile Organic Compounds				
1,3-Dichlorobenzene	UG/L	3		
1,4-Dichlorobenzene	UG/L	3		
Metals				
Arsenic	MG/L	0.025		
Barium	MG/L	1	0.092	0.097
Cadmium	MG/L	0.005		
Chromium	MG/L	0.05	0.0035 J	0.0014 J
Copper	MG/L	0.2		
Iron	MG/L	0.3	0.055	0.067
Lead	MG/L	0.025		
Magnesium	MG/L	35	29.7	40.7
Manganese	MG/L	0.3	0.010	0.042
Nickel	MG/L	0.1	0.0031 J	0.0036 J
Sodium	MG/L	20	16.4	4.9
Zinc	MG/L	2		0.096

* - 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

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 3-2 (continued)

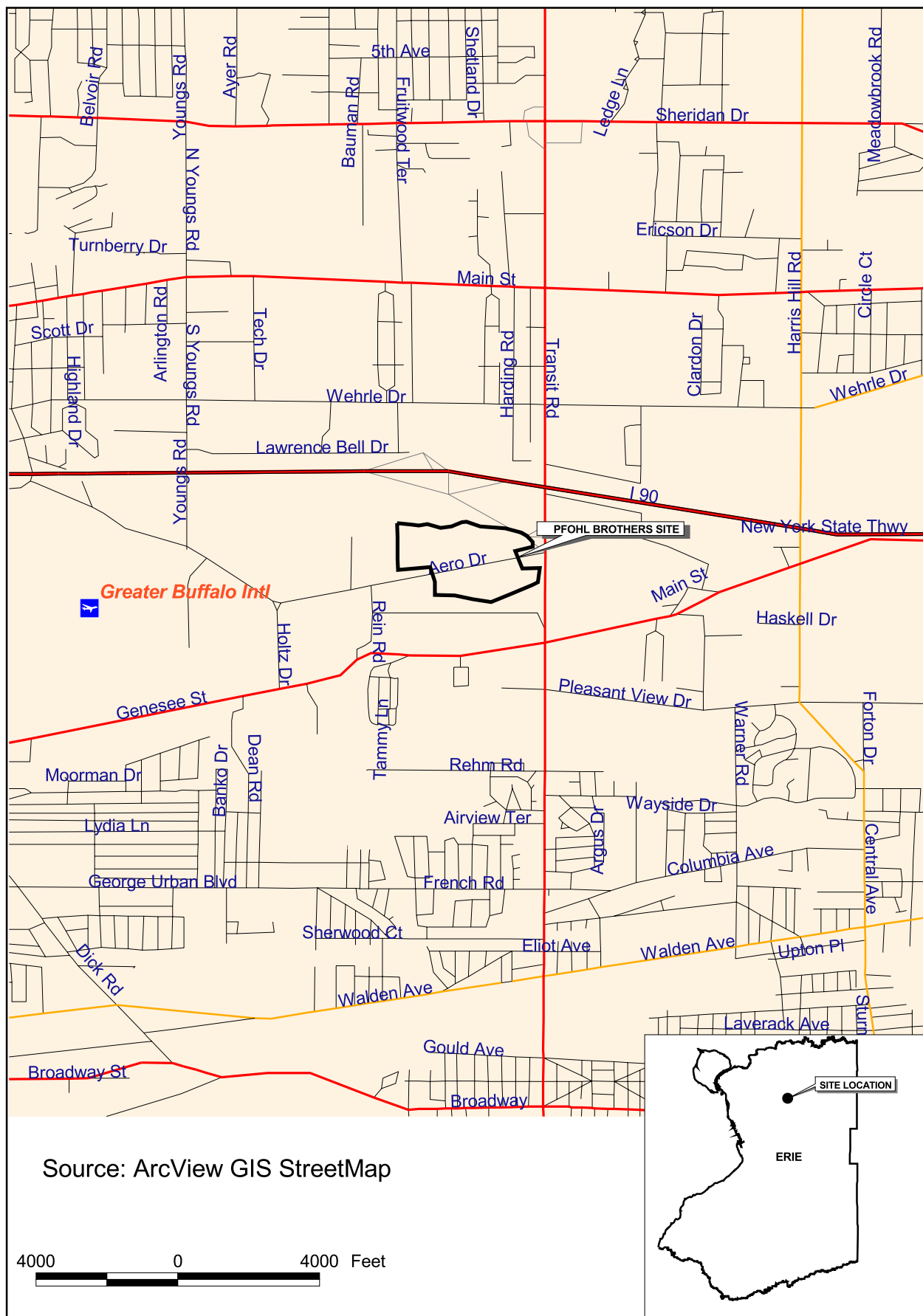
APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

**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

FIGURES



N:\1172700\000000\GIS\ArcView\pfohl.apr WELL LOCATIONS
12/15/2005



Legend

- Monitoring Well Location
- ▲ Staff Gauge Location
- Manhole Location
- Wet Well Location

400 0 400 Feet

PFOHL BROTHERS LANDFILL
MONITORING LOCATIONS

URS

FIGURE 3-1

APPENDIX A

EXAMPLE DAILY INSPECTION SHEETS

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date

7/1/16
1115

Weather conditions

Cloudy
JNN

Time

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>21721</u>	<u>2791</u>
WW-2	<u>4.8</u>	<u>0</u>	<u>-1670</u>	<u>161</u>
WW-1	<u>4.2</u>	<u>0</u>	<u>683036</u>	<u>4873</u>
WW-6	<u>7.0</u>	<u>0</u>	<u>4731060</u>	<u>13528</u>
WW-4	<u>6.9</u>	<u>0</u>	<u>200594</u>	<u>1982</u>
WW-5	<u>4.2</u>	<u>0</u>	<u>5006072</u>	<u>16470</u>

Flow Totalizer at Meter chamber

10644882

Heat Trace

Outside temp T = 69°
Current A = 0

Set point SP = 40°

Surge Suppressor events

416485

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

7/1/16 Totalizer Reset (Annual)

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 10/4/16

Weather conditions Clear

Time 207

Read by: TWJ

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	0	2791
WW-2	47	0	0	161
WW-1	3.9	0	353 467	4997
WW-6	6.6	0	233 211	135 85
WW-4	7.4	0	3288 45	7127
WW-5	7.5	41.2	452388	16673

Flow Totalizer at Meter chamber 1366880

Heat Trace

Outside temp T = 72°

Set point SP = 40°

Current A = 0

Surge Suppressor events 416551

Motor Control Center

Volts 480 volts

Which WW was running?

Amps 4 amps

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☒ 6 ☐

Filter

Checked ☐

Changed ☐

Comments and/or Current Conditions

Date
Site Survey
Landscaping Crew on Property

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date

12/7/16

Weather conditions

Partly Cloudy

Time

11:35

Read by:

JWN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	<u>29.0</u>	<u>0</u>	<u>158</u>	<u>2791</u>
WW-2	<u>4.7</u>	<u>0</u>	<u>0</u>	<u>161</u>
WW-1	<u>4.7</u>	<u>37.3</u>	<u>528221</u>	<u>5075</u>
WW-6	<u>7.7</u>	<u>55.8</u>	<u>119167</u>	<u>13817</u>
WW-4	<u>8.5</u>	<u>30.4</u>	<u>415798</u>	<u>7178</u>
WW-5	<u>8.8</u>	<u>13.4</u>	<u>1140135</u>	<u>16985</u>

Flow Totalizer at Meter chamber

3242669

Heat Trace

Outside temp T =

39

Set point SP =

40

Current A =

2.1

Surge Suppressor events

416571

Motor Control Center

Volts

480

volts

Which WW was running?

Amps

20

amps

☒ 1 ☐ 2 ☐ 3 ☒ 4 ☒ 5 ☒ 6

Filter

Checked ☒

Changed ☐

Comments and/or Current Conditions

APPENDIX B

MONTHLY FLOW SUMMARIES
JULY 2016 – DECEMBER 2016

The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

August 10, 2016

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga
Re: Pfohl Bros. Flow Data

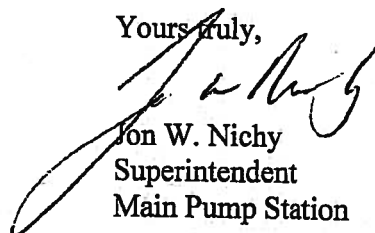
Dear Mr. Pugh,

Enclosed for your review, please find a copy of the July 2016 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

On July 1, 2016 the Flow Totalizers were reset to zero.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,



Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

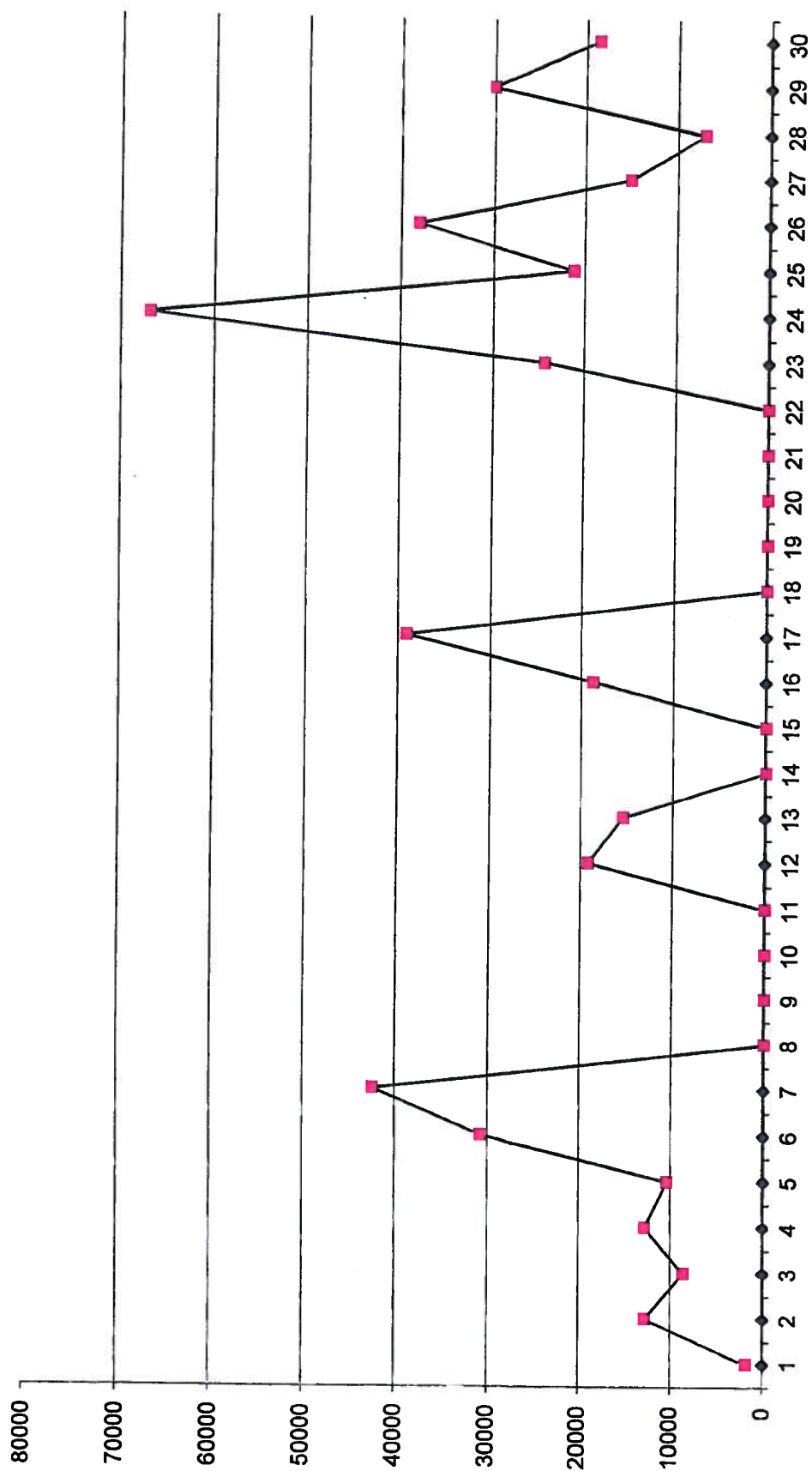
6/30/2016

10640625

9,343

Jul-16	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		1,813	1,813	ANNUAL TOTALIZER RESET
2		14,590	12,777	
3		23,201	8,610	
4		36,025	12,823	
5		46,408	10,383	
6		77,231	30,822	
7		119,636	42,404	
8		119,636	0	
9		119,636	0	
10		119,636	0	
11		119,636	0	
12		138,831	19,194	
13		154,169	15,338	22:50 inhibit
14		154,169	0	11:46 enable
15		154,169	0	
16		172,901	18,731	
17		211,942	39,040	
18		211,942	0	
19		211,942	0	
20		211,942	0	
21		211,942	0	
22		211,942	0	
23		236,250	24,307	
24		303,143	66,892	
25		324,346	21,202	08:24 inhibit
26		362,402	38,056	12:05 enable
27		377,540	15,137	
28		384,566	7,025	
29		414,596	30030	
30		433,228	18631	
31		440,051	6823	
		440,051	440,038	

July
2016



The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

September 9, 2016

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

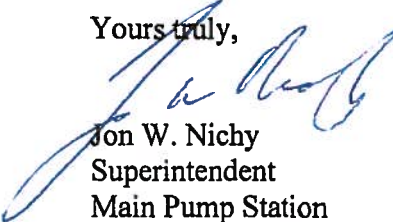
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the August 2016 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,

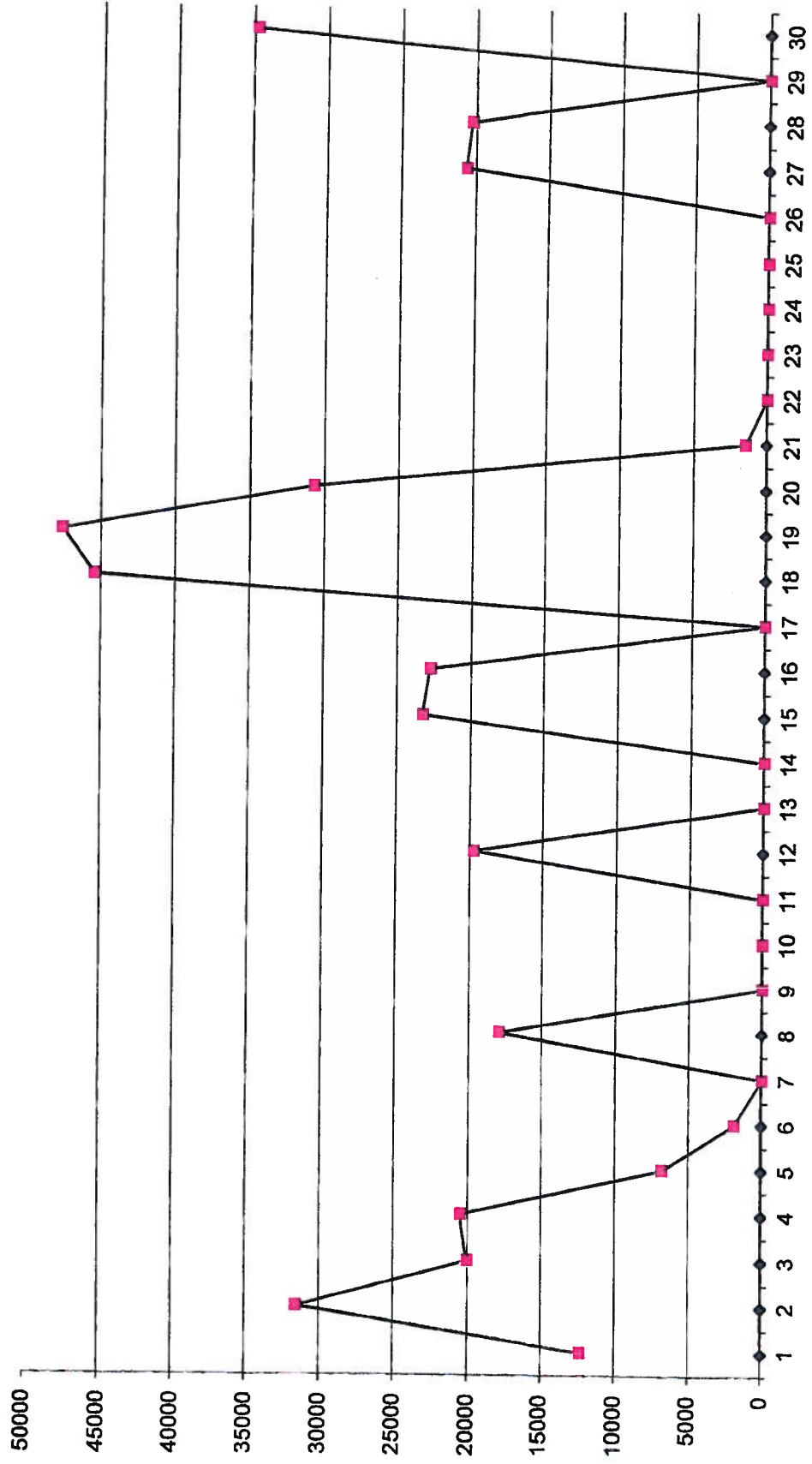

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

7/31/2016

		440051	6,823	
Aug-16	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		452,413	12,361	
2		484,003	31,590	
3		504,080	20,077	
4		524,635	20,555	
5		531,439	6,803	
6		533,326	1,887	
7		533,326	0	
8		551,298	17,971	
9		551,298	0	
10		551,298	0	01:58 inhibit
11		551,298	0	
12		571,101	19,803	03:40 enable
13		571,101	0	
14		571,101	0	
15		594,382	23,280	
16		617,168	22,786	08:59 Inhibit
17		617,168	0	
18		662,596	45,428	10:19 enable
19		710,184	47,588	
20		740,905	30,721	
21		742,354	1,449	
22		742,354	0	
23		742,354	0	
24		742,354	0	
25		742,354	0	04:43 inhibit
26		742,354	0	22:33 enable
27		763,023	20,669	
28		783,321	20,297	
29		783,321	0	
30		818,080	34759	
31		843,060	24980	09:13 inhibit 23:17 enable
		403,009	403,004	

August
2016



The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent

Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

October 5, 2016

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the September 2016 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,

A handwritten signature in black ink, appearing to read "Jon W. Nichy", is written over the typed name and title.

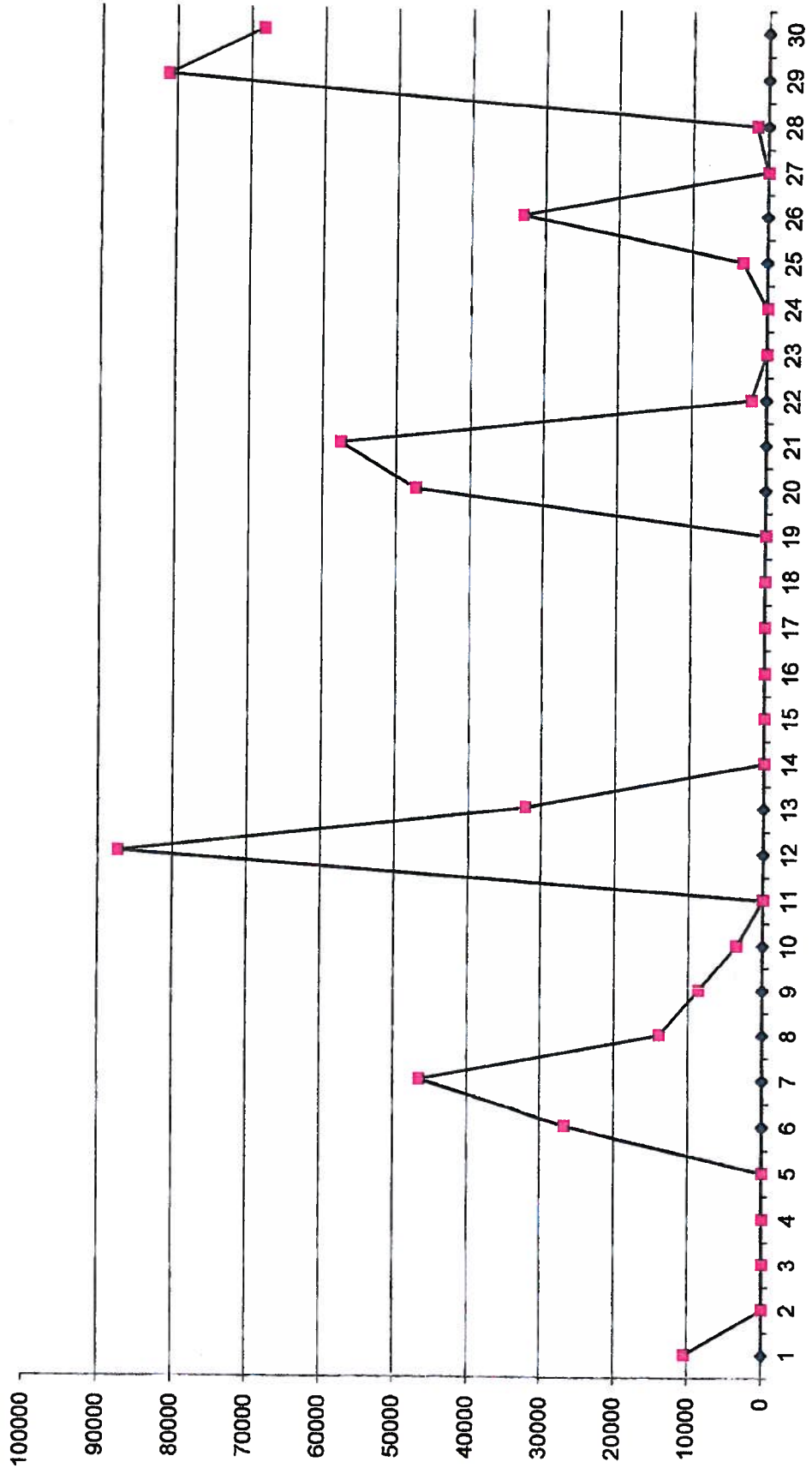
Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

8/31/2016

		843060	24,980	
Sep-16	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		853,519	10,458	
2		853,519	0	
3		853,519	0	
4		853,519	0	
5		853,519	0	
6		880,246	26,727	
7		926,764	46,517	
8		940,665	13,901	
9		949,251	8,585	
10		952,757	3,506	20:59 inhibit
11		952,757	0	14:32 enable
12		1,044,476	87,318	
13		1,072,315	32,239	
14		1,072,315	0	
15		1,072,315	0	
16		1,072,315	0	
17		1,072,315	0	13:46 inhibit
18		1,072,315	0	20:59 enable
19		1,072,315	0	
20		1,119,719	47,403	
21		1,177,319	57,600	
22		1,179,332	2,013	
23		1,179,332	0	
24		1,179,332	0	
25		1,182,590	3,258	
26		1,215,647	33,056	20:40 inhibit
27		1,215,647	0	
28		1,217,186	1,539	23:21 enable
29		1,298,290	81103	
30		1,366,548	68258	
31				
		523,488	523,481	

September
2016



The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

November 4, 2016

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

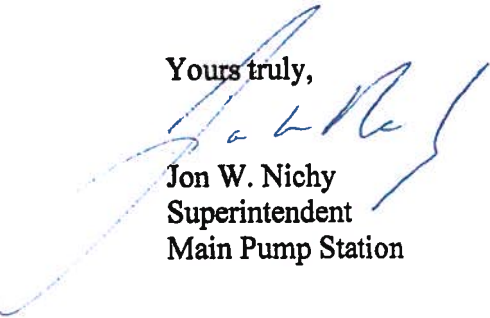
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the October 2016 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,


Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

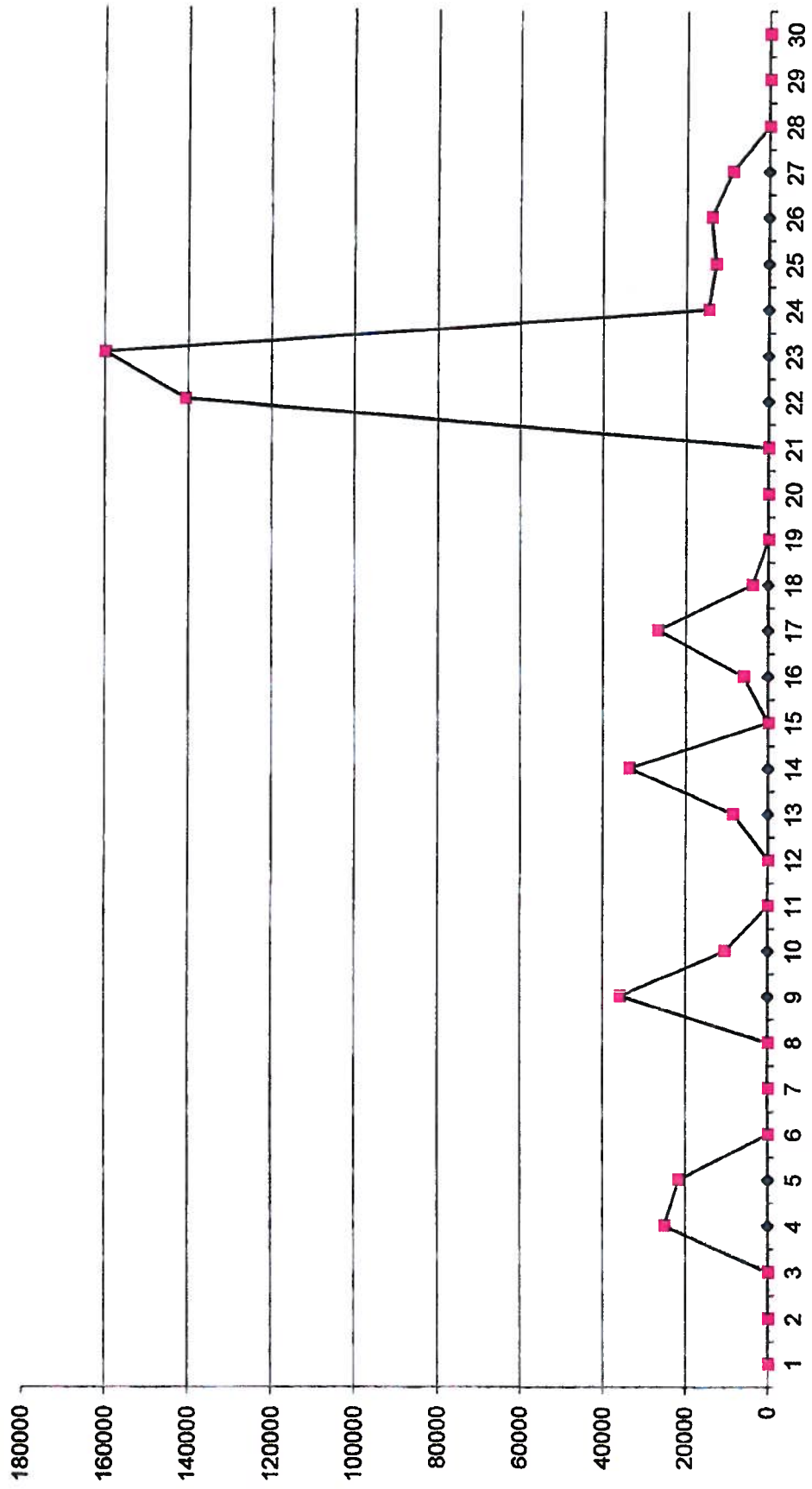
9/30/2016

1366548

68,258

Oct-16	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		1,366,548	0	09:59 inhibit
2		1,366,548	0	
3		1,366,548	0	
4		1,391,769	25,220	14:09 enable
5		1,413,505	21,736	
6		1,413,505	0	
7		1,413,505	0	
8		1,413,505	0	
9		1,449,386	35,880	
10		1,459,847	10,461	
11		1,459,847	0	
12		1,459,847	0	
13		1,468,345	8,498	
14		1,502,062	33,716	
15		1,502,062	0	
16		1,508,082	6,020	
17		1,534,868	26,785	
18		1,538,686	3,818	21:11 inhibit
19		1,538,686	0	
20		1,538,686	0	
21		1,538,686	0	
22		1,679,296	140,610	07:15 enable
23		1,839,237	159,941	
24		1,853,882	14,644	
25		1,866,704	12,822	
26		1,880,625	13,920	
27		1,889,502	8,877	09:31 inhibit
28		1,889,502	0	
29		1,889,502	0	
30		1,889,502	0	
31		1,889,502	0	
		522,954	522,948	

