nationalgrid

Steven P. Stucker, C.P.G.
Senior Environmental Engineer

June 8, 2017

Ms. Jamie Verrigni
Environmental Engineer
Remedial Bureau C, 11th Floor
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7014

Re: Johnstown (N. Market St.)
Former Manufactured Gas Plant Site (MGP)
Site No. 5-18-020
Semi-Annual Groundwater Monitoring Report (June 2017)

Dear Ms. Verrigni:

Enclosed is the Semi-Annual Groundwater Monitoring Report for the Johnstown (N. Market St.) MGP Site located in Johnstown, New York. The report includes the April 26, 2017, groundwater monitoring results.

National Grid acknowledges the NYSDEC Fact sheet dated June 2016 approving the site's environmental remediation construction completion. Long-term OM&M activities will be conducted in accordance with the approved Site