October
2016



The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

December 9, 2016

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

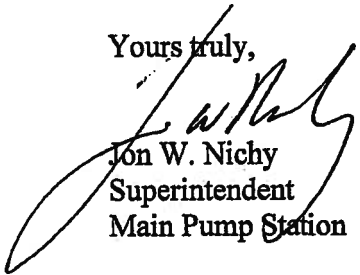
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the November 2016 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,


Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

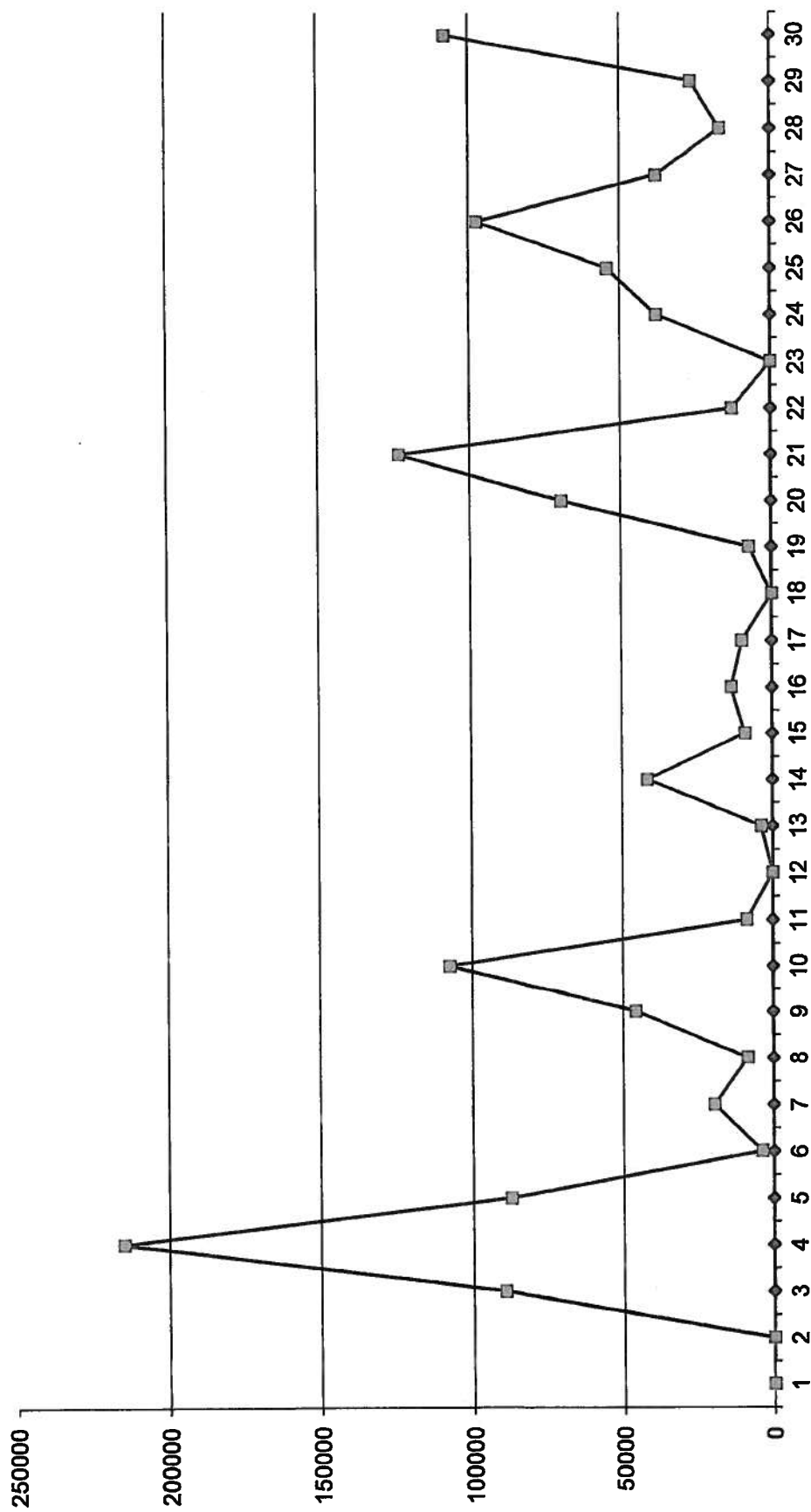
10/31/2016

1889502

0

Nov-16	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		1,889,502	0	
2		1,889,502	0	
3		1,979,073	89,570	13:48 enable
4		2,194,030	214,956	
5		2,281,555	87,525	
6		2,285,314	3,759	
7		2,304,865	19,550	
8		2,313,342	8,477	23:31 inhibit
9		2,359,234	45,891	11:02 enable
10		2,466,822	107,588	
11		2,475,494	8,671	
12		2,475,494	0	
13		2,479,207	3,713	
14		2,520,802	41,594	
15		2,529,858	9,056	
16		2,543,418	13,559	
17		2,553,355	9,937	
18		2,553,355	0	
19		2,560,779	7,423	19:53 inhibit
20		2,630,681	69,902	12:58 enable
21		2,754,013	123,331	
22		2,766,839	12,826	
23		2,766,839	0	
24		2,804,798	37,959	
25		2,859,074	54,275	
26		2,956,510	97,436	
27		2,994,403	37,893	
28		3,011,040	16,637	
29		3,037,324	26283	
30		3,145,151	107826	22:11 inhibit
31				
		1,255,649	1,255,637	

November
2016



The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

January 5, 2017

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the December 2016 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,

A handwritten signature in black ink, appearing to read "Jon W. Nichy", is written over the typed name and title.

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

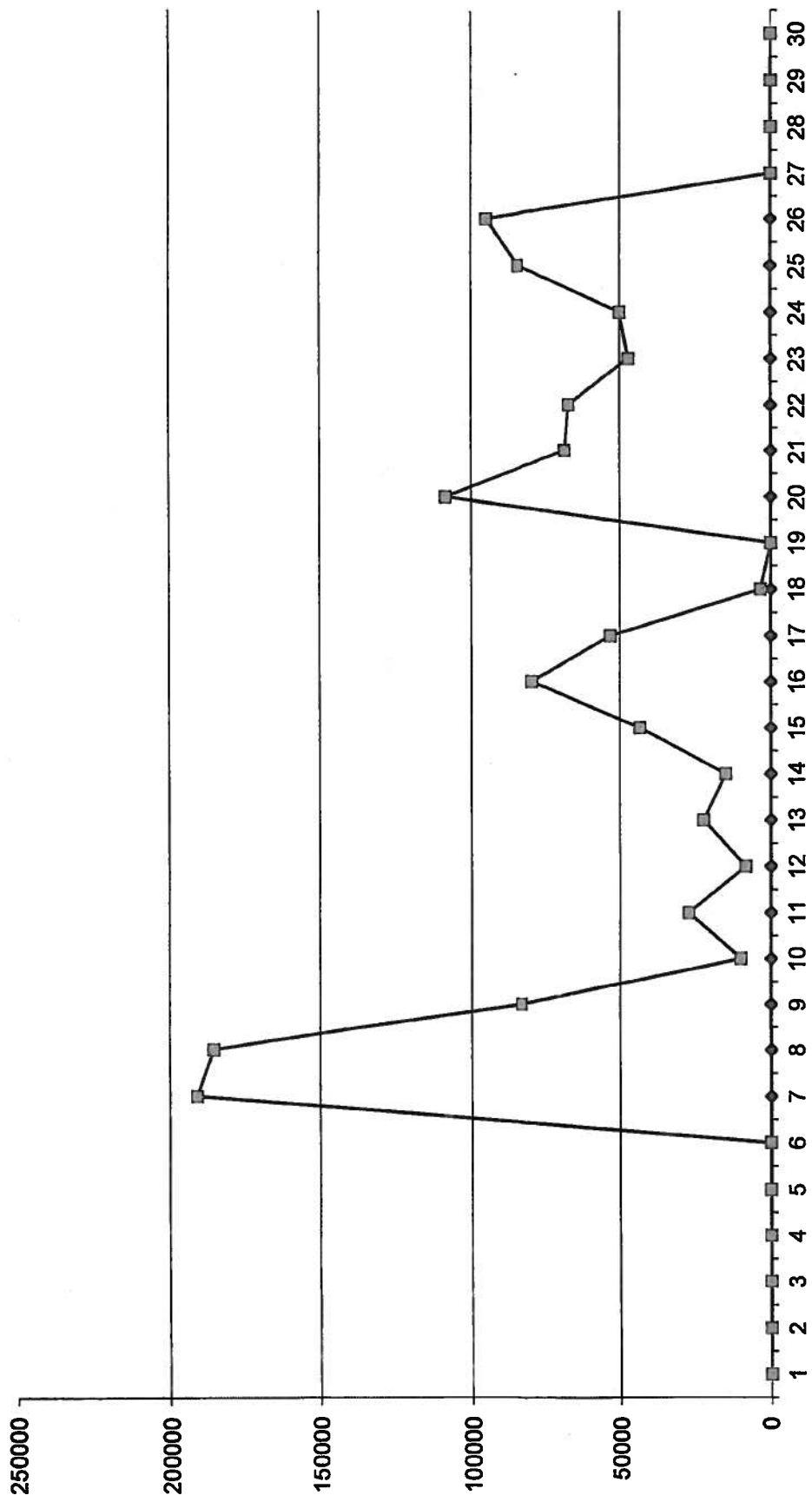
11/30/2016

3145151

107,826

Dec-16	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		3,145,151	0	
2		3,145,151	0	
3		3,145,151	0	
4		3,145,151	0	
5		3,145,151	0	
6		3,145,151	0	
7		3,336,463	191,012	00:36 enable
8		3,521,683	185,520	
9		3,604,954	83,271	
10		3,614,938	9,983	
11		3,642,022	27,084	
12		3,650,414	8,392	
13		3,672,702	22,288	
14		3,687,674	14,971	
15		3,731,276	43,602	
16		3,810,984	79,707	
17		3,864,192	53,208	
18		3,867,550	3,358	02:04 inhibit
19		3,867,550	0	
20		3,976,256	108,706	01:22 enable
21		4,044,814	68,557	
22		4,112,029	67,214	
23		4,159,229	47,200	
24		4,209,358	50,129	12:29 inhibit
25		4,293,656	84,298	10:12 enable
26		4,388,621	94,965	14:29 inhibit
27		4,388,621	0	
28		4,388,621	0	
29		4,388,621	0	
30		4,388,621	0	
31		4,388,621		
		1,243,470	1,243,465	

December
2016



APPENDIX C

HYDRAULIC MONITORING TABLES

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2016

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								9/29/2016 1743	4.12	692.00	0.00	692.00	
MNW								11/16/2016 1158	3.49	692.63	0.00	692.63	
MNW								12/8/2016 1049	2.55	693.57	0.00	693.57	
GW-01S	1073087.779	1117961.500	694.53	NM	696.19	S	1						
MNW								9/29/2016 1744	6.58	689.61	0.00	689.61	
MNW								11/16/2016 1158	4.71	691.48	0.00	691.48	
MNW								12/8/2016 1050	3.45	692.74	0.00	692.74	
GW-03D	1073819.106	1114602.426	692.35	NM	693.88	D	1						
MNW								9/29/2016 1534	2.25	691.63	0.00	691.63	
MNW								11/16/2016 0854	2.27	691.61	0.00	691.61	
MNW								12/8/2016 0944	1.73	692.15	0.00	692.15	
GW-03S	1073812.622	1114605.762	692.61	NM	693.80	S	1						
MNW								9/29/2016 1537	DRY		0.00		DRY
MNW								11/16/2016 0853	DRY		0.00		DRY @ 13.52'
MNW								12/8/2016 0942	DRY		0.00		DRY
GW-04D	1072289.432	1114685.625	690.89	NM	692.75	D	1						
MNW								9/29/2016 1652	13.44	679.31	0.00	679.31	
MNW								11/16/2016 0947	12.51	680.24	0.00	680.24	
MNW								12/8/2016 1058	12.58	680.17	0.00	680.17	
GW-04S	1072284.456	1114685.127	690.76	NM	692.72	S	1						
MNW								9/29/2016 1650	7.78	684.94	0.00	684.94	
MNW								11/16/2016 0947	4.83	687.89	0.00	687.89	
MNW								12/8/2016 1056	4.12	688.60	0.00	688.60	

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 2016

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								9/29/2016 1736	46.33	653.61	0.00	653.61	
MNW								11/16/2016 0955	43.47	656.47	0.00	656.47	
MNW								12/8/2016 1043	55.77	644.17	0.00	644.17	
GW-07S	1071238.157	1117666.265	697.47	NM	699.51	S	1						
MNW								9/29/2016 1733	7.08	692.43	0.00	692.43	
MNW								11/16/2016 0954	5.99	693.52	0.00	693.52	
MNW								12/8/2016 1041	4.94	694.57	0.00	694.57	
GW-08D	1073713.617	1116795.328	695.28	NM	697.79	D	1						
MNW								9/29/2016 1554	6.26	691.53	0.00	691.53	
MNW								11/16/2016 0907	6.16	691.63	0.00	691.63	
MNW								12/8/2016 1000	5.66	692.13	0.00	692.13	
GW-08SR	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								9/29/2016 1551	5.42	692.08	0.00	692.08	
MNW								11/16/2016 0906	5.22	692.28	0.00	692.28	
MNW								12/8/2016 1000	5.10	692.40	0.00	692.40	
GW-26D	1071698.573	1115997.470	696.01	NM	698.50	D	1						
MNW								9/29/2016 1720	7.10	691.40	0.00	691.40	
MNW								11/16/2016 0939	7.00	691.50	0.00	691.50	
MNW								12/8/2016 1030	6.52	691.98	0.00	691.98	
GW-28S	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								9/29/2016 1601	11.18	689.77	0.00	689.77	
MNW								11/16/2016 0913	9.68	691.27	0.00	691.27	
MNW								12/8/2016 1006	8.43	692.52	0.00	692.52	

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 2016

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								9/29/2016 1704	10.51	689.12	0.00	689.12	
MNW								11/16/2016 0926	8.90	690.73	0.00	690.73	
MNW								12/8/2016 1016	6.26	693.37	0.00	693.37	
GW-30S	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								9/29/2016 1707	8.40	688.18	0.00	688.18	
MNW								11/16/2016 0928	8.20	688.38	0.00	688.38	
MNW								12/8/2016 1019	7.80	688.78	0.00	688.78	
GW-31S	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								9/29/2016 1711	8.75	689.87	0.00	689.87	
MNW								11/16/2016 0931	6.16	692.46	0.00	692.46	
MNW								12/8/2016 1023	2.55	696.07	0.00	696.07	
GW-32S	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								9/29/2016 1715	7.81	690.56	0.00	690.56	
MNW								11/16/2016 0934	5.40	692.97	0.00	692.97	
MNW								12/8/2016 1027	2.32	696.05	0.00	696.05	
GW-33S	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								9/29/2016 1725	DRY		0.00		DRY
MNW								11/16/2016 0942	4.85	693.39	0.00	693.39	
MNW								12/8/2016 1034	3.47	694.77	0.00	694.77	
GW-34S	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								9/29/2016 1526	DRY		0.00		DRY
MNW								11/16/2016 0846	3.25	691.52	0.00	691.52	
MNW								12/8/2016 0934	2.67	692.10	0.00	692.10	

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 2016

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								9/29/2016 1720	DRY		0.00		DRY
MNW								11/16/2016 0939	6.32	691.07	0.00	691.07	
MNW								12/8/2016 1029	4.68	692.71	0.00	692.71	
MH-01	1073806.665	1114810.501	698.62	NM	698.62	NA	1						
MH								9/29/2016 1529	9.95	688.67	0.00	688.67	
MH								11/16/2016 0847	10.05	688.57	0.00	688.57	
MH								12/8/2016 0938	10.40	688.22	0.00	688.22	
MH-03	1073736.789	1115259.334	699.40	NM	699.40	NA	1						
MH								9/29/2016 1545	10.73	688.67	0.00	688.67	
MH								11/16/2016 0858	10.91	688.49	0.00	688.49	
MH								12/8/2016 0954	11.58	687.82	0.00	687.82	
MH-07	1073838.229	1116243.757	696.82	NM	696.82	NA	1						
MH								9/29/2016 1548	8.95	687.87	0.00	687.87	
MH								11/16/2016 0901	9.12	687.70	0.00	687.70	
MH								12/8/2016 0957	9.82	687.00	0.00	687.00	
MH-10	1073540.729	1117381.524	703.01	NM	703.01	NA	1						
MH								9/29/2016 1605	14.50	688.51	0.00	688.51	
MH								11/16/2016 0910	14.48	688.53	0.00	688.53	
MH								12/8/2016 1004	14.48	688.53	0.00	688.53	
MH-15	1072531.567	1117761.125	699.02	NM	699.02	NA	1						
MH								9/29/2016 1703	14.17	684.85	0.00	684.85	
MH								11/16/2016 0923	14.55	684.47	0.00	684.47	
MH								12/8/2016 1015	13.93	685.09	0.00	685.09	

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 2016

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	9/29/2016 1706	14.55	684.02	0.00	684.02	
								11/16/2016 0928	14.51	684.06	0.00	684.06	
								12/8/2016 1018	14.06	684.51	0.00	684.51	
MH-17 MH	1071813.137	1117180.019	702.16	NM	702.16	NA	1	9/29/2016 1710	18.15	684.01	0.00	684.01	
								11/16/2016 0931	18.12	684.04	0.00	684.04	
								12/8/2016 1022	17.68	684.48	0.00	684.48	
MH-20 MH	1071756.395	1115997.024	706.20	NM	706.20	NA	1	9/29/2016 1716	19.74	686.46	0.00	686.46	
								11/16/2016 0937	19.75	686.45	0.00	686.45	
								12/8/2016 1028	19.74	686.46	0.00	686.46	
MH-22 MH	1072158.023	1115589.309	698.05	NM	698.05	NA	1	9/29/2016 1724	8.97	689.08	0.00	689.08	
								11/16/2016 0941	9.02	689.03	0.00	689.03	
								12/8/2016 1033	8.90	689.15	0.00	689.15	
MH-25 MH	1072483.928	1114820.313	698.17	NM	698.17	NA	1	9/29/2016 1518	9.43	688.74	0.00	688.74	
								11/16/2016 0845	9.62	688.55	0.00	688.55	
								12/8/2016 0928	9.65	688.52	0.00	688.52	
SG-01 SG	1073882.887	1114813.101	NM	NM	690.00	NA	1	9/29/2016 1530	DRY		0.00		DRY
								11/16/2016 0847	DRY		0.00		DRY
								12/8/2016 0939	-0.70	690.70	0.00	690.70	

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
JULY - DECEMBER 2016

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								9/29/2016 1556	DRY		0.00		DRY
SG								11/16/2016 0904	-3.10	693.10	0.00	693.10	
SG								12/8/2016 0959	-3.24	693.24	0.00	693.24	
WW-01	1073676.903	1115710.476	NM	NM	684.02	NA	1						
MH								9/29/2016 0730	-4.70	688.72	0.00	688.72	
MH								11/16/2016 0730	-4.3	688.32	0.00	688.32	
MH								12/8/2016 0840	-3.7	687.72	0.00	687.72	
WW-02	1073684.724	1116792.311	NM	NM	684.18	NA	1						
MH								9/29/2016 0730	-4.6	688.78	0.00	688.78	
MH								11/16/2016 0730	-4.6	688.78	0.00	688.78	
MH								12/8/2016 0840	-4.7	688.88	0.00	688.88	
WW-03	1073140.339	1117618.499	NM	NM	683.80	NA	1						
MH								9/29/2016 1603	-4.54	688.34	0.00	688.34	
MH								11/16/2016 0730	-4.71	688.51	0.00	688.51	
MH								12/8/2016 0840	-4.90	688.70	0.00	688.70	
WW-04	1072057.563	1117610.508	NM	NM	676.62	NA	1						
MH								9/29/2016 0730	-6.8	683.42	0.00	683.42	
MH								11/16/2016 0730	-6.9	683.52	0.00	683.52	
MH								12/8/2016 0840	-7.5	684.12	0.00	684.12	
WW-05	1071661.368	1116370.876	NM	NM	676.14	NA	1						
MH								9/29/2016 0730	-5.8	681.94	0.00	681.94	
MH								11/16/2016 0730	-6.8	682.94	0.00	682.94	
MH								12/8/2016 0840	-7.7	683.84	0.00	683.84	

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 2016

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								9/29/2016 0730	-7.5	689.39	0.00	689.39	
MH								11/16/2016 0730	-7.2	689.09	0.00	689.09	
MH								12/8/2016 0840	-7.0	688.89	0.00	688.89	

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)
9/29/2016	688.72	---	---	688.78	692.08	3.30	DRY	NA
11/16/2016	688.32	---	---	688.78	692.28	3.50	693.10	4.32
12/8/2016	687.72	---	---	688.88	692.40	3.52	693.24	4.36

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)
9/29/2016	688.34	689.77	1.43	683.42	---	---
11/16/2016	688.51	691.27	2.76	683.52	---	---
12/8/2016	688.70	692.52	3.82	684.12	---	---

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)
9/29/2016	681.94	690.56	8.62	689.39	DRY	NA
11/16/2016	682.94	692.97	10.03	689.09	691.52	2.43
12/8/2016	683.84	696.05	12.21	688.89	692.10	3.21

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)
9/29/2016	688.67	DRY	NA	684.85	689.12	4.27
11/16/2016	688.57	DRY	NA	684.47	690.73	6.26
12/8/2016	688.22	690.70	2.48	685.09	693.37	8.28

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)
9/29/2016	684.02	688.18	4.16	684.01	689.87	5.86
11/16/2016	684.06	688.38	4.32	684.04	692.46	8.42
12/8/2016	684.51	688.78	4.27	684.48	696.07	11.59

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)
9/29/2016	686.46	DRY	NA	689.08	DRY	NA
11/16/2016	686.45	691.07	4.62	689.03	693.39	4.36
12/8/2016	686.46	692.71	6.25	689.15	694.77	5.62

Notes:

* = No corresponding monitoring well.
NA = Not applicable

APPENDIX D

**GROUNDWATER PURGE AND SAMPLE COLLECTION
LOGS**

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, T. Urban Supervisor: J. Sundquist

Date of Sampling: November 16, 2016

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-7S	GW-07S	18.9	PDB	10:15	Groundwater	VOCs	Not Applicable
GW-7D	GW-07D	43.4	PDB	10:20	Groundwater	VOCs	Not Applicable
GW-1D	GW-01D	89.3	70.0	13:20	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-1S	GW-01S	6.3	8.7	14:07	Groundwater		Not Applicable
GW-4S	GW-04S	7.0	15.1	14:45&16:20	Groundwater		Not Applicable
GW-4D	GW-04D	81.7	12.0	16:08	Groundwater		Not Applicable
TB-111616	---	---	---	----	Trip Blank	VOCs	Not Applicable

Additional Comments: GW-4S, GW-7D, and GW-7S were sampled for VOCs using passive diffusion bags (PDBs). GW-4S, GW-7D, and GW-7S were then purged dry, and remaining parameters were collected after recovery.
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: E. Thalhamer, T. Urban Supervisor: J. Sundquist

Date of Sampling: November 17, 2016

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-7S	GW-07S	18.9	24.6	8:10	Groundwater	SVOCs/Metals	Not Applicable
GW-7D	GW-07D	43.4	43.5	8:20	Groundwater		Not Applicable
GW-34S	GW-34S	4.2	7.1	9:30	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-3D	GW-03D	82.7	57.0	11:00	Groundwater		Not Applicable
GW-3D-MS	GW-03D	82.7	57.0	11:00	Groundwater		Not Applicable
GW-3D-MSD	GW-03D	82.7	57.0	11:00	Groundwater		Not Applicable
GW-8D	GW-08D	74.9	57.0	12:30	Groundwater		Not Applicable

Additional Comments: GW-7D and GW-7S 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: E. Thalhamer, T. Urban Supervisor: J. Sundquist

Date of Sampling: November 17, 2016

<i>Sample I.D. Number</i>	<i>Well Number</i>	<i>Well Volume (liters)</i>	<i>Volume Purged (liters)</i>	<i>Sample Time</i>	<i>Sample Description</i>	<i>Analysis Required</i>	<i>Chain-of- Custody Number</i>
FD-111716	GW-08D	74.9	57.0	---	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-8SR	GW-08SR	4.8	7.2	13:20	Groundwater		Not Applicable
GW-28S	GW-28S	3.5	5.1	14:10	Groundwater		Not Applicable
GW-33S	GW-33S	2.0	5.3	15:05	Groundwater		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, T. Urban Supervisor: J. Sundquist

Date of Sampling: November 18, 2016

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-29S	GW-29S	6.8	7.4	8:49	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-30S	GW-30S	6.0	14.4	9:40	Groundwater		Not Applicable
GW-31S	GW-31S	2.1	6.7	10:33	Groundwater		Not Applicable
GW-32S	GW-32S	2.8	10.8	11:20	Groundwater		Not Applicable
GW-35S	GW-35S	0.7	6.7	12:05	Groundwater		Not Applicable
GW-26D	GW-26D	83.1	60.0	13:13	Groundwater		Not Applicable
TB-1117-1816	---	---	---	---	Trip Blank	VOCs	Not Applicable

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/16/2016 Sampling Personnel: Rob Murphy, Tom Urban 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:	4.71'	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):	6.3	Estimated Purge Volume (liters):	8.7
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Sample ID:	GW-1S	Sample Time:	14:07	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.
Orange stain in water initially.

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: 11/16/2016 Sampling Personnel: Rob Murphy, Tom Urban 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:	3.49'	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):	89.3	Estimated Purge Volume (liters):	70.0
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Sample ID:	GW-1D	Sample Time:	13:20	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)
12:10	7.57	10.78	1.04	3.40	4.9	-149	1000	3.49
12:15	7.55	10.86	1.03	1.26	0.9	-159	1000	3.55
12:20	7.54	10.92	1.03	1.03	0.9	-162	1000	3.56
12:25	7.54	10.98	1.03	0.72	0.9	-164	1000	3.56
12:30	7.53	11.04	1.03	0.68	0.7	-164	1000	3.56
12:35	7.53	11.08	1.03	0.63	0.6	-164	1000	3.56
12:40	7.50	11.13	1.02	0.59	0.9	-161	1000	3.56
12:45	7.40	11.17	1.00	0.57	0.5	-172	1000	3.56
12:50	7.25	11.20	0.985	0.56	0.0	-193	1000	3.56
12:55	7.24	11.21	0.984	0.54	0.0	-211	1000	3.56
13:00	7.24	11.22	0.983	0.53	0.0	-218	1000	3.56
13:05	7.24	11.22	0.982	0.53	0.1	-227	1000	3.56
13:10	7.24	11.26	0.982	0.53	0.0	-236	1000	3.56
13:15	7.24	11.26	0.980	0.52	0.0	-241	1000	3.56
13:20	7.25	11.28	0.979	0.51	0.0	-244	1000	3.56
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-03S

Date: 11/17/2016 Sampling Personnel: Ernie Thalhamer, Tom Urban 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:	DRY	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):	Estimated Purge Volume (liters):

Sample ID:	Sample Time:	QA/QC:	None
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Sample Parameters: No Sample, well dry.

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: 11/17/2016 Sampling Personnel: Ernie Thalhamer, Tom Urban 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:	2.22'	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):	82.7	Estimated Purge Volume (liters):	57.0
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Sample ID:	GW-3D	Sample Time:	11:00	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-04S

Date: 11/16/2016 Sampling Personnel: Rob Murphy, Tom Urban 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:	4.83'	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):	7.0	Estimated Purge Volume (liters):	15.1
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Sample ID:	GW-4S	Sample Time:	14:45 (VOCs) & 16:20 (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 9/30/16, sampled VOCs from PDB at 14:45 on 11/16/16.

Well historically goes dry at very low purge rates (<75ml/min). Bailed dry and sampled for SVOCs and Metals after recovery at 16:20.

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)
14:47	8.44	11.18	0.444	7.89	8.3	-125	Initial	4.83
14:49	8.46	11.57	0.440	7.46	55.6	-122	1 Gallon	-
14:51	8.36	11.73	0.440	9.03	171	-118	2 Gallon	-
14:55	8.15	11.72	0.443	6.67	460	-121	3 Gallon	-
14:57	8.08	11.79	0.435	7.74	>999	-127	4 Gallon	DRY
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: 11/16/2016 Sampling Personnel: Rob Murphy, Tom Urban 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:	12.51'	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):	81.7	Estimated Purge Volume (liters):	12.0
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Sample ID:	GW-4D	Sample Time:	16:08	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. O₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:08	7.45	11.35	1.37	3.04	51.1	-168	200	12.51
15:13	7.31	11.20	1.45	1.68	23.2	-198	200	13.10
15:18	7.27	11.07	1.67	0.81	5.9	-272	200	13.32
15:23	7.26	11.02	1.67	0.72	6.3	-278	200	13.47
15:28	7.26	10.97	1.67	0.69	7.1	-281	200	13.62
15:33	7.26	10.94	1.68	0.66	6.3	-285	200	13.76
15:38	7.25	10.90	1.69	0.61	4.9	-288	200	13.85
15:43	7.25	10.86	1.68	0.59	5.7	-291	200	13.93
15:48	7.24	10.88	1.69	0.61	5.7	-295	200	14.03
15:53	7.24	10.85	1.68	0.61	6.9	-297	200	14.08
15:58	7.23	10.82	1.68	0.60	7.2	-299	200	14.12
16:03	7.22	10.81	1.70	0.62	5.6	-301	200	14.17
16:08	7.22	10.80	1.72	0.63	5.9	-303	200	14.19
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, Tom Urban		
DATE(S):	11/16/16, 11/17/16		

		WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	35.33	1" 0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	5.99	2" 0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	29.34	3" 0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4" 0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	4.99	5" 1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=		6" 1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	6.5	8" 2.60

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

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Initial	2	4	6		Sample				
pH	8.01	8.09	8.14	8.13		7.97				
SPEC. COND. (mS/cm)	0.577	0.581	0.578	0.573		0.616				
DO (mg/l)	3.48	7.97	8.40	9.90		6.66				
TEMPERATURE (°C)	11.29	11.82	11.56	10.98		11.41				
TURBIDITY (NTU)	7.7	14.8	15.0	273		21.0				
ORP (millivolts)	69	71	74	82		-9				
TIME	10:25	10:30	10:33	10:39		8:10				

COMMENTS: 10:15 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 9/30/16
 10:25 - Begin hand bailing well.
 10:40 - Well dry after removing 6.5 gallons.
 11/17/2016 8:06 - Return to well, depth to water = 6.18 feet.
 8:10 - 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 (11/16 only), Tom Urban, Ernie Thalhamer (11/17 only)		
DATE(S):	11/16/16, 11/17/16		

			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>43.47</u>	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	<u>17.36</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>11.46</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>11.5</u>	8"	2.60

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

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Init	3	6	9	11.5	Sample				
pH	7.62	7.66	7.77	7.75	7.95	7.90				
SPEC. COND. (mS/cm)	0.843	0.741	0.802	0.799	0.800	0.816				
DO (mg/l)	3.35	6.49	8.92	9.11	9.27	5.01				
TEMPERATURE (°C)	10.93	11.00	10.96	11.09	10.95	9.98				
TURBIDITY (NTU)	9.2	10.8	15.9	30.4	63.7	47.5				
ORP (millivolts)	-187	-143	-165	-163	-119	-37				
TIME	10:58	11:06	11:16	11:27	11:35	8:20				

COMMENTS: 10:20 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 9/30/16
 10:58 - Begin hand bailing well.
 11:35 - Well dry after removing 11.5 gallons
 11/17/2016 08:19 - return to well, depth to water = 59.40 feet.
 08:20 - 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: 11/17/2016 Sampling Personnel: Ernie Thalhamer, Tom Urban 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:	5.28'	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):	4.8	Estimated Purge Volume (liters):	7.2
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Sample ID:	GW-8SR	Sample Time:	13:20	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-08D

Date: 11/17/2016 Sampling Personnel: Ernie Thalhamer, Tom Urban 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:	6.20'	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):	74.9	Estimated Purge Volume (liters):	57.0
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Sample ID:	GW-8D	Sample Time:	12:30	QA/QC:	Duplicate (FD-111716)
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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: 11/18/2016 Sampling Personnel: Rob Murphy, Tom Urban 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:	7.04'	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):	83.1	Estimated Purge Volume (liters):	60.0
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Sample ID:	GW-26D	Sample Time:	13:13	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-28S

Date: 11/17/2016 Sampling Personnel: Ernie Thalhamer, Tom Urban 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:	9.87'	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):	3.5	Estimated Purge Volume (liters):	5.1
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Sample ID:	GW-28S	Sample Time:	14:10	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-29S

Date: 11/18/2016 Sampling Personnel: Rob Murphy, Tom Urban 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:	9.08'	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):	7.4
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Sample ID:	GW-29S	Sample Time:	8:49	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

Orange iron 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: 11/18/2016 Sampling Personnel: Rob Murphy, Tom Urban 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:	8.24'	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):	6.0	Estimated Purge Volume (liters):	14.4
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Sample ID: GW-30S Sample Time: 9:40 QA/QC: None

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: 11/18/2016 Sampling Personnel: Rob Murphy, Tom Urban 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:	6.20'	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):	2.1	Estimated Purge Volume (liters):	6.7
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Sample ID:	GW-31S	Sample Time:	10:33	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: 11/18/2016 Sampling Personnel: Rob Murphy, Tom Urban 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:	5.40'	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):	2.8	Estimated Purge Volume (liters):	10.8
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Sample ID:	GW-32S	Sample Time:	11:20	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-33S

Date: 11/17/2016 Sampling Personnel: Ernie Thalhamer, Tom Urban 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:	4.97'	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):	2.0	Estimated Purge Volume (liters):	5.3
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Sample ID:	GW-33S	Sample Time:	15:05	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: 11/17/2016 Sampling Personnel: Ernie Thalhamer, Tom Urban 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:	3.27'	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):	7.1
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Sample ID: GW-34S Sample Time: 9:30 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

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)
9:00	7.22	9.52	0.748	9.37	13.6	42	235	3.27
9:05	7.13	9.71	0.728	8.84	7.7	75	235	4.71
9:10	7.11	9.67	0.725	8.72	23.3	89	235	5.25
9:15	7.07	9.72	0.725	8.65	13.2	97	235	5.43
9:20	7.03	9.79	0.724	8.50	2.9	106	235	5.62
9:25	7.00	9.82	0.727	8.05	1.3	112	235	5.60
9:30	6.99	9.86	0.721	7.87	1.1	116	235	5.61
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-35S

Date: 11/18/2016 Sampling Personnel: Rob Murphy, Tom Urban 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:	6.30'	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):	0.7	Estimated Purge Volume (liters):	6.7
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Sample ID:	GW-35S	Sample Time:	12:05	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 ($\text{vol}_{\text{cyl}} = \pi r^2 h$)

APPENDIX E

GROUNDWATER TREND ANALYSIS

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

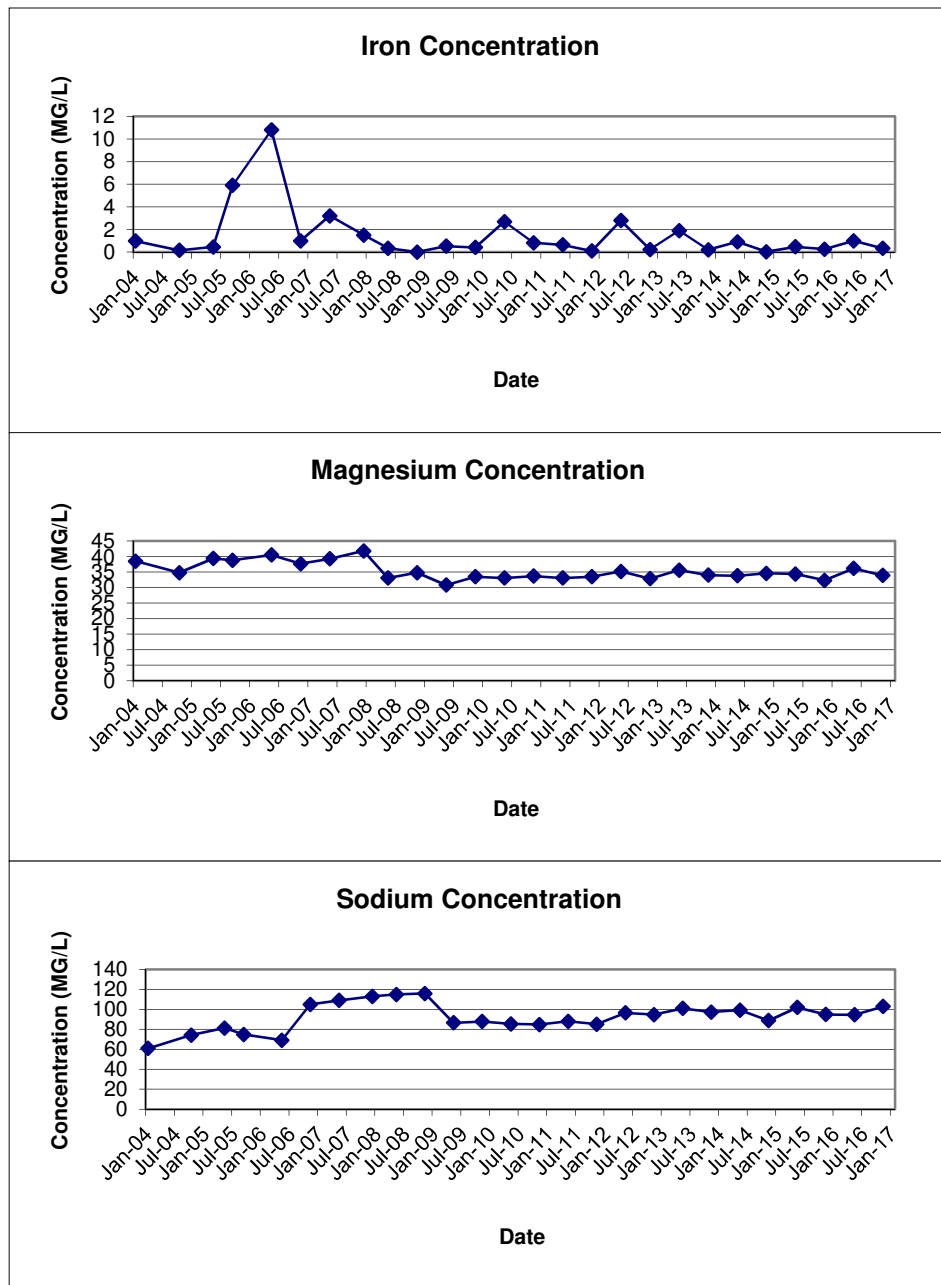


FIGURE E-2
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-01S

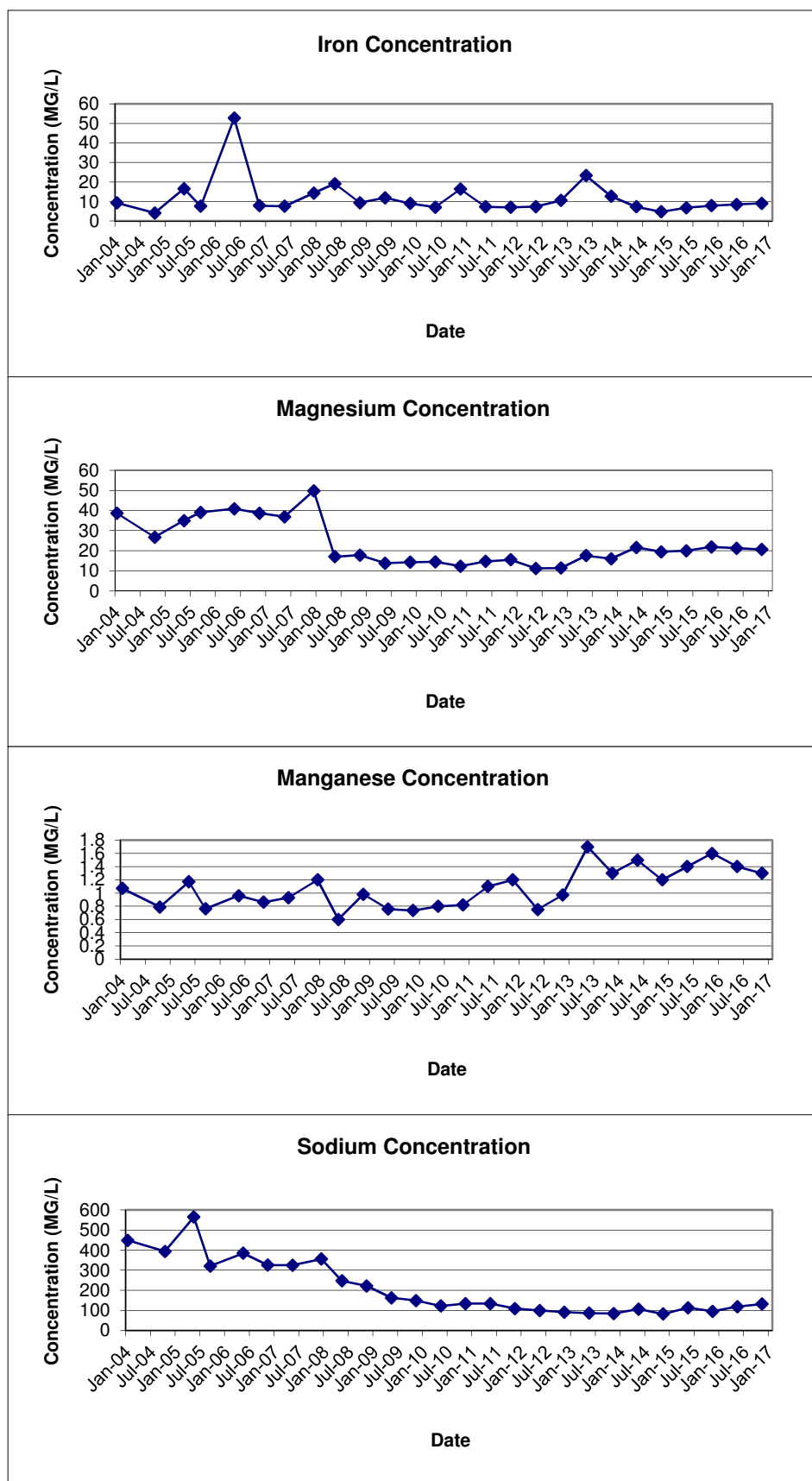


FIGURE E-3
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-03D

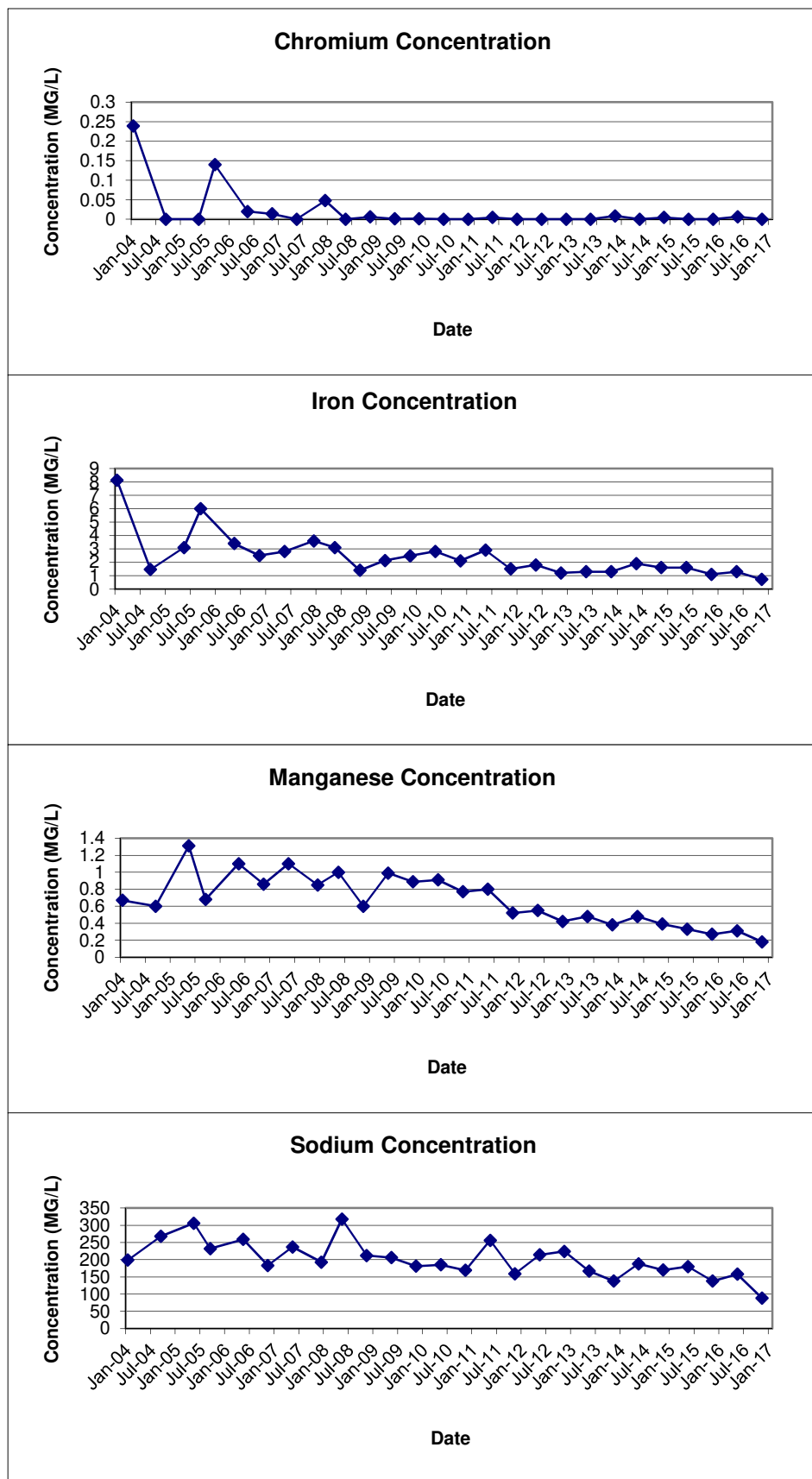
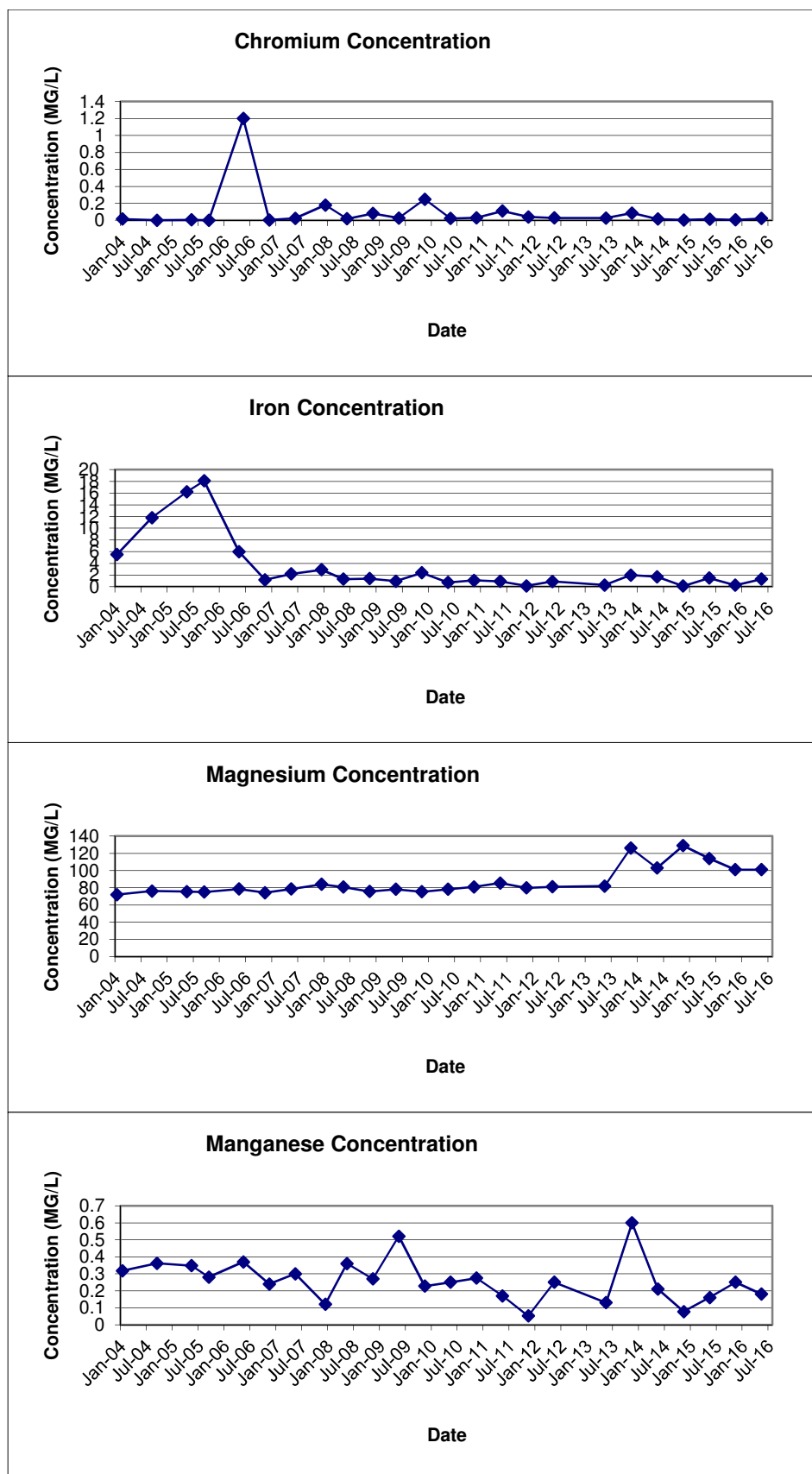


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-03S



Well was Dry and was not sampled in November 2016

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

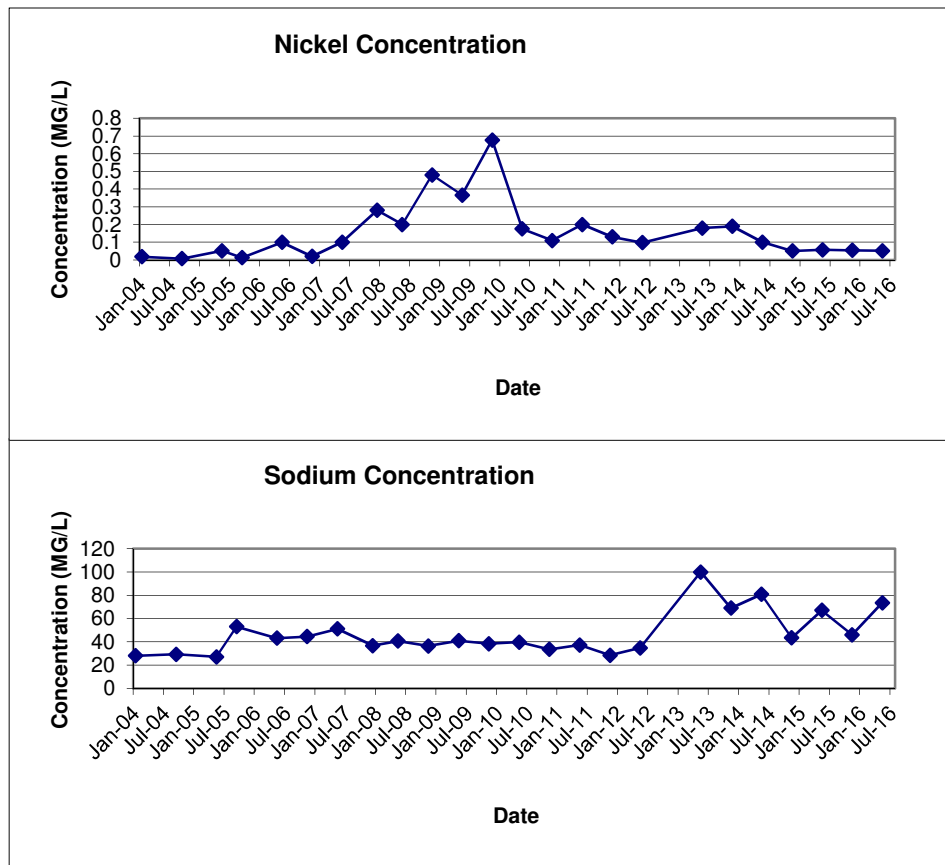


FIGURE E-5
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-04D

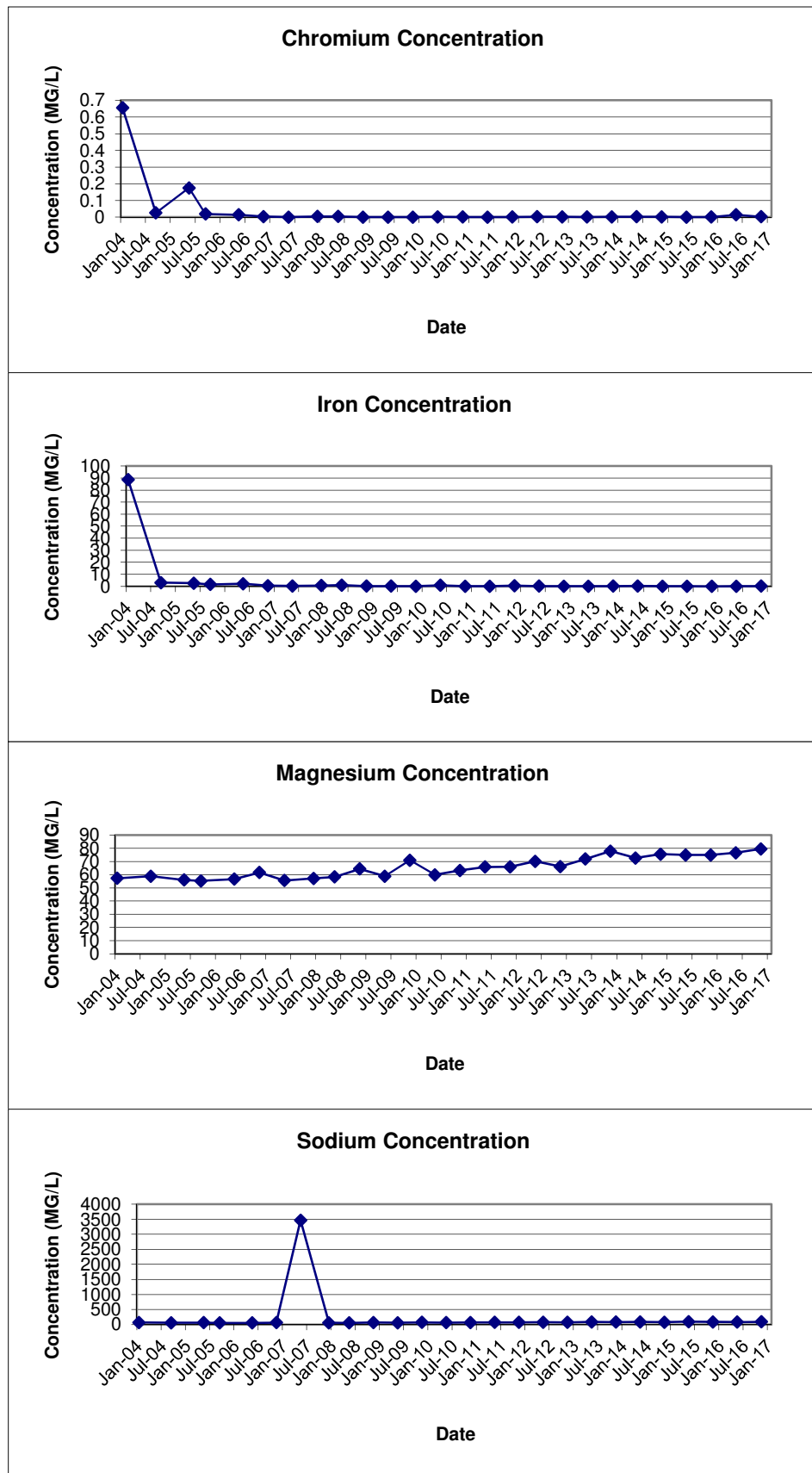


FIGURE E-6
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-04S

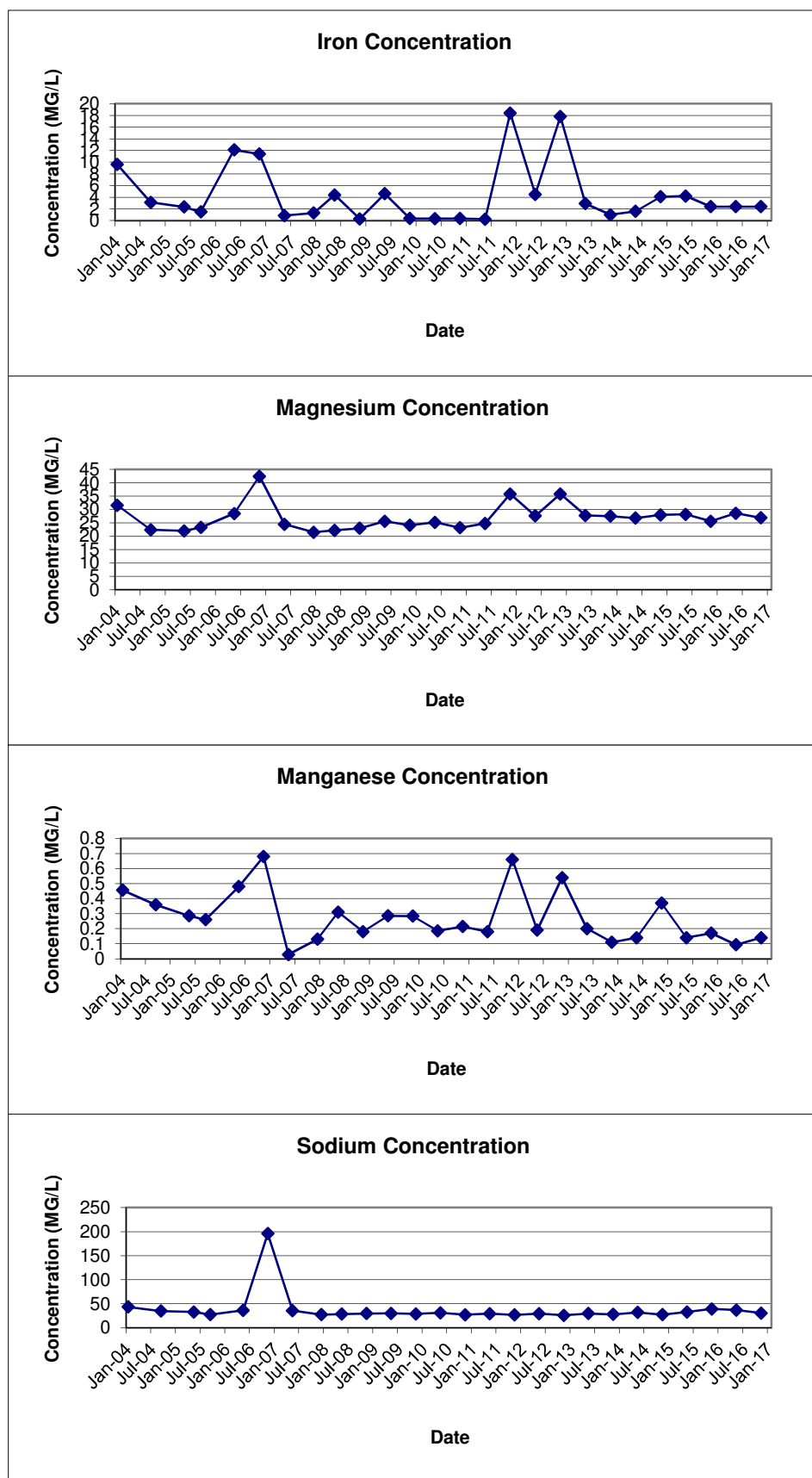


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07D

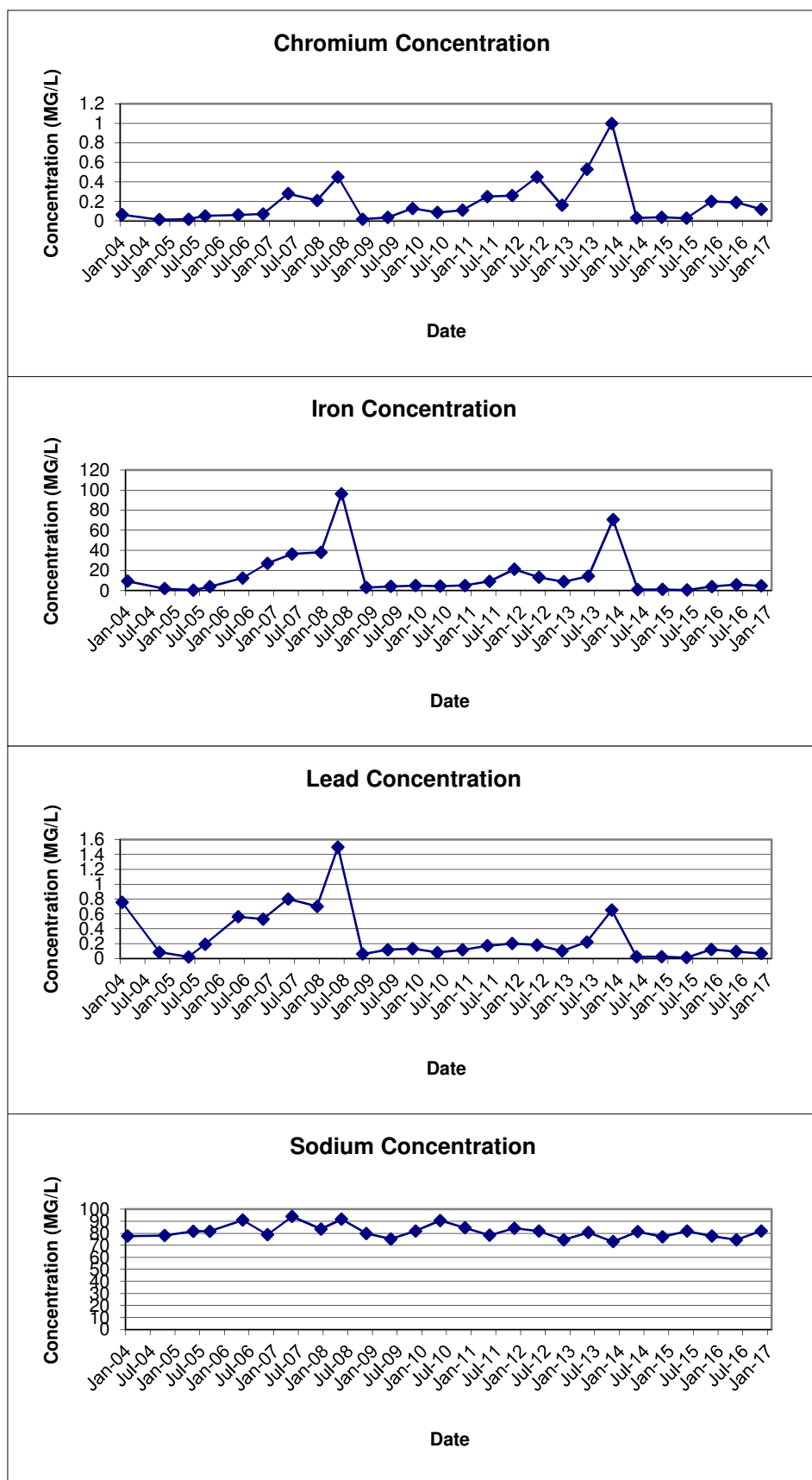


FIGURE E-8
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07S

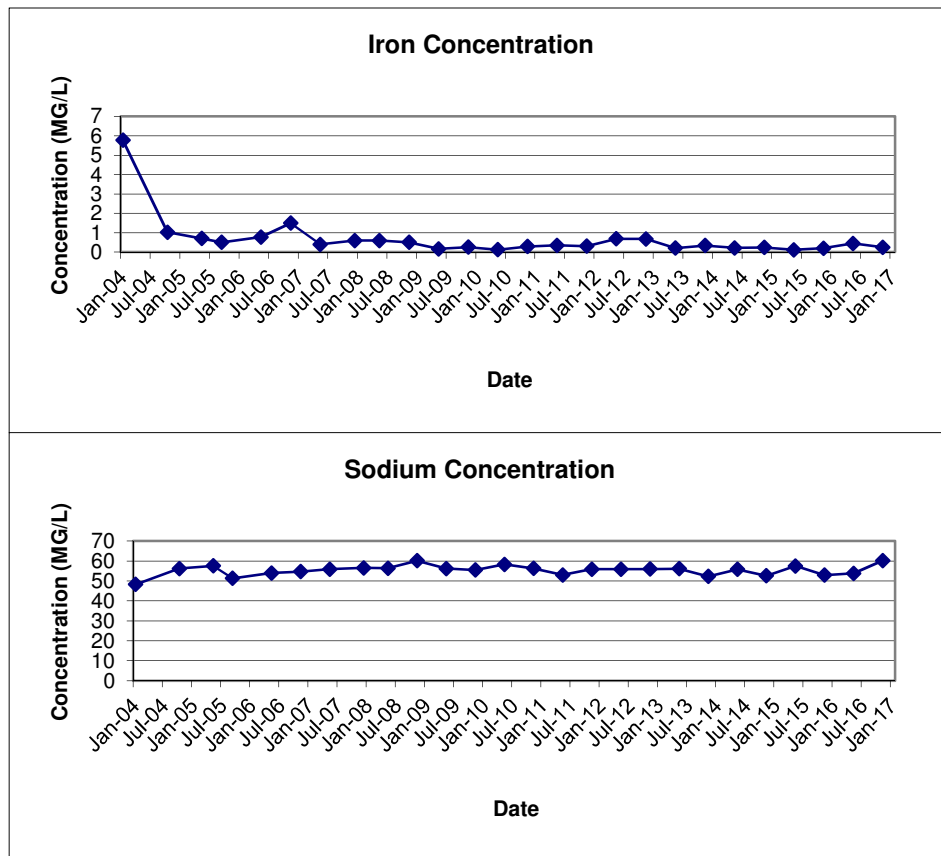


FIGURE E-9
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-08D

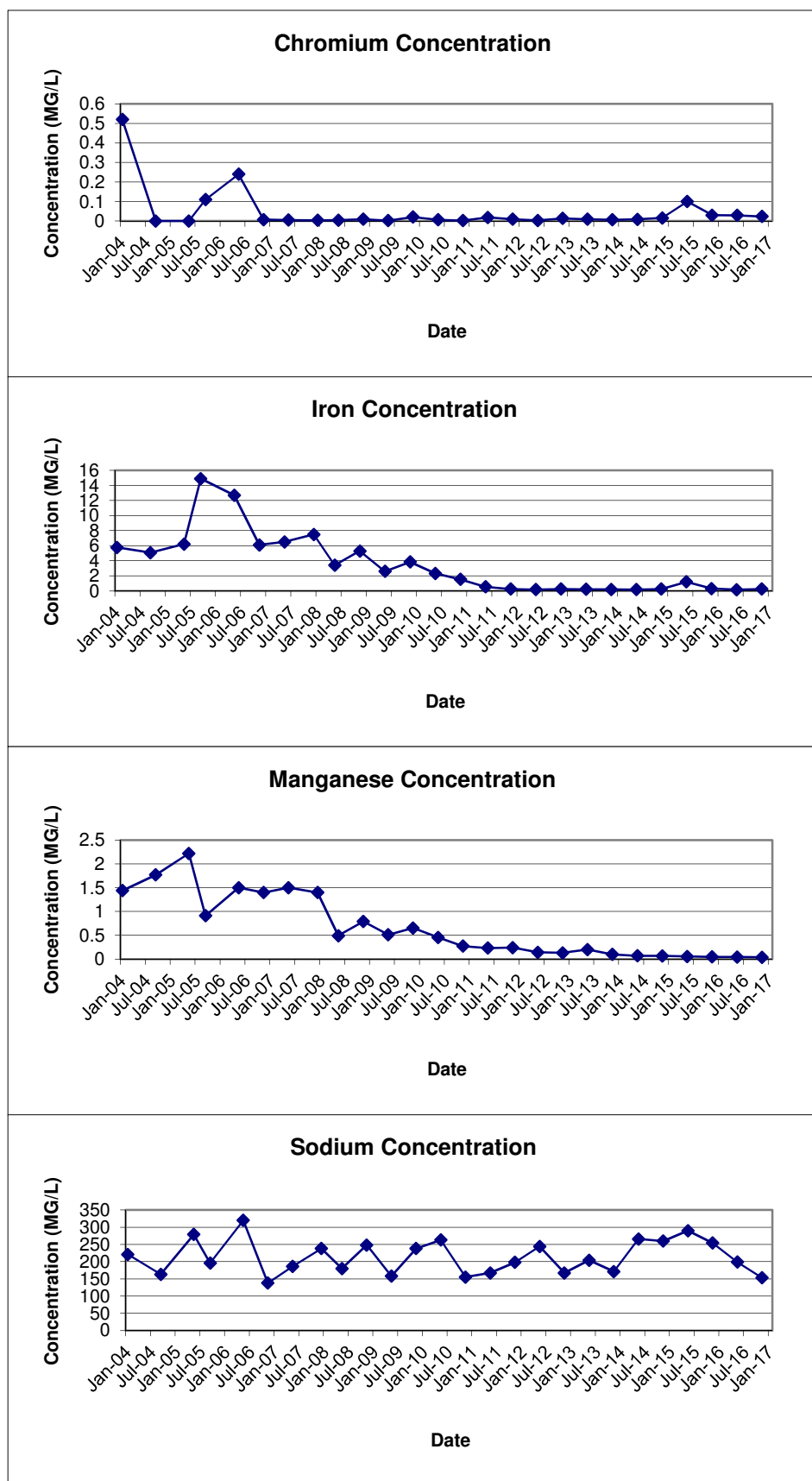


FIGURE E-10
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-08SR

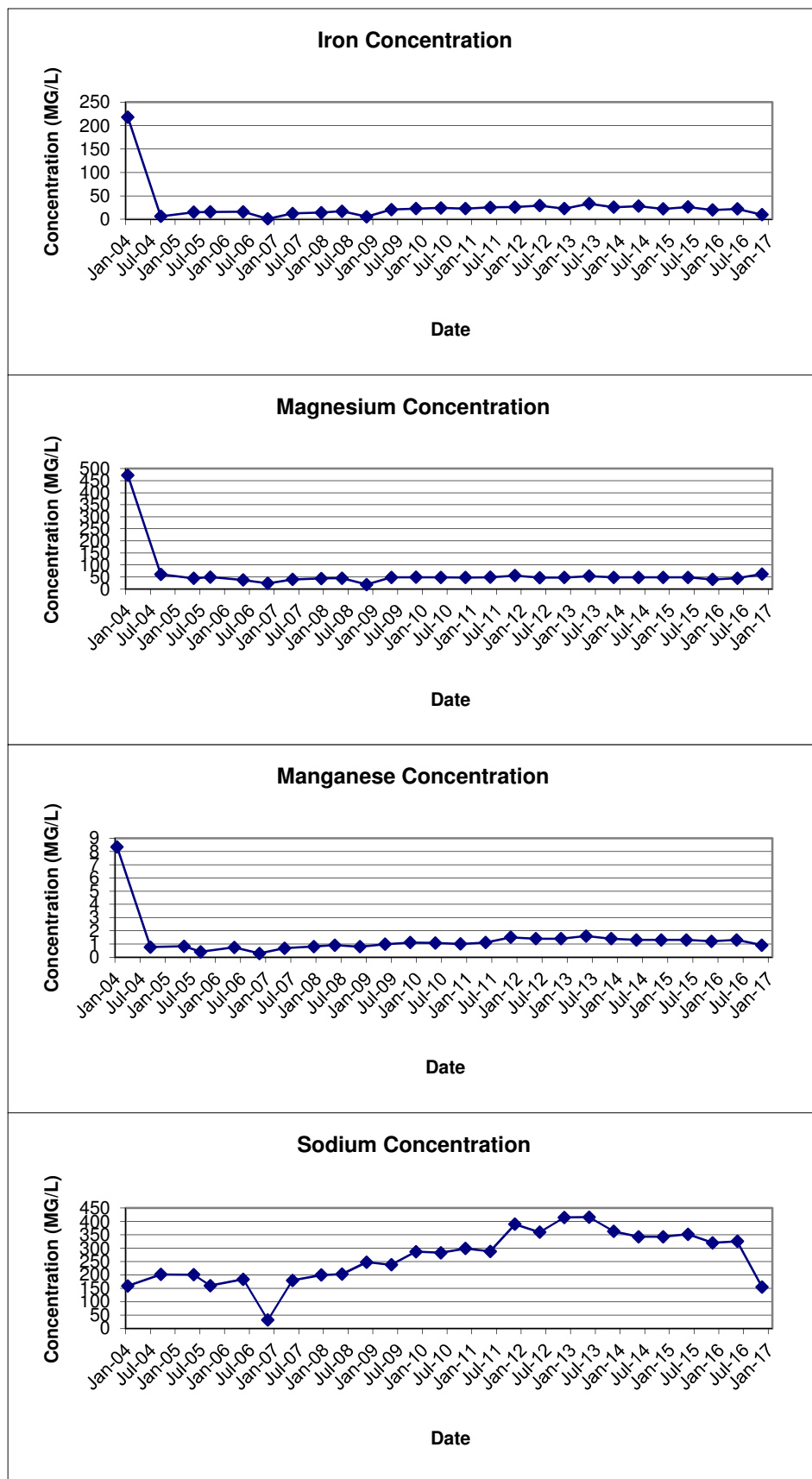


FIGURE E-11
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-26D

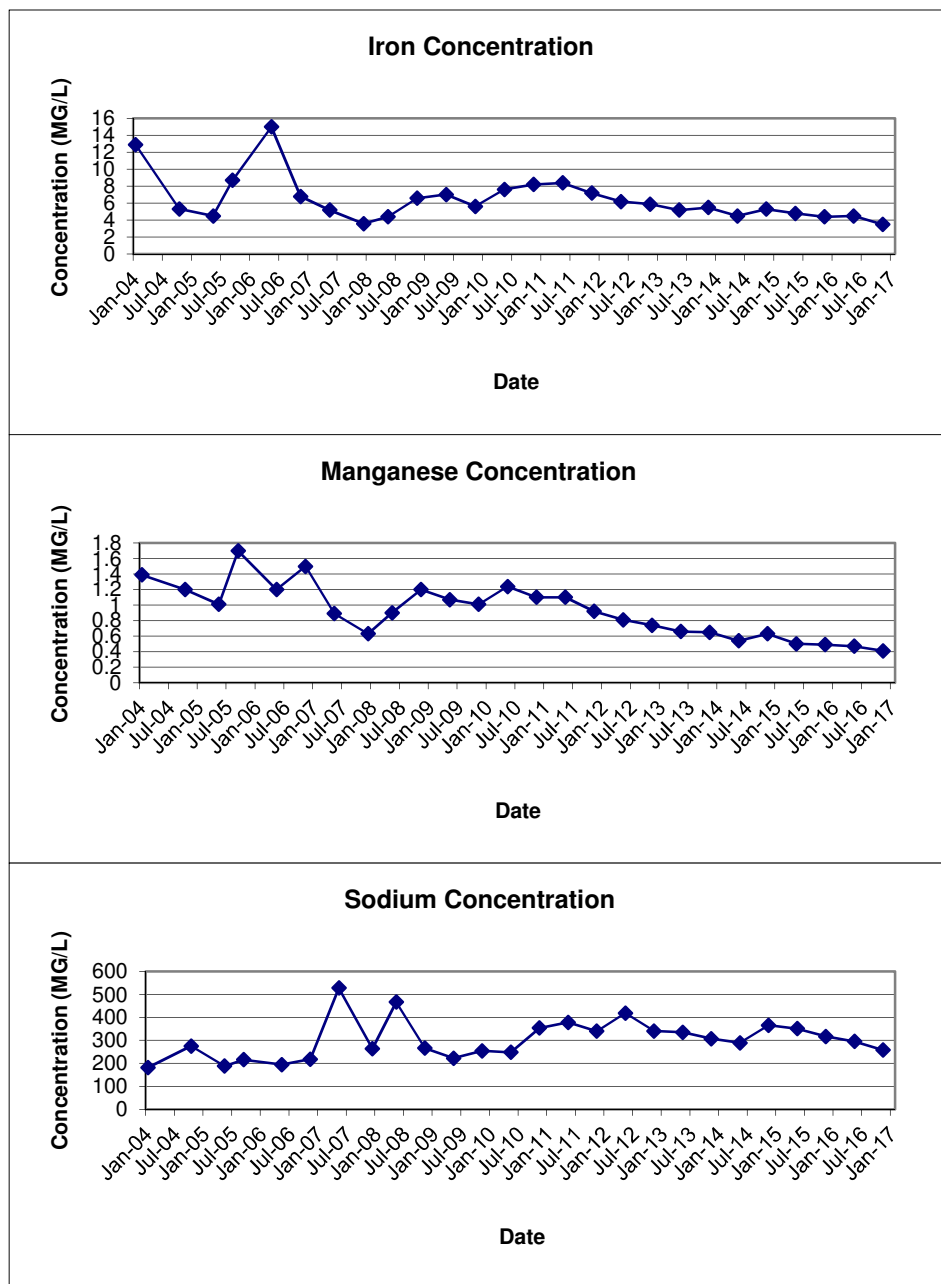


FIGURE E-12
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-28S

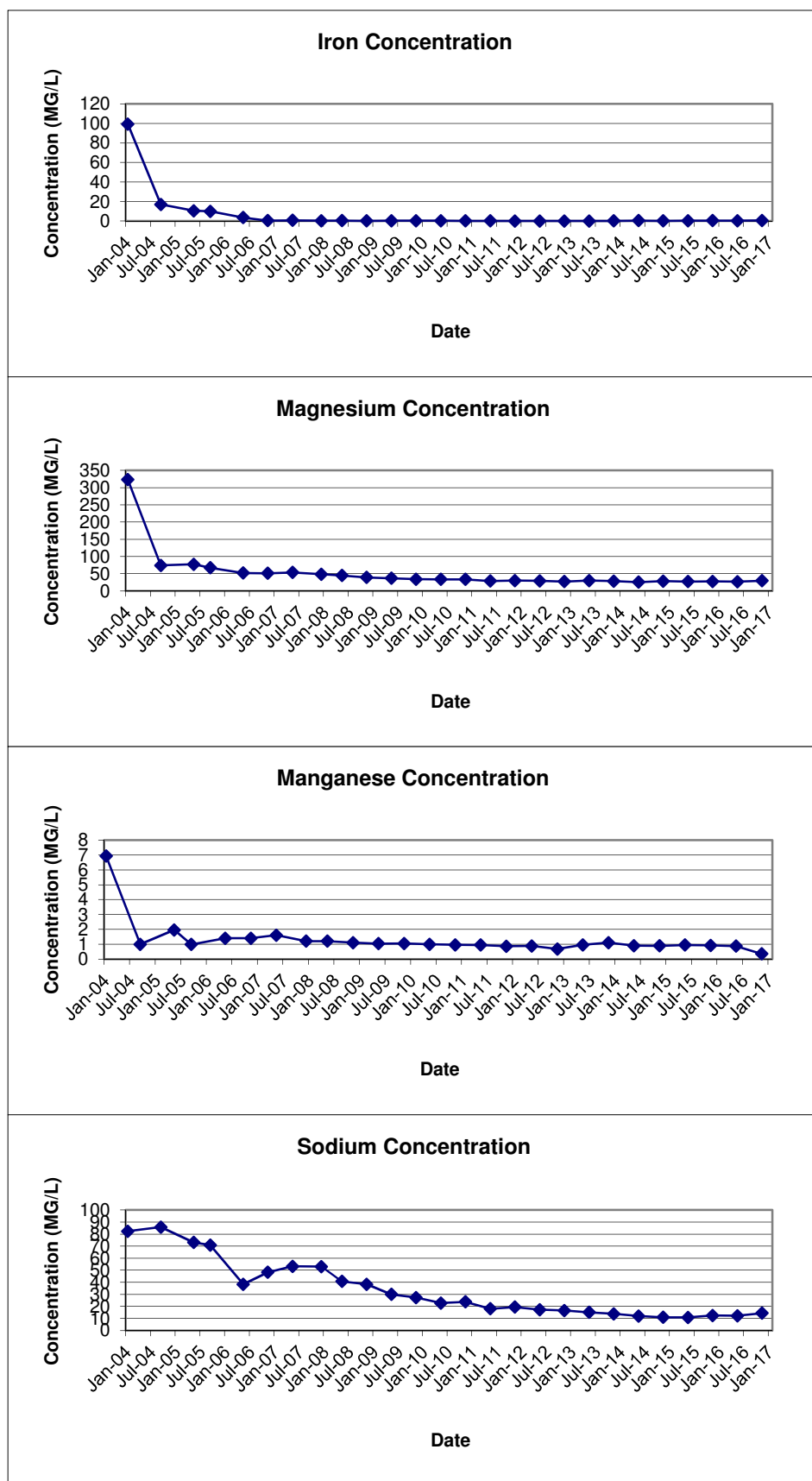


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

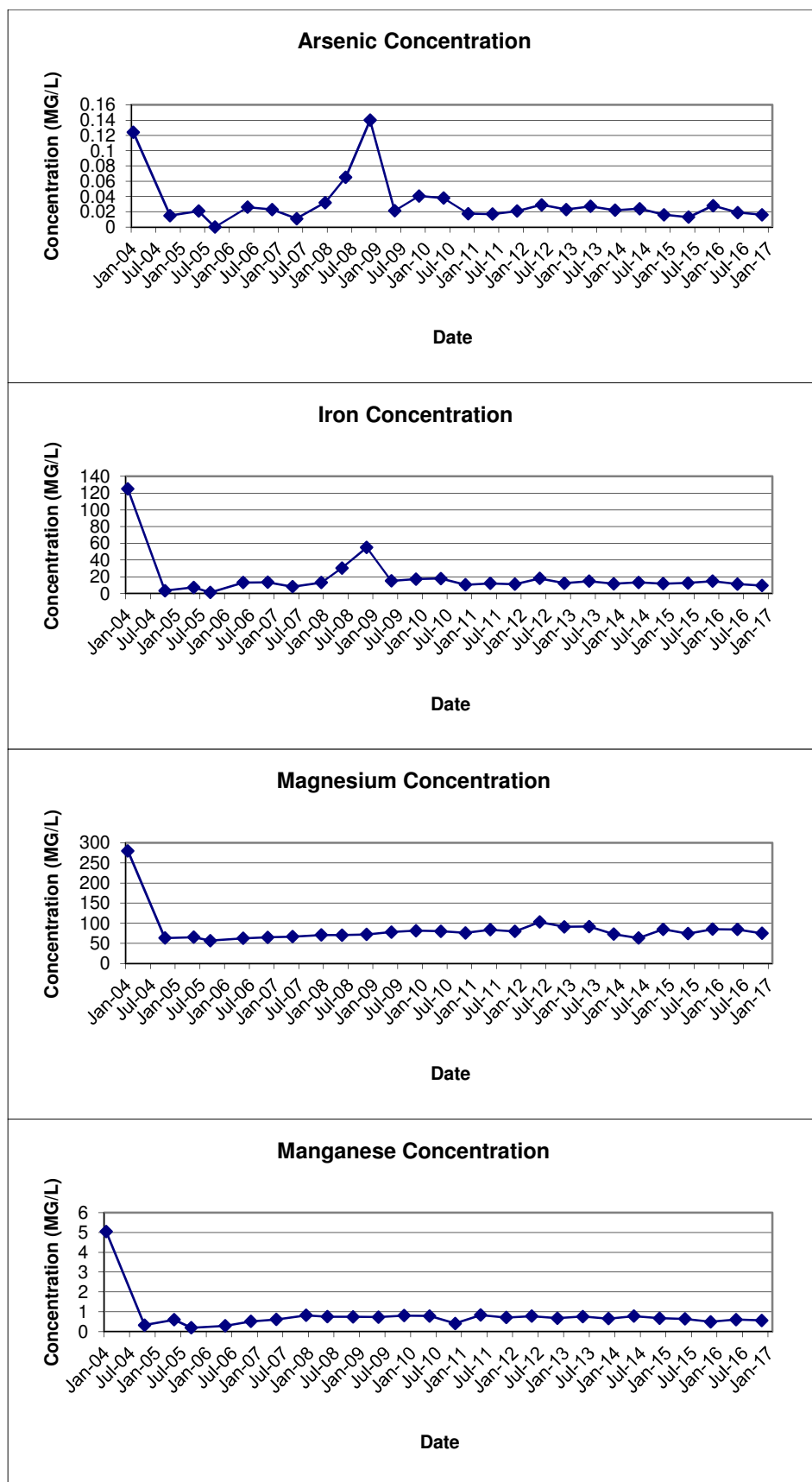


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

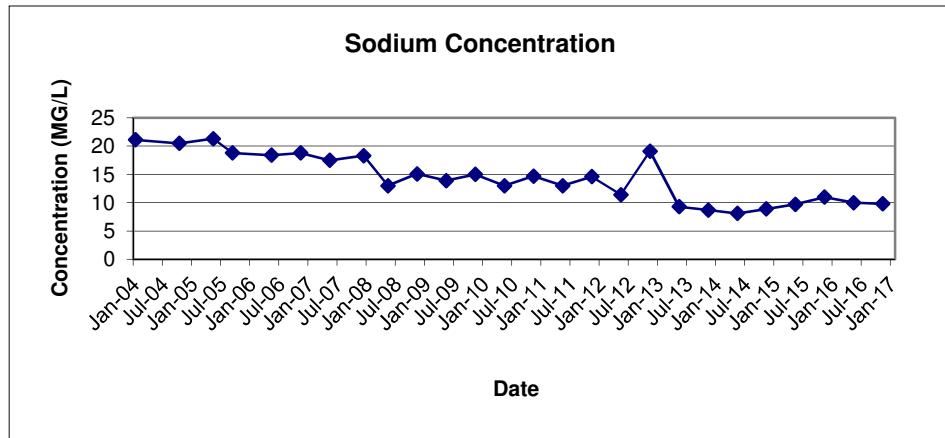


FIGURE E-14
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-30S

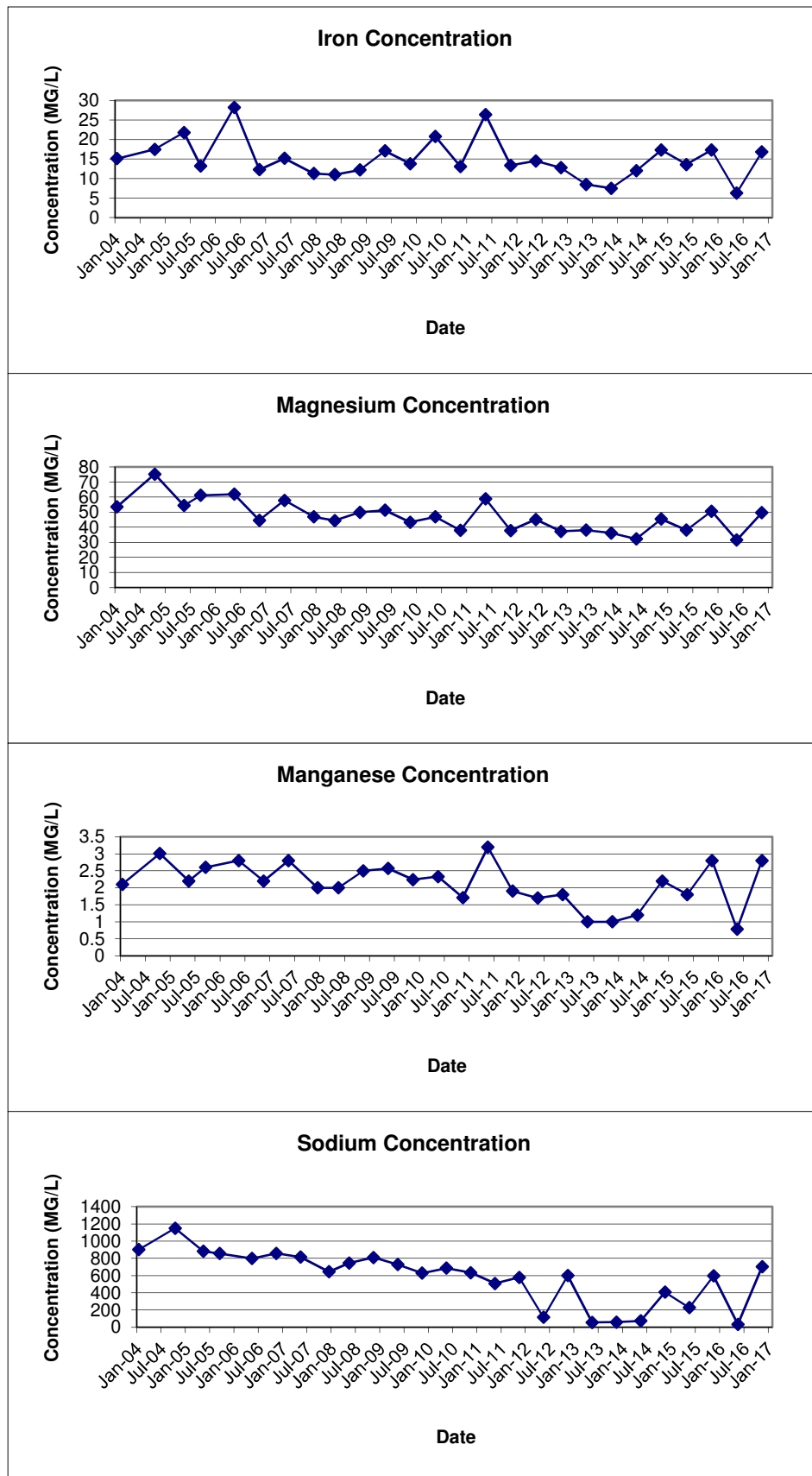


FIGURE E-15
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-31S

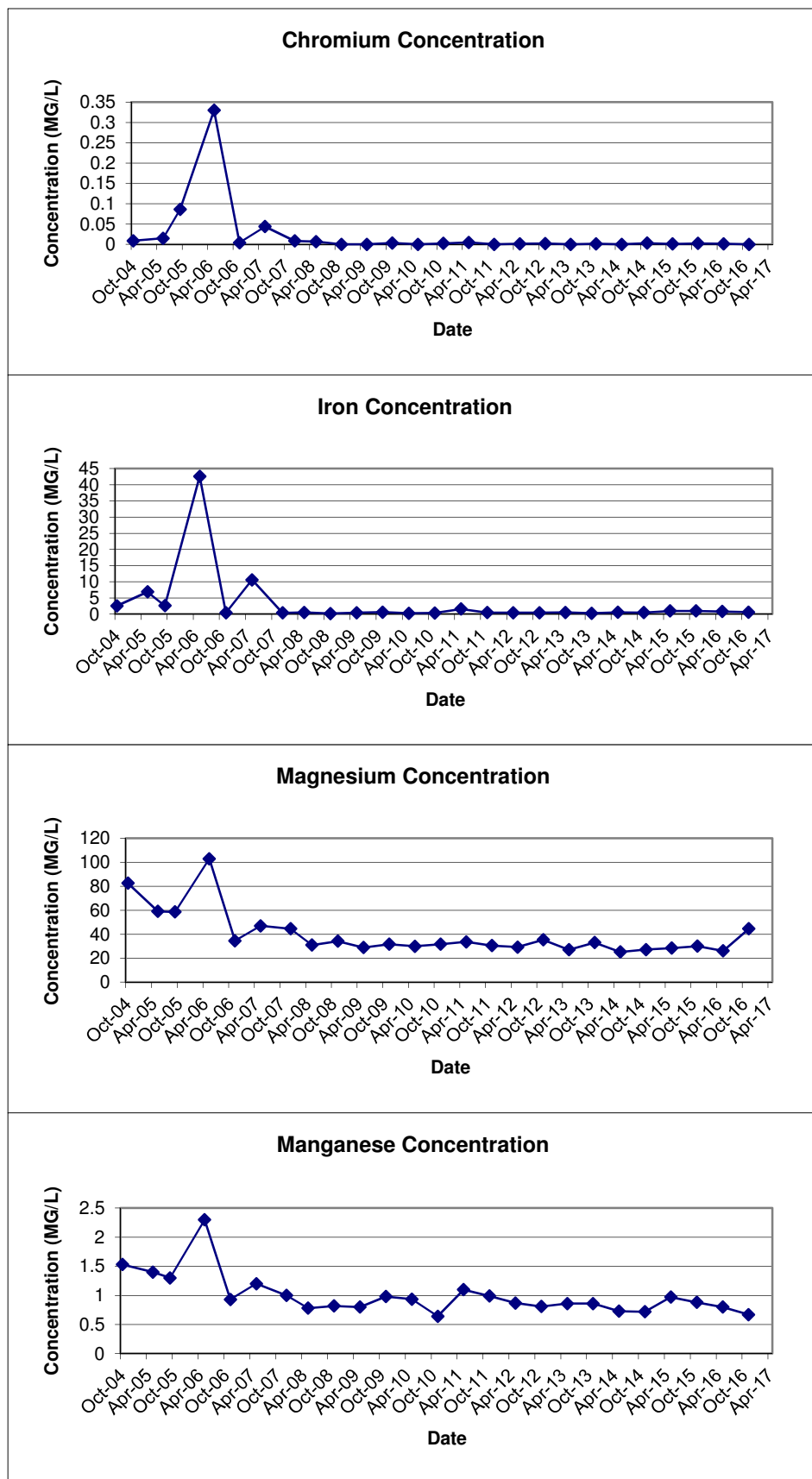


FIGURE E-16
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-32S

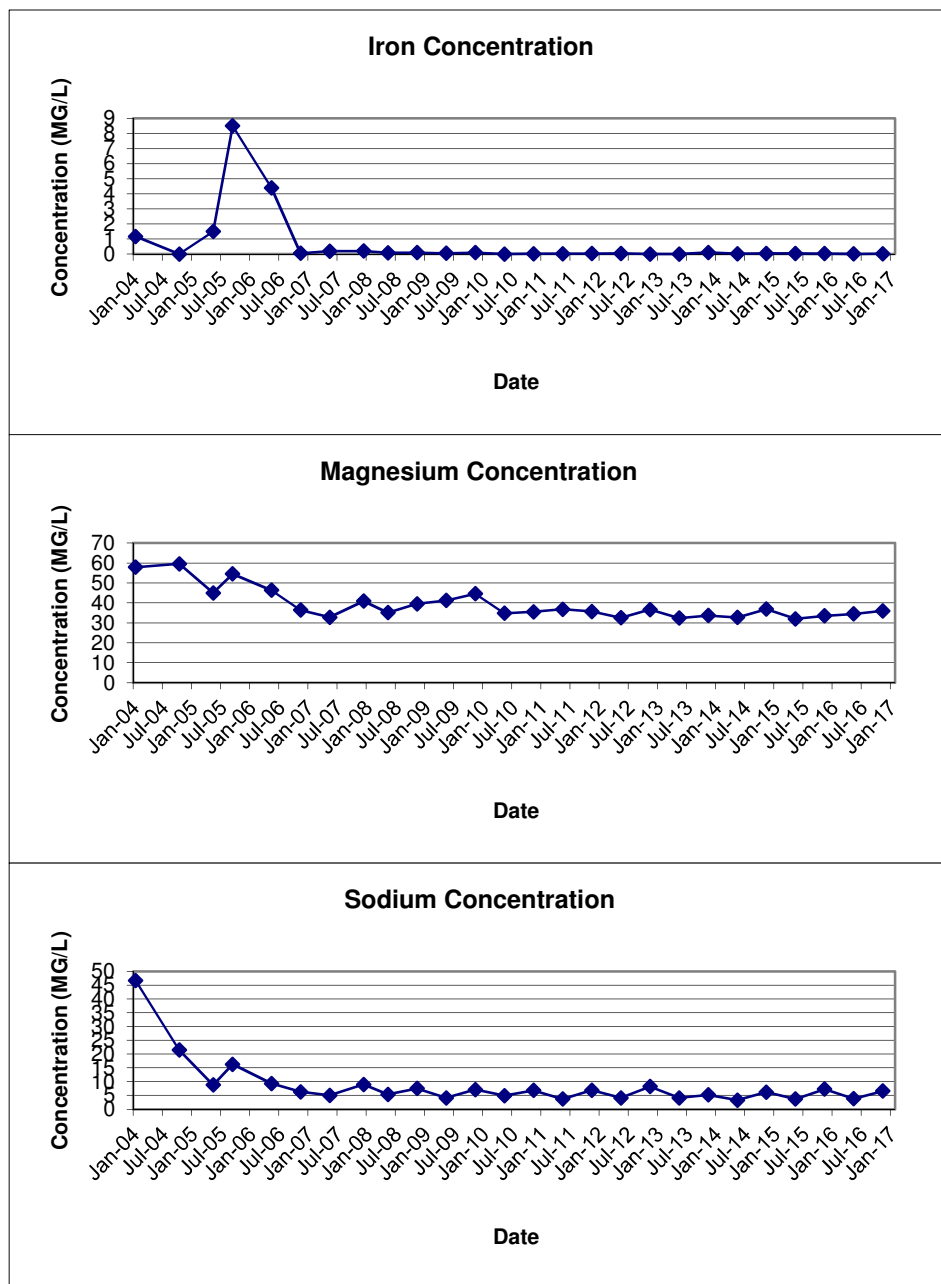


FIGURE E-17
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-33S

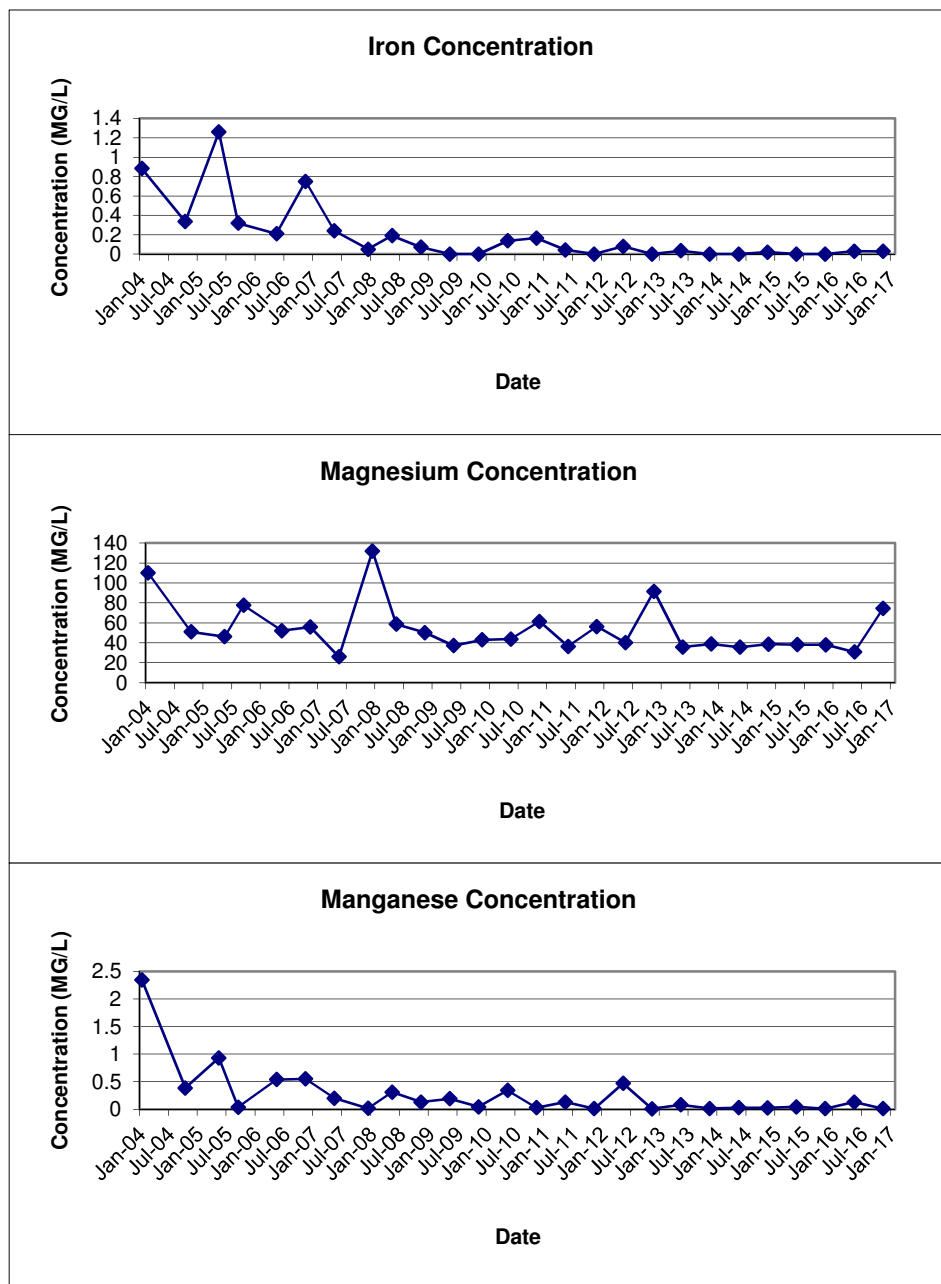


FIGURE E-18
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-34S

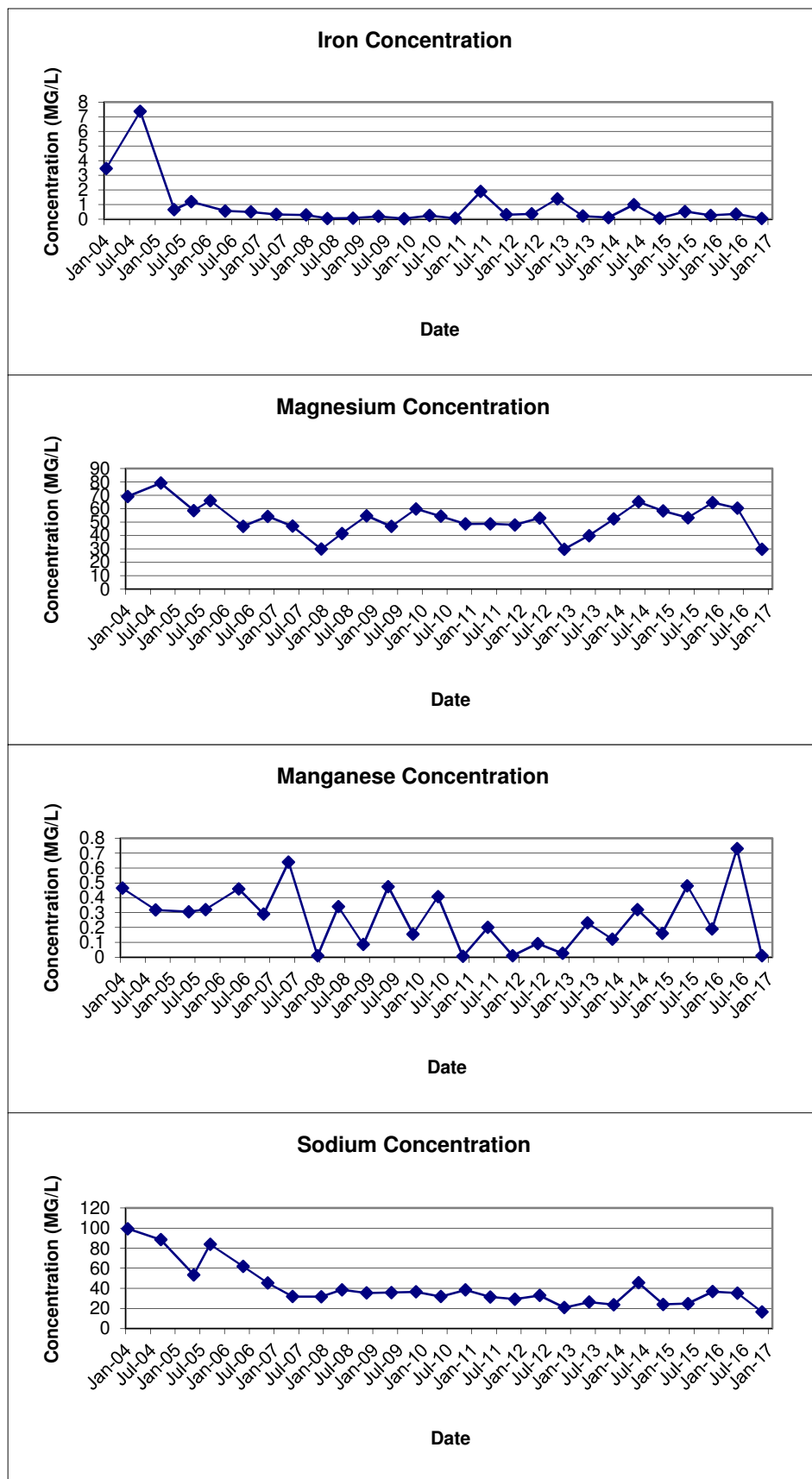
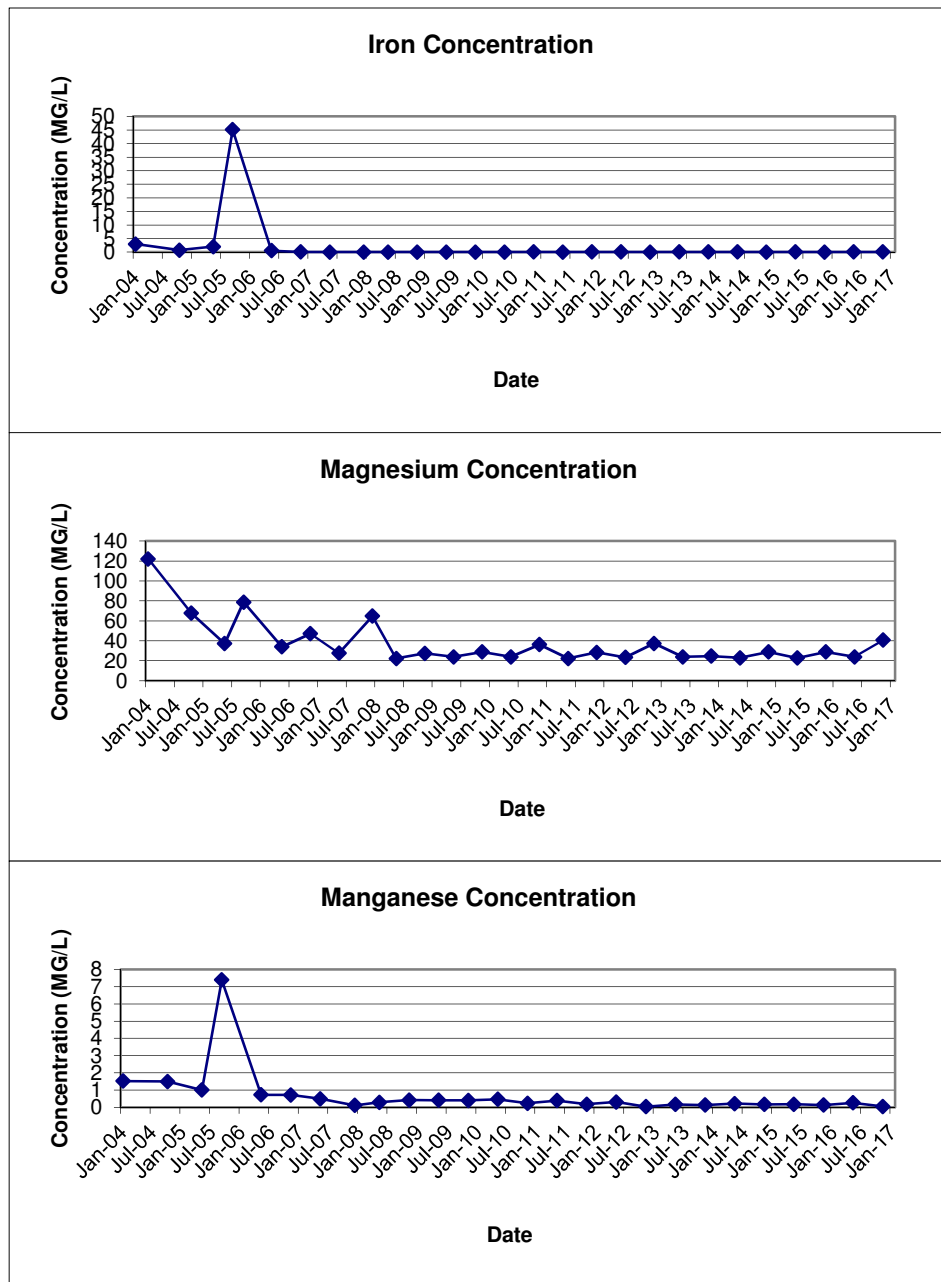


FIGURE E-19
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-35S



APPENDIX F

BSA PERMIT NO. 16-04-CH016

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

PERMIT NO. 16-04-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 **July 6, 2016** 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, 2016

To Expire the 31st day of March, 2019



General Manager

Signed this 11th day of July, 2016

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:

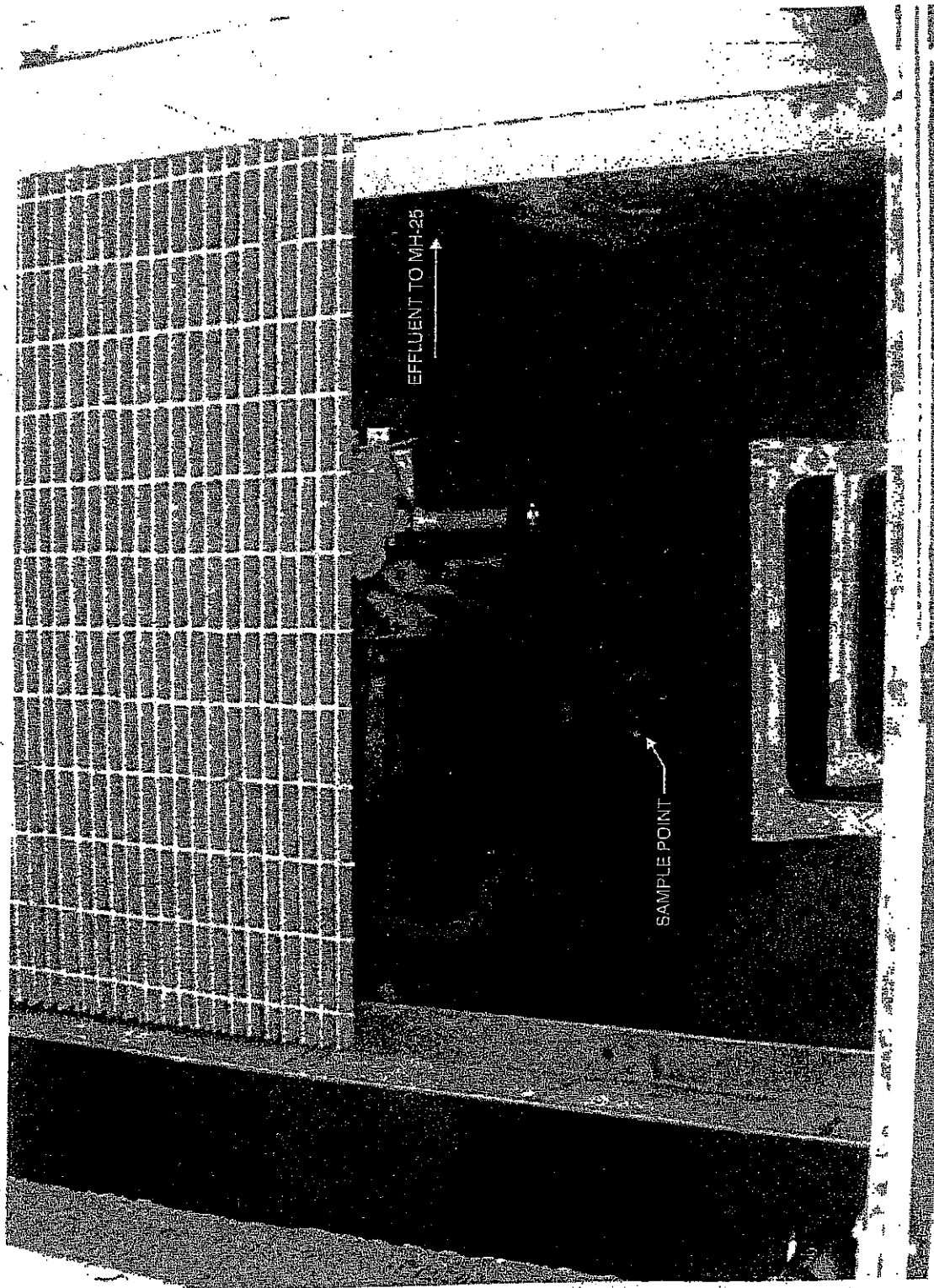
Sample Point	Parameter	Reporting Requirements	
		Initial Report	Subsequent Reports
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	June 30, 2016	Every March 31 st , June 30 th , September 30 th and December 31 st
	USEPA Test Methods 608, 624 and 625 & T Mercury	June 30, 2016	

* Please submit new discharge 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.



URS

PFOHL BROTHERS LANDFILL
EFFLUENT SAMPLE POINT

FIGURE 1

**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:

**PAT BOWEN
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

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.

7. Certification Statement

All self-monitoring reports shall include the following certification statement, signed by the preparer of the report:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the systems, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing

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. Slug Control Plan

Upon written notification by the BSA that a slug control plan is necessary for the permittee, the plan shall be prepared in accordance with the BSA "Sampling Measurement and Analytical Guidelines" sheet. Within 90 days of the BSA notification, the permittee must implement the slug control plan

4. 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 of the quantity and character of such discharge. During normal business hours, Monday- Friday, 7:30 AM – 3:00 PM call 716-851-4664, ext 5374. After normal business hours call 716-851-4664, ext 600. For all slug discharges, and when requested by the B.S.A. following an accidental discharge or spill, 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.

5. 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 716-851-4664 ext. 5374 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.

Additionally, the permittee shall repeat the sampling and analysis and submit these results of the report analysis to the Industrial Waste Section within 30 days after becoming aware of these violations

6. 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.

7. 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.

8. 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.

9. 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.

10. 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.

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.

Revised March 17, 2014 by LS

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: 9/29/16 Crew: R. Murphy, D. Cofield, S. Moeller

Weather: 57° F, Cloudy, drizzle

Sampling Device: NA

Time of Installation: 8:10 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: Well WW-05 was running at the time of sample set-up.

PLC display volumes: WW-01 (353,467 gals), WW-02 (0 gals), WW-03 (0 gals),

WW-04 (328,845 gals), WW-05 (436,512 gals), WW-06 (119,971 gals) & MH-25 (1,237,815 gals).

Date: 9/30/16 Crew: R. Murphy, D.Cofield, K. McGovern

Weather: 56° F, Cloudy

Time of Collection: 8:10

Field Measurements:

8:10/RJM
(time/initial)

pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10

pH Measurement: 7.14

Temperature: 17.4°C

Identification: EFF-093016

Physical Observations: _____

Laboratory: TestAmerica, Buffalo, NY

Comments: Well WW-06 was running at the time of sample collection.

PLC display volumes: WW-01 (353,467 gals), WW-02 (0 gals), WW-03 (0 gals),

WW-04 (328,845 gals), WW-05 (452,056 gals), WW-06 (200,181 gals) & MH-25 (1,333,534 gals).

Reviewed By: _____ Date: _____

(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
SEPTEMBER 2016**

Sample ID	EFF-093016			
Matrix	Effluent Water			
Date Sampled	9/30/2016			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Y/N)
Total Barium	0.29	0.23	2.34	No
Total Cadmuim	< ⁽¹⁾ 0.001	< 0.00080	1.17	No
Total Chromium	< 0.0040	< 0.0032	1.17	No
Total Copper	0.0058	0.005	3.74	No
Total Lead	< 0.0050	< 0.0040	1.17	No
Total Mercury*	< 0.00020	< 0.00016	0.001	No
Total Nickel	0.0057	0.0046	3.27	No
Total Zinc	0.044	0.035	5.84	No
Total Suspended Solids	< 4.0	NA ⁽²⁾	250 ⁽³⁾	No
pH ⁽⁴⁾		NA	5.0 - 12.0	No
bromodichloromethane*	0.00061	NA	NA	No
chloroform*	0.0021	NA	NA	No
methylene chloride*	0.0011	NA	NA	No
n-nitrosodiphenylamine*	0.00067	NA	NA	No
alpha-BHC*	0.000011	NA	NA	No
Total Flow ⁽⁵⁾		95,719	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
- * Mercury and organics analysis performed once per permit duration

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

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: 12/8/16 Crew: R. Murphy, K. McGovern, T. Urban

Weather: 33° F, Cloudy

Sampling Device: NA

Time of Installation: 9:10 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: Wells WW-01, -04, -05, and -06 were running at the time of sample set-up.
PLC display volumes: WW-01 (585,731 gals), WW-02 (0 gals), WW-03 (158 gals),
WW-04 (453,703 gals), WW-05 (1,159,103 gals), WW-06 (1,220,328 gals) & MH-25 (3,418,149 gals).

Date: 12/9/16 Crew: R. Murphy, K. McGovern, T. Urban

Weather: 28° F, Partly Cloudy

Time of Collection: 9:10

Field Measurements:

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

pH Measurement: 7.86

Temperature: 10.0°C

Identification: EFF-120916

Physical Observations: _____

Laboratory: TestAmerica, Buffalo, NY

Comments: Wells WW-04 and WW-05 were running at the time of sample collection.
PLC display volumes: WW-01 (598,546 gals), WW-02 (0 gals), WW-03 (158 gals),
WW-04 (495,287 gals), WW-05 (1,185,513 gals), WW-06 (1,303,138 gals) & MH-25 (3,581,702 gals).

Reviewed By: _____ Date: _____
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
DECEMBER 2016**

Sample ID	EFF-120916			
Matrix	Effluent Water			
Date Sampled	12/9/2016			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Y/N)
Total Barium	0.23	0.31	2.34	No
Total Cadmuim	< ⁽¹⁾ 0.00005	< 0.00007	1.17	No
Total Chromium	< 0.0010	< 0.0014	1.17	No
Total Copper	0.0031	0.004	3.74	No
Total Lead	< 0.0030	< 0.0041	1.17	No
Total Nickel	0.0033	0.0045	3.27	No
Total Zinc	0.016	0.022	5.84	No
Total Suspended Solids	6.4	NA ⁽²⁾	250 ⁽³⁾	No
pH ⁽⁴⁾	7.86	NA	5.0 - 12.0	No
Total Flow ⁽⁵⁾		163,553	140,100	Yes

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
 * Mercury and organics analysis performed once per permit duration

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

APPENDIX H

MONITORING WELL INSPECTION LOGS

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, T. Urban Supervisor: J. Sundquist

Date(s) of Inspection: November 16, 2016

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	4.71	14.94	Replaced Lock
GW-01D	OK	OK	OK	Bulged	3.49	39.65	Replaced Lock
GW-03S	OK	OK	OK	OK	Dry @13.22	13.22	
GW-03D	OK	OK	OK	OK	2.27	35.70	
GW-04S	OK	OK	OK	OK	4.83	16.23	
GW-04D	OK	OK	OK	OK	12.51	45.57	
GW-07S	OK	OK	OK	OK	5.99	35.04	
GW-07D	OK	OK	OK	Damaged	43.47	60.45	

Additional Comments:

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill

Project Number: 60411174

Inspection Crew Members: R. Murphy, T. Urban

Supervisor: J. Sundquist

Date(s) of Inspection: November 16, 2016

<i>Well I.D. Number</i>	<i>Lock</i>	<i>Surface Seal</i>	<i>Protective Casing</i>	<i>Riser</i>	<i>Water Level (ft. BTOC)</i>	<i>Well Depth (ft. BTOC)</i>	<i>Other Comments</i>
GW-08SR	OK	OK	OK	OK	5.22	13.02	
GW-08D	OK	OK	OK	OK	6.16	36.54	
GW-26D	OK	OK	OK	OK	7.00	40.70	
GW-28S	OK	OK	OK	OK	9.68	15.52	
GW-29S	OK	OK	OK	OK	8.90	20.04	
GW-30S	OK	OK	OK	OK	8.20	17.97	
GW-31S	OK	OK	OK	OK	6.16	9.57	
GW-32S	OK	OK	OK	OK	5.40	9.93	

Additional Comments:

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill

Project Number: 60411174

Inspection Crew Members: R. Murphy, T. Urban

Supervisor: J. Sundquist

Date(s) of Inspection: November 16, 2016

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	4.85	8.21	
GW-34S	OK	OK	OK	OK	3.25	10.01	
GW-35S	OK	OK	OK	OK	6.32	7.46	

Additional Comments:

DATA APPLICABILITY REPORT

SEMI-ANNUAL GROUNDWATER MONITORING

PFOHL BROTHERS LANDFILL SITE

Analyses Performed by:

TESTAMERICA LABORATORIES, INC.

10 HAZELWOOD DRIVE

AMHERST, NY 14228

Prepared for:

TOWN OF CHEEKTOWAGA

CHEEKTOWAGA, NY 14225

Prepared by:

URS CORPORATION

257 WEST GENESEE STREET, SUITE 400

BUFFALO, NY 14202-2657

JANUARY 2017

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

APPENDICES

Appendix A – Validated Sample Reporting Forms
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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 November 2016 semi-annual monitoring program at the Pfohl Brothers Landfill Site, located in Cheektowaga, NY.

II. ANALYTICAL METHODOLOGIES AND DATA VALIDATION PROCEDURES

The data being evaluated are from the November 16-18, 2016 sampling of eighteen (18) groundwater samples, one (1) field duplicate, and one (1) matrix spike (MS)/matrix spike duplicate (MSD) pair. A total of two (2) trip blanks, one per sample shipment, were sent to the laboratory along with the samples. The analytical laboratory that performed the analyses was TestAmerica Laboratories, Inc. 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 Method 6010C/7470A. The trip blanks were only analyzed for VOCs.

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

- *National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-2016-002, September 2016.
- *National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-2016-001, September 2016.

The limited data validation 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 validated analytical results are presented on Table 1 (groundwater) and Table 2 (field QC). Copies of the validated 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 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.

Due to the low recharge rates of monitoring wells GW-07D and GW-07S, the VOC aliquots were collected on 11/16/16, while the SVOC/metals aliquots were collected on 11/17/16. All aliquots of sample GW-04S were collected on 11/16/16, however the VOCs were collected at 14:45 pm while the SVOCs/metals were collected at 16:20 pm.

V. NON-CONFORMANCES

The laboratory noted in the case narrative that the continuing calibration verification for vinyl chloride was below the QC limit and indicated a low bias. Therefore the associated samples GW-35S, GW-26D, and TB-1117-1816 (all were non-detect) were qualified 'UJ'. During the limited data review.

The metals method blanks exhibited contamination for manganese (Mn) and zinc (Zn) at concentrations less than the reporting limit (RL). The laboratory qualified the detected results 'B' for Mn in the associated samples. However, since the sample results were greater than ten times the method blank results, and also greater than the RL, the 'B' qualifiers were removed during the

limited data validation. The Zn results for associated samples GW-01D, GW-01S, and GW-04D were qualified 'U' at the RL since their concentrations were less than the RL.

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'.

A field duplicate was collected at groundwater location GW-08D. 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. Those results qualified 'U' (non-detect) during the limited data review are considered conditionally usable. All other sample results are usable as reported. URS does not recommend the recollection of any samples at this time.

Prepared By: Ann Marie Kropovitch, Chemist

Date:

1/23/17

Reviewed by: Peter R. Fairbanks, Senior Chemist

Date:

1/24/17

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-04D	GW-04S
Sample ID		GW-1D	GW-1S	GW-3D	GW-4D	GW-4S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/16/16	11/16/16	11/17/16	11/16/16	11/16/16
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	9.3 U	9.6 U	2.0 J	10 U	NA
1,4-Dichlorobenzene	UG/L	9.3 U	9.6 U	2.9 J	10 U	NA
bis(2-Ethylhexyl)phthalate	UG/L	4.7 U	4.8 U	4.6 U	5.1 U	NA
Phenol	UG/L	4.7 U	4.8 U	4.6 U	5.1 U	NA
Metals						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	NA
Arsenic	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	NA
Barium	MG/L	0.074	0.18	0.042	0.092	NA
Cadmium	MG/L	0.0010 U	0.0013	0.0010 U	0.0010 U	NA
Chromium	MG/L	0.036	0.0044	0.0040 U	0.0027 J	NA
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	NA
Iron	MG/L	0.33	9.1	0.72	0.13	NA
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	NA
Magnesium	MG/L	33.9	20.6	10.0	79.5	NA
Manganese	MG/L	0.020	1.3	0.18	0.020	NA
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	NA
Nickel	MG/L	0.0059 J	0.0013 J	0.0039 J	0.010 U	NA

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/12/16

CHECKED BY: PRF 1/20/17

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-01D	GW-01S	GW-03D	GW-04D	GW-04S
Sample ID		GW-1D	GW-1S	GW-3D	GW-4D	GW-4S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/16/16	11/16/16	11/17/16	11/16/16	11/16/16
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	NA
Sodium	MG/L	103	132	88.0	91.9	NA
Zinc	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	NA

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/12/16

CHECKED BY: PRF 1/20/17

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-4S	GW-7D	GW-7D	GW-7S	GW-7S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/16/16	11/16/16	11/17/16	11/16/16	11/17/16
Parameter	Units					
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	NA	1.0 U	NA	1.0 U	NA
1,2-Dichloroethene (total)	UG/L	NA	2.0 U	NA	2.0 U	NA
Acetone	UG/L	NA	4.0 J	NA	10 U	NA
Benzene	UG/L	NA	1.0 U	NA	1.0 U	NA
Vinyl chloride	UG/L	NA	1.0 U	NA	1.0 U	NA
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	9.7 U	NA	9.7 U	NA	9.4 U
1,4-Dichlorobenzene	UG/L	9.7 U	NA	9.7 U	NA	9.4 U
bis(2-Ethylhexyl)phthalate	UG/L	4.8 U	NA	4.8 U	NA	4.7 U
Phenol	UG/L	4.8 U	NA	4.8 U	NA	4.7 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	0.079	NA	0.31
Cadmium	MG/L	0.0010 U	NA	0.00075 J	NA	0.0010 U
Chromium	MG/L	0.0061	NA	0.12	NA	0.0023 J
Copper	MG/L	0.0028 J	NA	0.017	NA	0.010 U
Iron	MG/L	2.4	NA	4.6	NA	0.25
Lead	MG/L	0.0050 U	NA	0.066	NA	0.0050 U
Magnesium	MG/L	26.9	NA	38.5	NA	38.4
Manganese	MG/L	0.14	NA	0.069	NA	0.038
Mercury	MG/L	0.00020 U	NA	0.00020 U	NA	0.00020 U
Nickel	MG/L	0.0070 J	NA	0.067	NA	0.011

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/12/16

CHECKED BY: PRF 1/20/17

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-4S	GW-7D	GW-7D	GW-7S	GW-7S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/16/16	11/16/16	11/17/16	11/16/16	11/17/16
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	NA	0.0030 U	NA	0.0030 U
Sodium	MG/L	30.6	NA	81.9	NA	60.2
Zinc	MG/L	0.012	NA	0.033	NA	0.0053 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/12/16
 CHECKED BY: PRF 1/20/17

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-08D	GW-08D	GW-08SR	GW-26D	GW-28S
Sample ID		FD-111716	GW-8D	GW-8SR	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/17/16	11/17/16	11/17/16	11/18/16	11/17/16
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	0.97 J	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 UJ	1.0 U
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	9.6 U	9.8 U	9.6 U	9.6 U	9.5 U
1,4-Dichlorobenzene	UG/L	9.6 U	9.8 U	9.6 U	9.6 U	9.5 U
bis(2-Ethylhexyl)phthalate	UG/L	4.8 U	4.9 U	4.8 U	4.8 U	4.8 U
Phenol	UG/L	4.8 U	4.9 U	4.8 U	4.8 U	4.8 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	0.0064 J	0.010 U
Barium	MG/L	0.067	0.070	0.16	0.11	0.097
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.020	0.024	0.014	0.0022 J	0.0040 U
Copper	MG/L	0.0019 J	0.0019 J	0.010 U	0.010 U	0.0021 J
Iron	MG/L	0.20	0.24	9.9	3.5	0.58
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	16.2	16.6	62.3	16.3	29.6
Manganese	MG/L	0.034	0.036	0.90	0.41	0.35
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.0028 J	0.0049 J	0.0092 J	0.0015 J	0.0014 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/12/16

CHECKED BY: PRF 1/20/17

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-08D	GW-08D	GW-08SR	GW-26D	GW-28S
Sample ID		FD-111716	GW-8D	GW-8SR	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/17/16	11/17/16	11/17/16	11/18/16	11/17/16
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	148	153	155	258	14.4
Zinc	MG/L	0.0041 J	0.0051 J	0.0017 J	0.010 U	0.0071 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/12/16

CHECKED BY: PRF 1/20/17

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		11/18/16	11/18/16	11/18/16	11/18/16	11/17/16
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	9.5 U	9.6 U	10 U	9.4 U	10 U
1,4-Dichlorobenzene	UG/L	9.5 U	9.6 U	10 U	9.4 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	4.8 U	4.8 U	5.0 U	4.7 U	5.0 U
Phenol	UG/L	4.8 U	4.8 U	5.0 U	4.7 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	0.19	0.40	0.13	0.067	0.060
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0040 U	0.0012 J	0.0040 U	0.0040 U	0.0058
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	9.5	16.8	0.61	0.022 J	0.029 J
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	74.8	49.7	44.6	36.0	74.6
Manganese	MG/L	0.56	2.8	0.67	0.20	0.0095
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	0.0080 J	0.010 U	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/12/16
 CHECKED BY: PRF 1/20/17

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		11/18/16	11/18/16	11/18/16	11/18/16	11/17/16
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	9.8	704	8.8	6.6	4.1
Zinc	MG/L	0.0016 J	0.010 U	0.0069 J	0.0028 J	0.0035 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/12/16

CHECKED BY: PRF 1/20/17

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		11/17/16	11/18/16
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	9.9 U
1,4-Dichlorobenzene	UG/L	10 U	9.9 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	0.092	0.097
Cadmium	MG/L	0.0010 U	0.0010 U
Chromium	MG/L	0.0035 J	0.0014 J
Copper	MG/L	0.010 U	0.010 U
Iron	MG/L	0.055	0.067
Lead	MG/L	0.0050 U	0.0050 U
Magnesium	MG/L	29.7	40.7
Manganese	MG/L	0.010	0.042
Mercury	MG/L	0.00020 U	0.00020 U
Nickel	MG/L	0.0031 J	0.0036 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/12/16

CHECKED BY: PRF 1/20/17

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		11/17/16	11/18/16
Parameter	Units		
Metals			
Silver	MG/L	0.0030 U	0.0030 U
Sodium	MG/L	16.4	4.9
Zinc	MG/L	0.010 U	0.096

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/12/16

CHECKED BY: PRF 1/20/17

Detection Limits shown are PQL

TABLE 2
VALIDATED FIELD QC SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		FIELDQC	FIELDQC
Sample ID		TB-111616	TB-1117-1816
Matrix		Quality Control	Quality Control
Depth Interval (ft)		-	-
Date Sampled		11/16/16	11/18/16
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 UJ

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/12/16
 CHECKED BY: PRF 1/20/17

Detection Limits shown are PQL

APPENDIX A

VALIDATED SAMPLE REPORTING FORMS

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-7S

Lab Sample ID: 480-109917-1

Date Collected: 11/17/16 08:10

Matrix: Water

Date Received: 11/18/16 14:38

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.4	0.45	ug/L		11/22/16 06:12	11/30/16 13:36	1
1,4-Dichlorobenzene	ND		9.4	0.43	ug/L		11/22/16 06:12	11/30/16 13:36	1
Bis(2-ethylhexyl) phthalate	ND		4.7	2.1	ug/L		11/22/16 06:12	11/30/16 13:36	1
Phenol	ND		4.7	0.37	ug/L		11/22/16 06:12	11/30/16 13:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	79		52 - 132	11/22/16 06:12	11/30/16 13:36	1
2-Fluorobiphenyl	89		48 - 120	11/22/16 06:12	11/30/16 13:36	1
2-Fluorophenol	61		20 - 120	11/22/16 06:12	11/30/16 13:36	1
Nitrobenzene-d5	79		46 - 120	11/22/16 06:12	11/30/16 13:36	1
Phenol-d5	45		16 - 120	11/22/16 06:12	11/30/16 13:36	1
p-Terphenyl-d14	84		67 - 150	11/22/16 06:12	11/30/16 13:36	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 15:31	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 15:31	1
Barium	0.31		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 15:31	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 15:31	1
Chromium	0.0023	J	0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 15:31	1
Copper	ND		0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 15:31	1
Iron	0.25		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 15:31	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 15:31	1
Magnesium	38.4		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 15:31	1
Manganese	0.038	B	0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 15:31	1
Nickel	0.011		0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 15:31	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 15:31	1
Sodium	60.2		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 15:31	1
Zinc	0.0053	J	0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 15:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 13:28	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-7D

Lab Sample ID: 480-109917-2

Date Collected: 11/17/16 08:20

Matrix: Water

Date Received: 11/18/16 14:38

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.7	0.46	ug/L		11/22/16 06:12	11/30/16 14:06	1
1,4-Dichlorobenzene	ND		9.7	0.44	ug/L		11/22/16 06:12	11/30/16 14:06	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		11/22/16 06:12	11/30/16 14:06	1
Phenol	ND		4.8	0.38	ug/L		11/22/16 06:12	11/30/16 14:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	84		52 - 132	11/22/16 06:12	11/30/16 14:06	1
2-Fluorobiphenyl	88		48 - 120	11/22/16 06:12	11/30/16 14:06	1
2-Fluorophenol	57		20 - 120	11/22/16 06:12	11/30/16 14:06	1
Nitrobenzene-d5	76		46 - 120	11/22/16 06:12	11/30/16 14:06	1
Phenol-d5	42		16 - 120	11/22/16 06:12	11/30/16 14:06	1
p-Terphenyl-d14	77		67 - 150	11/22/16 06:12	11/30/16 14:06	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 15:35	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 15:35	1
Barium	0.079		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 15:35	1
Cadmium	0.00075	J	0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 15:35	1
Chromium	0.12		0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 15:35	1
Copper	0.017		0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 15:35	1
Iron	4.6		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 15:35	1
Lead	0.066		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 15:35	1
Magnesium	38.5		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 15:35	1
Manganese	0.069		0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 15:35	1
Nickel	0.067		0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 15:35	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 15:35	1
Sodium	81.9		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 15:35	1
Zinc	0.033		0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 15:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 13:30	1

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11/21/16

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW34S

Lab Sample ID: 480-109917-3

Date Collected: 11/17/16 09:30

Matrix: Water

Date Received: 11/18/16 14:38

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/16 00:52	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 00:52	1
Acetone	ND		10	3.0	ug/L			11/30/16 00:52	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 00:52	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 00:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		11/30/16 00:52	1
Toluene-d8 (Surr)	102		80 - 120		11/30/16 00:52	1
4-Bromofluorobenzene (Surr)	107		73 - 120		11/30/16 00:52	1
Dibromofluoromethane (Surr)	104		75 - 123		11/30/16 00:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/22/16 06:12	11/30/16 14:35	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/22/16 06:12	11/30/16 14:35	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/22/16 06:12	11/30/16 14:35	1
Phenol	ND		5.0	0.39	ug/L		11/22/16 06:12	11/30/16 14:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	75		52 - 132	11/22/16 06:12	11/30/16 14:35	1
2-Fluorobiphenyl	91		48 - 120	11/22/16 06:12	11/30/16 14:35	1
2-Fluorophenol	62		20 - 120	11/22/16 06:12	11/30/16 14:35	1
Nitrobenzene-d5	79		46 - 120	11/22/16 06:12	11/30/16 14:35	1
Phenol-d5	47		16 - 120	11/22/16 06:12	11/30/16 14:35	1
p-Terphenyl-d14	89		67 - 150	11/22/16 06:12	11/30/16 14:35	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 15:49	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 15:49	1
Barium	0.092		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 15:49	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 15:49	1
Chromium	0.0035	J	0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 15:49	1
Copper	ND		0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 15:49	1
Iron	0.055		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 15:49	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 15:49	1
Magnesium	29.7		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 15:49	1
Manganese	0.010	B	0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 15:49	1
Nickel	0.0031	J	0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 15:49	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 15:49	1
Sodium	16.4		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 15:49	1
Zinc	ND		0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 15:49	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 13:32	1

4/12/16

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-3D

Lab Sample ID: 480-109917-4

Date Collected: 11/17/16 11:00

Matrix: Water

Date Received: 11/18/16 14:38

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			11/30/16 01:16	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 01:16	1
Acetone	ND		10	3.0	ug/L			11/30/16 01:16	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 01:16	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 01:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		77 - 120		11/30/16 01:16	1
Toluene-d8 (Surr)	100		80 - 120		11/30/16 01:16	1
4-Bromofluorobenzene (Surr)	106		73 - 120		11/30/16 01:16	1
Dibromofluoromethane (Surr)	102		75 - 123		11/30/16 01:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	2.0	J	9.2	0.44	ug/L		11/22/16 06:12	11/30/16 15:05	1
1,4-Dichlorobenzene	2.9	J	9.2	0.42	ug/L		11/22/16 06:12	11/30/16 15:05	1
Bis(2-ethylhexyl) phthalate	ND	F2	4.6	2.0	ug/L		11/22/16 06:12	11/30/16 15:05	1
Phenol	ND		4.6	0.36	ug/L		11/22/16 06:12	11/30/16 15:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	79		52 - 132	11/22/16 06:12	11/30/16 15:05	1
2-Fluorobiphenyl	91		48 - 120	11/22/16 06:12	11/30/16 15:05	1
2-Fluorophenol	62		20 - 120	11/22/16 06:12	11/30/16 15:05	1
Nitrobenzene-d5	78		46 - 120	11/22/16 06:12	11/30/16 15:05	1
Phenol-d5	44		16 - 120	11/22/16 06:12	11/30/16 15:05	1
p-Terphenyl-d14	96		67 - 150	11/22/16 06:12	11/30/16 15:05	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 15:53	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 15:53	1
Barium	0.042		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 15:53	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 15:53	1
Chromium	ND		0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 15:53	1
Copper	ND		0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 15:53	1
Iron	0.72		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 15:53	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 15:53	1
Magnesium	10.0		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 15:53	1
Manganese	0.18		0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 15:53	1
Nickel	0.0039	J	0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 15:53	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 15:53	1
Sodium	88.0		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 15:53	1
Zinc	ND		0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 15:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 13:37	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-8D

Lab Sample ID: 480-109917-5

Date Collected: 11/17/16 12:30

Matrix: Water

Date Received: 11/18/16 14:38

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			11/30/16 01:40	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 01:40	1
Acetone	ND		10	3.0	ug/L			11/30/16 01:40	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 01:40	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 01:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		77 - 120		11/30/16 01:40	1
Toluene-d8 (Surr)	100		80 - 120		11/30/16 01:40	1
4-Bromofluorobenzene (Surr)	105		73 - 120		11/30/16 01:40	1
Dibromofluoromethane (Surr)	108		75 - 123		11/30/16 01:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.8	0.47	ug/L		11/22/16 06:12	11/30/16 15:34	1
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		11/22/16 06:12	11/30/16 15:34	1
Bis(2-ethylhexyl) phthalate	ND		4.9	2.2	ug/L		11/22/16 06:12	11/30/16 15:34	1
Phenol	ND		4.9	0.38	ug/L		11/22/16 06:12	11/30/16 15:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	74		52 - 132	11/22/16 06:12	11/30/16 15:34	1
2-Fluorobiphenyl	82		48 - 120	11/22/16 06:12	11/30/16 15:34	1
2-Fluorophenol	57		20 - 120	11/22/16 06:12	11/30/16 15:34	1
Nitrobenzene-d5	69		46 - 120	11/22/16 06:12	11/30/16 15:34	1
Phenol-d5	44		16 - 120	11/22/16 06:12	11/30/16 15:34	1
p-Terphenyl-d14	87		67 - 150	11/22/16 06:12	11/30/16 15:34	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 16:10	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 16:10	1
Barium	0.070		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 16:10	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 16:10	1
Chromium	0.024		0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 16:10	1
Copper	0.0019	J	0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 16:10	1
Iron	0.24		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 16:10	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 16:10	1
Magnesium	16.6		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 16:10	1
Manganese	0.036		0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 16:10	1
Nickel	0.0049	J	0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 16:10	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 16:10	1
Sodium	153		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 16:10	1
Zinc	0.0051	J	0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 16:10	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 13:45	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: FD-111716

Lab Sample ID: 480-109917-6

Date Collected: 11/17/16 00:00

Matrix: Water

Date Received: 11/18/16 14:38

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/16 02:04	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 02:04	1
Acetone	ND		10	3.0	ug/L			11/30/16 02:04	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 02:04	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 02:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	105		77 - 120		11/30/16 02:04	1
Toluene-d8 (Surr)	102		80 - 120		11/30/16 02:04	1
4-Bromofluorobenzene (Surr)	105		73 - 120		11/30/16 02:04	1
Dibromofluoromethane (Surr)	104		75 - 123		11/30/16 02:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.6	0.46	ug/L		11/22/16 06:12	11/30/16 16:04	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		11/22/16 06:12	11/30/16 16:04	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		11/22/16 06:12	11/30/16 16:04	1
Phenol	ND		4.8	0.37	ug/L		11/22/16 06:12	11/30/16 16:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	70		52 - 132	11/22/16 06:12	11/30/16 16:04	1
2-Fluorobiphenyl	84		48 - 120	11/22/16 06:12	11/30/16 16:04	1
2-Fluorophenol	55		20 - 120	11/22/16 06:12	11/30/16 16:04	1
Nitrobenzene-d5	72		46 - 120	11/22/16 06:12	11/30/16 16:04	1
Phenol-d5	45		16 - 120	11/22/16 06:12	11/30/16 16:04	1
p-Terphenyl-d14	92		67 - 150	11/22/16 06:12	11/30/16 16:04	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 16:14	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 16:14	1
Barium	0.067		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 16:14	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 16:14	1
Chromium	0.020		0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 16:14	1
Copper	0.0019	J	0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 16:14	1
Iron	0.20		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 16:14	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 16:14	1
Magnesium	16.2		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 16:14	1
Manganese	0.034		0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 16:14	1
Nickel	0.0028	J	0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 16:14	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 16:14	1
Sodium	148		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 16:14	1
Zinc	0.0041	J	0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 16:14	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 13:47	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-8SR

Lab Sample ID: 480-109917-7

Date Collected: 11/17/16 13:20

Matrix: Water

Date Received: 11/18/16 14:38

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/16 02:28	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 02:28	1
Acetone	ND		10	3.0	ug/L			11/30/16 02:28	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 02:28	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 02:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	106		77 - 120		11/30/16 02:28	1
Toluene-d8 (Surr)	101		80 - 120		11/30/16 02:28	1
4-Bromofluorobenzene (Surr)	105		73 - 120		11/30/16 02:28	1
Dibromofluoromethane (Surr)	106		75 - 123		11/30/16 02:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.6	0.46	ug/L		11/22/16 06:12	11/30/16 16:33	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		11/22/16 06:12	11/30/16 16:33	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		11/22/16 06:12	11/30/16 16:33	1
Phenol	ND		4.8	0.37	ug/L		11/22/16 06:12	11/30/16 16:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	81		52 - 132	11/22/16 06:12	11/30/16 16:33	1
2-Fluorobiphenyl	76		48 - 120	11/22/16 06:12	11/30/16 16:33	1
2-Fluorophenol	53		20 - 120	11/22/16 06:12	11/30/16 16:33	1
Nitrobenzene-d5	65		46 - 120	11/22/16 06:12	11/30/16 16:33	1
Phenol-d5	41		16 - 120	11/22/16 06:12	11/30/16 16:33	1
p-Terphenyl-d14	79		67 - 150	11/22/16 06:12	11/30/16 16:33	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 16:17	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 16:17	1
Barium	0.16		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 16:17	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 16:17	1
Chromium	0.014		0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 16:17	1
Copper	ND		0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 16:17	1
Iron	9.9		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 16:17	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 16:17	1
Magnesium	62.3		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 16:17	1
Manganese	0.90		0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 16:17	1
Nickel	0.0092	J	0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 16:17	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 16:17	1
Sodium	155		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 16:17	1
Zinc	0.0017	J	0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 16:17	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 13:48	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-28S

Lab Sample ID: 480-109917-8

Date Collected: 11/17/16 14:10

Matrix: Water

Date Received: 11/18/16 14:38

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/16 02:52	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 02:52	1
Acetone	ND		10	3.0	ug/L			11/30/16 02:52	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 02:52	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 02:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	104		77 - 120		11/30/16 02:52	1
Toluene-d8 (Surr)	103		80 - 120		11/30/16 02:52	1
4-Bromofluorobenzene (Surr)	107		73 - 120		11/30/16 02:52	1
Dibromofluoromethane (Surr)	105		75 - 123		11/30/16 02:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.5	0.46	ug/L		11/22/16 06:12	11/30/16 17:03	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		11/22/16 06:12	11/30/16 17:03	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		11/22/16 06:12	11/30/16 17:03	1
Phenol	ND		4.8	0.37	ug/L		11/22/16 06:12	11/30/16 17:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	77		52 - 132	11/22/16 06:12	11/30/16 17:03	1
2-Fluorobiphenyl	79		48 - 120	11/22/16 06:12	11/30/16 17:03	1
2-Fluorophenol	57		20 - 120	11/22/16 06:12	11/30/16 17:03	1
Nitrobenzene-d5	69		46 - 120	11/22/16 06:12	11/30/16 17:03	1
Phenol-d5	43		16 - 120	11/22/16 06:12	11/30/16 17:03	1
p-Terphenyl-d14	81		67 - 150	11/22/16 06:12	11/30/16 17:03	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 16:32	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 16:32	1
Barium	0.097		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 16:32	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 16:32	1
Chromium	ND		0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 16:32	1
Copper	0.0021	J	0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 16:32	1
Iron	0.58		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 16:32	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 16:32	1
Magnesium	29.6		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 16:32	1
Manganese	0.35	B	0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 16:32	1
Nickel	0.0014	J	0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 16:32	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 16:32	1
Sodium	14.4		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 16:32	1
Zinc	0.0071	J	0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 16:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 13:50	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-33S

Lab Sample ID: 480-109917-9

Date Collected: 11/17/16 15:05

Matrix: Water

Date Received: 11/18/16 14:38

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/16 03:16	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 03:16	1
Acetone	ND		10	3.0	ug/L			11/30/16 03:16	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 03:16	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 03:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	106		77 - 120		11/30/16 03:16	1
Toluene-d8 (Surr)	99		80 - 120		11/30/16 03:16	1
4-Bromofluorobenzene (Surr)	103		73 - 120		11/30/16 03:16	1
Dibromofluoromethane (Surr)	106		75 - 123		11/30/16 03:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/22/16 06:12	11/30/16 17:33	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/22/16 06:12	11/30/16 17:33	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/22/16 06:12	11/30/16 17:33	1
Phenol	ND		5.0	0.39	ug/L		11/22/16 06:12	11/30/16 17:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	71		52 - 132	11/22/16 06:12	11/30/16 17:33	1
2-Fluorobiphenyl	84		48 - 120	11/22/16 06:12	11/30/16 17:33	1
2-Fluorophenol	59		20 - 120	11/22/16 06:12	11/30/16 17:33	1
Nitrobenzene-d5	73		46 - 120	11/22/16 06:12	11/30/16 17:33	1
Phenol-d5	46		16 - 120	11/22/16 06:12	11/30/16 17:33	1
p-Terphenyl-d14	88		67 - 150	11/22/16 06:12	11/30/16 17:33	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 16:35	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 16:35	1
Barium	0.060		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 16:35	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 16:35	1
Chromium	0.0058		0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 16:35	1
Copper	ND		0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 16:35	1
Iron	0.029	J	0.050	0.019	mg/L		11/21/16 17:24	11/25/16 16:35	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 16:35	1
Magnesium	74.6		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 16:35	1
Manganese	0.0095	E	0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 16:35	1
Nickel	ND		0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 16:35	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 16:35	1
Sodium	4.1		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 16:35	1
Zinc	0.0035	J	0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 16:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 13:52	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-29S

Lab Sample ID: 480-109917-10

Date Collected: 11/18/16 08:49

Matrix: Water

Date Received: 11/18/16 14:38

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/16 16:22	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 16:22	1
Acetone	ND		10	3.0	ug/L			11/30/16 16:22	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 16:22	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 16:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	105		77 - 120		11/30/16 16:22	1
Toluene-d8 (Surr)	100		80 - 120		11/30/16 16:22	1
4-Bromofluorobenzene (Surr)	95		73 - 120		11/30/16 16:22	1
Dibromofluoromethane (Surr)	104		75 - 123		11/30/16 16:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.5	0.46	ug/L		11/22/16 06:12	11/30/16 18:02	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		11/22/16 06:12	11/30/16 18:02	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		11/22/16 06:12	11/30/16 18:02	1
Phenol	ND		4.8	0.37	ug/L		11/22/16 06:12	11/30/16 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	80		52 - 132	11/22/16 06:12	11/30/16 18:02	1
2-Fluorobiphenyl	87		48 - 120	11/22/16 06:12	11/30/16 18:02	1
2-Fluorophenol	60		20 - 120	11/22/16 06:12	11/30/16 18:02	1
Nitrobenzene-d5	75		46 - 120	11/22/16 06:12	11/30/16 18:02	1
Phenol-d5	46		16 - 120	11/22/16 06:12	11/30/16 18:02	1
p-Terphenyl-d14	83		67 - 150	11/22/16 06:12	11/30/16 18:02	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 16:39	1
Arsenic	0.016		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 16:39	1
Barium	0.19		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 16:39	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 16:39	1
Chromium	ND		0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 16:39	1
Copper	ND		0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 16:39	1
Iron	9.5		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 16:39	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 16:39	1
Magnesium	74.8		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 16:39	1
Manganese	0.56		0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 16:39	1
Nickel	ND		0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 16:39	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 16:39	1
Sodium	9.8		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 16:39	1
Zinc	0.0016	J	0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 16:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 13:54	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-30S

Lab Sample ID: 480-109917-11

Date Collected: 11/18/16 09:40

Matrix: Water

Date Received: 11/18/16 14:38

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/16 16:45	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 16:45	1
Acetone	ND		10	3.0	ug/L			11/30/16 16:45	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 16:45	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 16:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	105		77 - 120		11/30/16 16:45	1
Toluene-d8 (Surr)	100		80 - 120		11/30/16 16:45	1
4-Bromofluorobenzene (Surr)	93		73 - 120		11/30/16 16:45	1
Dibromofluoromethane (Surr)	103		75 - 123		11/30/16 16:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.6	0.46	ug/L		11/22/16 06:12	11/30/16 18:31	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		11/22/16 06:12	11/30/16 18:31	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		11/22/16 06:12	11/30/16 18:31	1
Phenol	ND		4.8	0.38	ug/L		11/22/16 06:12	11/30/16 18:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	85		52 - 132	11/22/16 06:12	11/30/16 18:31	1
2-Fluorobiphenyl	88		48 - 120	11/22/16 06:12	11/30/16 18:31	1
2-Fluorophenol	61		20 - 120	11/22/16 06:12	11/30/16 18:31	1
Nitrobenzene-d5	75		46 - 120	11/22/16 06:12	11/30/16 18:31	1
Phenol-d5	47		16 - 120	11/22/16 06:12	11/30/16 18:31	1
p-Terphenyl-d14	80		67 - 150	11/22/16 06:12	11/30/16 18:31	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 16:43	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 16:43	1
Barium	0.40		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 16:43	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 16:43	1
Chromium	0.0012	J	0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 16:43	1
Copper	ND		0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 16:43	1
Iron	16.8		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 16:43	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 16:43	1
Magnesium	49.7		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 16:43	1
Manganese	2.8		0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 16:43	1
Nickel	ND		0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 16:43	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 16:43	1
Sodium	704		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 16:43	1
Zinc	ND		0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 16:43	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 14:00	1

APX 12/16

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-31S

Lab Sample ID: 480-109917-12

Date Collected: 11/18/16 10:33

Matrix: Water

Date Received: 11/18/16 14:38

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/16 17:08	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 17:08	1
Acetone	ND		10	3.0	ug/L			11/30/16 17:08	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 17:08	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 17:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	104		77 - 120		11/30/16 17:08	1
Toluene-d8 (Surr)	102		80 - 120		11/30/16 17:08	1
4-Bromofluorobenzene (Surr)	96		73 - 120		11/30/16 17:08	1
Dibromofluoromethane (Surr)	103		75 - 123		11/30/16 17:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/22/16 06:12	11/30/16 19:01	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/22/16 06:12	11/30/16 19:01	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/22/16 06:12	11/30/16 19:01	1
Phenol	ND		5.0	0.39	ug/L		11/22/16 06:12	11/30/16 19:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	77		52 - 132	11/22/16 06:12	11/30/16 19:01	1
2-Fluorobiphenyl	83		48 - 120	11/22/16 06:12	11/30/16 19:01	1
2-Fluorophenol	57		20 - 120	11/22/16 06:12	11/30/16 19:01	1
Nitrobenzene-d5	70		46 - 120	11/22/16 06:12	11/30/16 19:01	1
Phenol-d5	45		16 - 120	11/22/16 06:12	11/30/16 19:01	1
p-Terphenyl-d14	78		67 - 150	11/22/16 06:12	11/30/16 19:01	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 16:46	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 16:46	1
Barium	0.13		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 16:46	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 16:46	1
Chromium	ND		0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 16:46	1
Copper	ND		0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 16:46	1
Iron	0.61		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 16:46	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 16:46	1
Magnesium	44.6		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 16:46	1
Manganese	0.67		0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 16:46	1
Nickel	0.0080	J	0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 16:46	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 16:46	1
Sodium	8.8		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 16:46	1
Zinc	0.0069	J	0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 16:46	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 14:01	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-32S

Lab Sample ID: 480-109917-13

Date Collected: 11/18/16 11:20

Matrix: Water

Date Received: 11/18/16 14:38

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			11/30/16 17:31	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 17:31	1
Acetone	ND		10	3.0	ug/L			11/30/16 17:31	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 17:31	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 17:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		77 - 120		11/30/16 17:31	1
Toluene-d8 (Surr)	102		80 - 120		11/30/16 17:31	1
4-Bromofluorobenzene (Surr)	96		73 - 120		11/30/16 17:31	1
Dibromofluoromethane (Surr)	104		75 - 123		11/30/16 17:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.4	0.45	ug/L		11/22/16 06:12	12/01/16 10:54	1
1,4-Dichlorobenzene	ND		9.4	0.43	ug/L		11/22/16 06:12	12/01/16 10:54	1
Bis(2-ethylhexyl) phthalate	ND		4.7	2.1	ug/L		11/22/16 06:12	12/01/16 10:54	1
Phenol	ND		4.7	0.37	ug/L		11/22/16 06:12	12/01/16 10:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	79		52 - 132	11/22/16 06:12	12/01/16 10:54	1
2-Fluorobiphenyl	86		48 - 120	11/22/16 06:12	12/01/16 10:54	1
2-Fluorophenol	59		20 - 120	11/22/16 06:12	12/01/16 10:54	1
Nitrobenzene-d5	70		46 - 120	11/22/16 06:12	12/01/16 10:54	1
Phenol-d5	43		16 - 120	11/22/16 06:12	12/01/16 10:54	1
p-Terphenyl-d14	88		67 - 150	11/22/16 06:12	12/01/16 10:54	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 16:50	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 16:50	1
Barium	0.067		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 16:50	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 16:50	1
Chromium	ND		0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 16:50	1
Copper	ND		0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 16:50	1
Iron	0.022	J	0.050	0.019	mg/L		11/21/16 17:24	11/25/16 16:50	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 16:50	1
Magnesium	36.0		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 16:50	1
Manganese	0.20	B	0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 16:50	1
Nickel	ND		0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 16:50	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 16:50	1
Sodium	6.6		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 16:50	1
Zinc	0.0028	J	0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 16:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 14:03	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-35S

Lab Sample ID: 480-109917-14

Date Collected: 11/18/16 12:05

Matrix: Water

Date Received: 11/18/16 14:38

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			11/30/16 13:27	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 13:27	1
Acetone	ND		10	3.0	ug/L			11/30/16 13:27	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 13:27	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 13:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		77 - 120		11/30/16 13:27	1
Toluene-d8 (Surr)	97		80 - 120		11/30/16 13:27	1
4-Bromofluorobenzene (Surr)	99		73 - 120		11/30/16 13:27	1
Dibromofluoromethane (Surr)	102		75 - 123		11/30/16 13:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.9	0.48	ug/L		11/22/16 06:12	11/30/16 20:00	1
1,4-Dichlorobenzene	ND		9.9	0.46	ug/L		11/22/16 06:12	11/30/16 20:00	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/22/16 06:12	11/30/16 20:00	1
Phenol	ND		5.0	0.39	ug/L		11/22/16 06:12	11/30/16 20:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	64		52 - 132	11/22/16 06:12	11/30/16 20:00	1
2-Fluorobiphenyl	79		48 - 120	11/22/16 06:12	11/30/16 20:00	1
2-Fluorophenol	53		20 - 120	11/22/16 06:12	11/30/16 20:00	1
Nitrobenzene-d5	67		46 - 120	11/22/16 06:12	11/30/16 20:00	1
Phenol-d5	42		16 - 120	11/22/16 06:12	11/30/16 20:00	1
p-Terphenyl-d14	81		67 - 150	11/22/16 06:12	11/30/16 20:00	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 16:54	1
Arsenic	ND		0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 16:54	1
Barium	0.097		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 16:54	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 16:54	1
Chromium	0.0014	J	0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 16:54	1
Copper	ND		0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 16:54	1
Iron	0.067		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 16:54	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 16:54	1
Magnesium	40.7		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 16:54	1
Manganese	0.042	J	0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 16:54	1
Nickel	0.0036	J	0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 16:54	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 16:54	1
Sodium	4.9		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 16:54	1
Zinc	0.096		0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 16:54	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 14:05	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: GW-26D

Lab Sample ID: 480-109917-15

Date Collected: 11/18/16 13:13

Matrix: Water

Date Received: 11/18/16 14:38

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/16 13:54	1
1,2-Dichloroethene, Total	0.97	J	2.0	0.81	ug/L			11/30/16 13:54	1
Acetone	ND		10	3.0	ug/L			11/30/16 13:54	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 13:54	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/16 13:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	99		77 - 120		11/30/16 13:54	1
Toluene-d8 (Surr)	98		80 - 120		11/30/16 13:54	1
4-Bromofluorobenzene (Surr)	99		73 - 120		11/30/16 13:54	1
Dibromofluoromethane (Surr)	104		75 - 123		11/30/16 13:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.6	0.46	ug/L		11/22/16 06:12	12/01/16 10:25	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		11/22/16 06:12	12/01/16 10:25	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		11/22/16 06:12	12/01/16 10:25	1
Phenol	ND		4.8	0.37	ug/L		11/22/16 06:12	12/01/16 10:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	82		52 - 132	11/22/16 06:12	12/01/16 10:25	1
2-Fluorobiphenyl	85		48 - 120	11/22/16 06:12	12/01/16 10:25	1
2-Fluorophenol	62		20 - 120	11/22/16 06:12	12/01/16 10:25	1
Nitrobenzene-d5	74		46 - 120	11/22/16 06:12	12/01/16 10:25	1
Phenol-d5	45		16 - 120	11/22/16 06:12	12/01/16 10:25	1
p-Terphenyl-d14	86		67 - 150	11/22/16 06:12	12/01/16 10:25	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/21/16 17:24	11/25/16 16:57	1
Arsenic	0.0064	J	0.010	0.0056	mg/L		11/21/16 17:24	11/25/16 16:57	1
Barium	0.11		0.0020	0.00070	mg/L		11/21/16 17:24	11/25/16 16:57	1
Cadmium	ND		0.0010	0.00050	mg/L		11/21/16 17:24	11/25/16 16:57	1
Chromium	0.0022	J	0.0040	0.0010	mg/L		11/21/16 17:24	11/25/16 16:57	1
Copper	ND		0.010	0.0016	mg/L		11/21/16 17:24	11/25/16 16:57	1
Iron	3.5		0.050	0.019	mg/L		11/21/16 17:24	11/25/16 16:57	1
Lead	ND		0.0050	0.0030	mg/L		11/21/16 17:24	11/25/16 16:57	1
Magnesium	16.3		0.20	0.043	mg/L		11/21/16 17:24	11/25/16 16:57	1
Manganese	0.41		0.0030	0.00040	mg/L		11/21/16 17:24	11/25/16 16:57	1
Nickel	0.0015	J	0.010	0.0013	mg/L		11/21/16 17:24	11/25/16 16:57	1
Silver	ND		0.0030	0.0017	mg/L		11/21/16 17:24	11/25/16 16:57	1
Sodium	258		1.0	0.32	mg/L		11/21/16 17:24	11/25/16 16:57	1
Zinc	ND		0.010	0.0015	mg/L		11/21/16 17:24	11/25/16 16:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/21/16 08:25	11/22/16 14:06	1

12/16/16

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Client Sample ID: TB-1117-1816

Lab Sample ID: 480-109917-16

Date Collected: 11/18/16 00:00

Matrix: Water

Date Received: 11/18/16 14:38

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			11/30/16 14:20	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/16 14:20	1
Acetone	ND		10	3.0	ug/L			11/30/16 14:20	1
Benzene	ND		1.0	0.41	ug/L			11/30/16 14:20	1
Vinyl chloride	ND	05	1.0	0.90	ug/L			11/30/16 14:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		77 - 120		11/30/16 14:20	1
Toluene-d8 (Surr)	98		80 - 120		11/30/16 14:20	1
4-Bromofluorobenzene (Surr)	99		73 - 120		11/30/16 14:20	1
Dibromofluoromethane (Surr)	104		75 - 123		11/30/16 14:20	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109727-1

Client Sample ID: GW-7S

Lab Sample ID: 480-109727-1

Date Collected: 11/16/16 10:15

Matrix: Water

Date Received: 11/16/16 17:10

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			11/27/16 13:36	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/27/16 13:36	1
Acetone	ND		10	3.0	ug/L			11/27/16 13:36	1
Benzene	ND		1.0	0.41	ug/L			11/27/16 13:36	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/27/16 13:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		77 - 120		11/27/16 13:36	1
Toluene-d8 (Surr)	100		80 - 120		11/27/16 13:36	1
4-Bromofluorobenzene (Surr)	107		73 - 120		11/27/16 13:36	1
Dibromofluoromethane (Surr)	101		75 - 123		11/27/16 13:36	1

6

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109727-1

Client Sample ID: GW-7D

Lab Sample ID: 480-109727-2

Date Collected: 11/16/16 10:20

Matrix: Water

Date Received: 11/16/16 17:10

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			11/27/16 14:00	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/27/16 14:00	1
Acetone	4.0	J	10	3.0	ug/L			11/27/16 14:00	1
Benzene	ND		1.0	0.41	ug/L			11/27/16 14:00	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/27/16 14:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		77 - 120		11/27/16 14:00	1
Toluene-d8 (Surr)	100		80 - 120		11/27/16 14:00	1
4-Bromofluorobenzene (Surr)	108		73 - 120		11/27/16 14:00	1
Dibromofluoromethane (Surr)	99		75 - 123		11/27/16 14:00	1

6

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109727-1

Client Sample ID: GW-1D

Lab Sample ID: 480-109727-3

Date Collected: 11/16/16 13:20

Matrix: Water

Date Received: 11/16/16 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/27/16 14:24	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/27/16 14:24	1
Acetone	ND		10	3.0	ug/L			11/27/16 14:24	1
Benzene	ND		1.0	0.41	ug/L			11/27/16 14:24	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/27/16 14:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	96		77 - 120		11/27/16 14:24	1
Toluene-d8 (Surr)	98		80 - 120		11/27/16 14:24	1
4-Bromofluorobenzene (Surr)	106		73 - 120		11/27/16 14:24	1
Dibromofluoromethane (Surr)	96		75 - 123		11/27/16 14:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.3	0.45	ug/L		11/18/16 14:36	11/22/16 18:01	1
1,4-Dichlorobenzene	ND		9.3	0.43	ug/L		11/18/16 14:36	11/22/16 18:01	1
Bis(2-ethylhexyl) phthalate	ND		4.7	2.0	ug/L		11/18/16 14:36	11/22/16 18:01	1
Phenol	ND		4.7	0.36	ug/L		11/18/16 14:36	11/22/16 18:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	75		52 - 132	11/18/16 14:36	11/22/16 18:01	1
2-Fluorobiphenyl	77		48 - 120	11/18/16 14:36	11/22/16 18:01	1
2-Fluorophenol	54		20 - 120	11/18/16 14:36	11/22/16 18:01	1
Nitrobenzene-d5	67		46 - 120	11/18/16 14:36	11/22/16 18:01	1
Phenol-d5	41		16 - 120	11/18/16 14:36	11/22/16 18:01	1
p-Terphenyl-d14	93		67 - 150	11/18/16 14:36	11/22/16 18:01	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/18/16 08:47	11/21/16 22:42	1
Arsenic	ND		0.010	0.0056	mg/L		11/18/16 08:47	11/21/16 22:42	1
Barium	0.074		0.0020	0.00070	mg/L		11/18/16 08:47	11/21/16 22:42	1
Cadmium	ND		0.0010	0.00050	mg/L		11/18/16 08:47	11/21/16 22:42	1
Chromium	0.036		0.0040	0.0010	mg/L		11/18/16 08:47	11/21/16 22:42	1
Copper	ND		0.010	0.0016	mg/L		11/18/16 08:47	11/21/16 22:42	1
Iron	0.33		0.050	0.019	mg/L		11/18/16 08:47	11/21/16 22:42	1
Lead	ND		0.0050	0.0030	mg/L		11/18/16 08:47	11/21/16 22:42	1
Magnesium	33.9		0.20	0.043	mg/L		11/18/16 08:47	11/21/16 22:42	1
Manganese	0.020		0.0030	0.00040	mg/L		11/18/16 08:47	11/21/16 22:42	1
Nickel	0.0059	J	0.010	0.0013	mg/L		11/18/16 08:47	11/21/16 22:42	1
Silver	ND		0.0030	0.0017	mg/L		11/18/16 08:47	11/21/16 22:42	1
Sodium	103		1.0	0.32	mg/L		11/18/16 08:47	11/21/16 22:42	1
Zinc	0.0038	J B	0.010	0.0015	mg/L		11/18/16 08:47	11/21/16 22:42	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/16 09:10	11/17/16 14:39	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109727-1

Client Sample ID: GW-1S

Lab Sample ID: 480-109727-4

Date Collected: 11/16/16 14:07

Matrix: Water

Date Received: 11/16/16 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/27/16 14:47	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/27/16 14:47	1
Acetone	ND		10	3.0	ug/L			11/27/16 14:47	1
Benzene	ND		1.0	0.41	ug/L			11/27/16 14:47	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/27/16 14:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	93		77 - 120		11/27/16 14:47	1
Toluene-d8 (Surr)	99		80 - 120		11/27/16 14:47	1
4-Bromofluorobenzene (Surr)	108		73 - 120		11/27/16 14:47	1
Dibromofluoromethane (Surr)	97		75 - 123		11/27/16 14:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.6	0.46	ug/L		11/18/16 14:36	11/22/16 17:32	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		11/18/16 14:36	11/22/16 17:32	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		11/18/16 14:36	11/22/16 17:32	1
Phenol	ND		4.8	0.37	ug/L		11/18/16 14:36	11/22/16 17:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	83		52 - 132	11/18/16 14:36	11/22/16 17:32	1
2-Fluorobiphenyl	85		48 - 120	11/18/16 14:36	11/22/16 17:32	1
2-Fluorophenol	60		20 - 120	11/18/16 14:36	11/22/16 17:32	1
Nitrobenzene-d5	74		46 - 120	11/18/16 14:36	11/22/16 17:32	1
Phenol-d5	48		16 - 120	11/18/16 14:36	11/22/16 17:32	1
p-Terphenyl-d14	89		67 - 150	11/18/16 14:36	11/22/16 17:32	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/18/16 08:47	11/21/16 22:45	1
Arsenic	ND		0.010	0.0056	mg/L		11/18/16 08:47	11/21/16 22:45	1
Barium	0.18		0.0020	0.00070	mg/L		11/18/16 08:47	11/21/16 22:45	1
Cadmium	0.0013		0.0010	0.00050	mg/L		11/18/16 08:47	11/21/16 22:45	1
Chromium	0.0044		0.0040	0.0010	mg/L		11/18/16 08:47	11/21/16 22:45	1
Copper	ND		0.010	0.0016	mg/L		11/18/16 08:47	11/21/16 22:45	1
Iron	9.1		0.050	0.019	mg/L		11/18/16 08:47	11/21/16 22:45	1
Lead	ND		0.0050	0.0030	mg/L		11/18/16 08:47	11/21/16 22:45	1
Magnesium	20.6		0.20	0.043	mg/L		11/18/16 08:47	11/21/16 22:45	1
Manganese	1.3		0.0030	0.00040	mg/L		11/18/16 08:47	11/21/16 22:45	1
Nickel	0.0013	J	0.010	0.0013	mg/L		11/18/16 08:47	11/21/16 22:45	1
Silver	ND		0.0030	0.0017	mg/L		11/18/16 08:47	11/21/16 22:45	1
Sodium	132		1.0	0.32	mg/L		11/18/16 08:47	11/21/16 22:45	1
Zinc	0.010	J B	0.010	0.0015	mg/L		11/18/16 08:47	11/21/16 22:45	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/16 09:10	11/17/16 14:42	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109727-1

Client Sample ID: GW-4S

Lab Sample ID: 480-109727-5

Date Collected: 11/16/16 14:45

Matrix: Water

Date Received: 11/16/16 17:10

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			11/27/16 15:11	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/27/16 15:11	1
Acetone	ND		10	3.0	ug/L			11/27/16 15:11	1
Benzene	ND		1.0	0.41	ug/L			11/27/16 15:11	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/27/16 15:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		77 - 120		11/27/16 15:11	1
Toluene-d8 (Surr)	99		80 - 120		11/27/16 15:11	1
4-Bromofluorobenzene (Surr)	106		73 - 120		11/27/16 15:11	1
Dibromofluoromethane (Surr)	101		75 - 123		11/27/16 15:11	1

6

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109727-1

Client Sample ID: GW-4D

Lab Sample ID: 480-109727-6

Date Collected: 11/16/16 16:08

Matrix: Water

Date Received: 11/16/16 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/27/16 15:35	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/27/16 15:35	1
Acetone	ND		10	3.0	ug/L			11/27/16 15:35	1
Benzene	ND		1.0	0.41	ug/L			11/27/16 15:35	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/27/16 15:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120		11/27/16 15:35	1
Toluene-d8 (Surr)	99		80 - 120		11/27/16 15:35	1
4-Bromofluorobenzene (Surr)	107		73 - 120		11/27/16 15:35	1
Dibromofluoromethane (Surr)	101		75 - 123		11/27/16 15:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		10	0.49	ug/L		11/18/16 14:36	11/22/16 17:02	1
1,4-Dichlorobenzene	ND		10	0.47	ug/L		11/18/16 14:36	11/22/16 17:02	1
Bis(2-ethylhexyl) phthalate	ND		5.1	2.3	ug/L		11/18/16 14:36	11/22/16 17:02	1
Phenol	ND		5.1	0.40	ug/L		11/18/16 14:36	11/22/16 17:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	63		52 - 132	11/18/16 14:36	11/22/16 17:02	1
2-Fluorobiphenyl	63		48 - 120	11/18/16 14:36	11/22/16 17:02	1
2-Fluorophenol	46		20 - 120	11/18/16 14:36	11/22/16 17:02	1
Nitrobenzene-d5	56		46 - 120	11/18/16 14:36	11/22/16 17:02	1
Phenol-d5	38		16 - 120	11/18/16 14:36	11/22/16 17:02	1
p-Terphenyl-d14	66	X	67 - 150	11/18/16 14:36	11/22/16 17:02	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/18/16 08:47	11/21/16 22:49	1
Arsenic	ND		0.010	0.0056	mg/L		11/18/16 08:47	11/21/16 22:49	1
Barium	0.092		0.0020	0.00070	mg/L		11/18/16 08:47	11/21/16 22:49	1
Cadmium	ND		0.0010	0.00050	mg/L		11/18/16 08:47	11/21/16 22:49	1
Chromium	0.0027	J	0.0040	0.0010	mg/L		11/18/16 08:47	11/21/16 22:49	1
Copper	ND		0.010	0.0016	mg/L		11/18/16 08:47	11/21/16 22:49	1
Iron	0.13		0.050	0.019	mg/L		11/18/16 08:47	11/21/16 22:49	1
Lead	ND		0.0050	0.0030	mg/L		11/18/16 08:47	11/21/16 22:49	1
Magnesium	79.5		0.20	0.043	mg/L		11/18/16 08:47	11/21/16 22:49	1
Manganese	0.020		0.0030	0.00040	mg/L		11/18/16 08:47	11/21/16 22:49	1
Nickel	ND		0.010	0.0013	mg/L		11/18/16 08:47	11/21/16 22:49	1
Silver	ND		0.0030	0.0017	mg/L		11/18/16 08:47	11/21/16 22:49	1
Sodium	91.9		1.0	0.32	mg/L		11/18/16 08:47	11/21/16 22:49	1
Zinc	0.0025	JB	0.010	0.0015	mg/L		11/18/16 08:47	11/21/16 22:49	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/16 09:10	11/17/16 14:44	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109727-1

Client Sample ID: GW-4S

Lab Sample ID: 480-109727-7

Date Collected: 11/16/16 16:20

Matrix: Water

Date Received: 11/16/16 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.7	0.46	ug/L		11/18/16 14:36	11/22/16 16:33	1
1,4-Dichlorobenzene	ND		9.7	0.45	ug/L		11/18/16 14:36	11/22/16 16:33	1
Bis(2-ethylhexyl) phthalate	ND		4.8	2.1	ug/L		11/18/16 14:36	11/22/16 16:33	1
Phenol	ND		4.8	0.38	ug/L		11/18/16 14:36	11/22/16 16:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		52 - 132	11/18/16 14:36	11/22/16 16:33	1
2-Fluorobiphenyl	84		48 - 120	11/18/16 14:36	11/22/16 16:33	1
2-Fluorophenol	63		20 - 120	11/18/16 14:36	11/22/16 16:33	1
Nitrobenzene-d5	76		46 - 120	11/18/16 14:36	11/22/16 16:33	1
Phenol-d5	49		16 - 120	11/18/16 14:36	11/22/16 16:33	1
p-Terphenyl-d14	97		67 - 150	11/18/16 14:36	11/22/16 16:33	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/18/16 08:47	11/21/16 23:03	1
Arsenic	ND		0.010	0.0056	mg/L		11/18/16 08:47	11/21/16 23:03	1
Barium	0.13		0.0020	0.00070	mg/L		11/18/16 08:47	11/21/16 23:03	1
Cadmium	ND		0.0010	0.00050	mg/L		11/18/16 08:47	11/21/16 23:03	1
Chromium	0.0061		0.0040	0.0010	mg/L		11/18/16 08:47	11/21/16 23:03	1
Copper	0.0028	J	0.010	0.0016	mg/L		11/18/16 08:47	11/21/16 23:03	1
Iron	2.4		0.050	0.019	mg/L		11/18/16 08:47	11/21/16 23:03	1
Lead	ND		0.0050	0.0030	mg/L		11/18/16 08:47	11/21/16 23:03	1
Magnesium	26.9		0.20	0.043	mg/L		11/18/16 08:47	11/21/16 23:03	1
Manganese	0.14		0.0030	0.00040	mg/L		11/18/16 08:47	11/21/16 23:03	1
Nickel	0.0070	J	0.010	0.0013	mg/L		11/18/16 08:47	11/21/16 23:03	1
Silver	ND		0.0030	0.0017	mg/L		11/18/16 08:47	11/21/16 23:03	1
Sodium	30.6		1.0	0.32	mg/L		11/18/16 08:47	11/21/16 23:03	1
Zinc	0.012	B	0.010	0.0015	mg/L		11/18/16 08:47	11/21/16 23:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/16 09:10	11/17/16 14:46	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109727-1

Client Sample ID: TB-111616

Lab Sample ID: 480-109727-8

Date Collected: 11/16/16 00:00

Matrix: Water

Date Received: 11/16/16 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/27/16 15:59	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/27/16 15:59	1
Acetone	ND		10	3.0	ug/L			11/27/16 15:59	1
Benzene	ND		1.0	0.41	ug/L			11/27/16 15:59	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/27/16 15:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	99		77 - 120		11/27/16 15:59	1
Toluene-d8 (Surr)	99		80 - 120		11/27/16 15:59	1
4-Bromofluorobenzene (Surr)	108		73 - 120		11/27/16 15:59	1
Dibromofluoromethane (Surr)	100		75 - 123		11/27/16 15:59	1

6

TestAmerica Buffalo

APPENDIX B

SUPPORT DOCUMENTATION

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298

Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE FASTER, EASIER, CHEAPER WAY TO TESTING

Client Information Client Contact: Ann Marie Kropovitch Company: AECOM, Inc. Address: 257 West Genesee Street Suite 400 City: Buffalo State: NY Zip: 14202-2657 Phone: 716-856-5636 Email: ann.marie.kropovitch@aecom.com Project Name: Pfohl Brothers Landfill GW Monitoring Site:		Lab File: Lab No: 480-89388-13273.3 Page: 3 of 3 Job #:	
Analysis Requested Due Date Requested: STANDARD TAT Requested (days): PO #: 60411174 Task1175616.00000 WO #: ann.marie.kropovitch@aecom.com Project #: 48002609 SSOW #:		Carrier Tracking No(s): 480-89388-13273.3 Page: 3 of 3 Job #:	
Sample Identification Sample ID: GW-7S Sample ID: GW-7D Sample ID: GW-1D Sample ID: GW-1S Sample ID: GW-4S Sample ID: GW-4D Sample ID: GW-4S Sample ID: TB-111616		Analysis Requested 8010C, 7470A 8270D - Semi-volatile Organic Compounds by GC/MS 8280C - Volatile Organic Compounds by GC/MS Total Number of Containers: 3 Special Instructions/Note: TRIP BLANK.	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:	
Relinquished by: Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]		Method of Shipment: Date/Time: 11/16/16 1710 Date/Time: 11/16/16 1710 Date/Time: 11/16/16 1710	
Custody Seal No.: Custody Seal No.: #1 3.66		Company: Company: AECOM Company: AECOM Company: AECOM	

Case Narrative

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109727-1

Job ID: 480-109727-1

Laboratory: TestAmerica Buffalo

4

Narrative

Job Narrative 480-109727-1

Receipt

The samples were received on 11/16/2016 5:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 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(s) 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 sample contained an allowable number of surrogate compounds outside limits: GW-4D (480-109727-6). These results have been reported and qualified.

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.

QC Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109727-1

Lab Sample ID: LCS 480-332511/2-A

Matrix: Water

Analysis Batch: 332985

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 332511

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	16.0	11.0		ug/L		69	50 - 120
1,4-Dichlorobenzene	16.0	11.0		ug/L		69	51 - 120
Bis(2-ethylhexyl) phthalate	16.0	15.1		ug/L		94	63 - 139
Phenol	16.0	8.86		ug/L		55	17 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	89		52 - 132
2-Fluorobiphenyl	84		48 - 120
2-Fluorophenol	59		20 - 120
Nitrobenzene-d5	73		46 - 120
Phenol-d5	53		16 - 120
p-Terphenyl-d14	97		67 - 150

8

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-332311/1-A

Matrix: Water

Analysis Batch: 333013

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 332311

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/18/16 08:47	11/21/16 21:39	1
Arsenic	ND		0.010	0.0056	mg/L		11/18/16 08:47	11/21/16 21:39	1
Barium	ND		0.0020	0.00070	mg/L		11/18/16 08:47	11/21/16 21:39	1
Cadmium	ND		0.0010	0.00050	mg/L		11/18/16 08:47	11/21/16 21:39	1
Chromium	ND		0.0040	0.0010	mg/L		11/18/16 08:47	11/21/16 21:39	1
Copper	ND		0.010	0.0016	mg/L		11/18/16 08:47	11/21/16 21:39	1
Iron	ND		0.050	0.019	mg/L		11/18/16 08:47	11/21/16 21:39	1
Lead	ND		0.0050	0.0030	mg/L		11/18/16 08:47	11/21/16 21:39	1
Magnesium	ND		0.20	0.043	mg/L		11/18/16 08:47	11/21/16 21:39	1
Manganese	ND		0.0030	0.00040	mg/L		11/18/16 08:47	11/21/16 21:39	1
Nickel	ND		0.010	0.0013	mg/L		11/18/16 08:47	11/21/16 21:39	1
Silver	ND		0.0030	0.0017	mg/L		11/18/16 08:47	11/21/16 21:39	1
Sodium	ND		1.0	0.32	mg/L		11/18/16 08:47	11/21/16 21:39	1
Zinc	0.00161	J	0.010	0.0015	mg/L		11/18/16 08:47	11/21/16 21:39	1

Lab Sample ID: LCS 480-332311/2-A

Matrix: Water

Analysis Batch: 333013

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 332311

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.200	0.206		mg/L		103	80 - 120
Arsenic	0.200	0.198		mg/L		99	80 - 120
Barium	0.200	0.208		mg/L		104	80 - 120
Cadmium	0.200	0.202		mg/L		101	80 - 120
Chromium	0.200	0.206		mg/L		103	80 - 120
Copper	0.200	0.201		mg/L		100	80 - 120
Iron	10.0	10.70		mg/L		107	80 - 120
Lead	0.200	0.201		mg/L		101	80 - 120
Magnesium	10.0	10.11		mg/L		101	80 - 120
Manganese	0.200	0.211		mg/L		105	80 - 120

TestAmerica Buffalo

TestAmerica Buffalo

10 Hazenwood Drive
Amherst, NY 14228-2298
Phone (716) 891-2500 Fax (716) 891-7981

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information Client Contact: Ann Marie Kropovitch Company: AECOM, Inc. Address: 257 West Genesee Street Suite 400 City: Buffalo State, Zip: NY, 14202-2857 Phone: 716-856-5636 Email: ann.marie.kropovitch@aecom.com Project Name: Prohl Brothers Landfill GW Monitoring Site:		Lab Info: Lab #N: Devo, Melissa L E-Mail: melissa.devo@testamericainc.com Phone: 716-856-5636 Fax: 716-856-5636		Carrier Tracking No.: COC No: 480-89388-13273.1 Page: Page 1 of 2 Job #:	
Analysis Requested Due Date Requested: TAT Requested (days): PO #: 60411174 Task1175818.00000 WO #: ann.marie.kropovitch@aecom.com Project #: 48022609 SSOW#:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Acetone H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None 480-108917 COC			
Sample Identification Sample Date Sample Time Sample Type (C=Comp, G=Grab) Matrix (Inorganic, Organic, Pesticide, Other) Matrix Analysis		Special Instructions/Notes: 60100, 7470A 6270D - Benzofluorene Compounds by GC/MS 6250C - Volatile Organic Compounds (GC/MS)			
GW-75 GW-70 GW-345 GW-30-MS GW-30-MSD GW-30 GW-80 FD-111716 GW-85R GW-285 GW-335		11/17/16 0810 G Water 11/17/16 0820 G Water 11/17/16 0730 G Water 11/17/16 1100 G Water 11/17/16 1100 G Water 11/17/16 1100 G Water 11/17/16 1230 G Water 11/17/16 - G Water 11/17/16 1320 G Water 11/17/16 1410 G Water 11/17/16 1505 G Water			
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months			
Empty Kit Relinquished by: Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]		Special Instructions/QC Requirements: Method of Shipment: drop off Date/Time: 11/18/16 1438 Date/Time: 11/18/16 1438 Date/Time: 11/18/16 1438			
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 3.0 #1			

TestAmerica Buffalo

10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2800 Fax (716) 691-7991

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information Client Contact: Ann Marie Kropovitch Company: AECOM, Inc. Address: 257 West Genesee Street, Suite 400 City: Buffalo State, Zip: NY, 14202-2857 Phone:		Lab Pk: Devo, Melissa L E-Mail: melissa.devo@testamericainc.com Carrier Tracking No(s):	
Sample: R. BUNAY 17.16220 Phone: 716-856-5636		COC No: 480-89388-13273.2 Page: Page 2 of 2 Job #: 200-1062	
Due Date Requested: TAT Requested (days): STANDARD		Analysis Requested	
PO #: 80411174 Task 11175816.00000 WO #: ann.marie.kropovitch@aecom.com Project #: 48002809 SSOW #:		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:	
Sample Identification Sample ID: GW-295 Sample Date: 11/18/16 Sample Time: 0849 Sample Type: G (C=comp, G=grab) Matrix: (Inert, Specific, Other) Water		Special Instructions/Note: TRIP BLANK	
GW-305 GW-315 GW-325 GW-355 GW-265 TB-1117-1816		60100, 7470A 8270D - Semi-volatile Organic Compounds by GC/MS 8260C - Volatile Organic Compounds (GC/MS)	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months	
Empty Kit Relinquished by:		Special Instructions/QC Requirements:	
Relinquished by: [Signature] Date/Time: 11/18/16 1430		Method of Shipment: DROP OFF Date/Time: 11/18/16 1435	
Relinquished by: [Signature] Date/Time:		Date/Time:	
Relinquished by: [Signature] Date/Time:		Date/Time:	
Custody Seals Intact: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks:	

Case Narrative

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-109917-1

Job ID: 480-109917-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-109917-1**

Receipt

The samples were received on 11/18/2016 2:38 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° C.

GC/MS VOA

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-333987 recovered outside acceptance criteria, low biased, for Vinyl chloride. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported. The following samples are impacted: GW-35S (480-109917-14), GW-26D (480-109917-15) and TB-1117-1816 (480-109917-16).

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

GC/MS Semi VOA

Method(s) 8270D: The method blank for preparation batch 480-332949 contained Bis(2-ethylhexyl) phthalate above the reporting limit (RL). None of the samples associated with this method blank contained the target compound above the reporting limit ; therefore, re-extraction and re-analysis of samples were not performed: GW-7S (480-109917-1), GW-7D (480-109917-2), GW34S (480-109917-3), GW-3D (480-109917-4), GW-8D (480-109917-5), FD-111716 (480-109917-6), GW-8SR (480-109917-7), GW-28S (480-109917-8), GW-33S (480-109917-9), GW-29S (480-109917-10), GW-30S (480-109917-11), GW-31S (480-109917-12), GW-32S (480-109917-13), GW-35S (480-109917-14) and GW-26D (480-109917-15).

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.

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: 94.0

Reporting Period: August 26, 2016 to February 12, 2017

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/ECs 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:

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- 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

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

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.

82.03-4-10

Elizabeth L. McBride

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.

82.03-4-11

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.

82.03-4-5

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.

82.03-4-6

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.

82.03-4-8

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.

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.
 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.

82.03-4-9.2

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.
 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.

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

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

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

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
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

Parcel

Engineering Control

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 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. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

(a) the Institutional Control and/or 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 Avenue, 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

2/27/17
Date

IC/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 Avenue, 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



2/27/17

Date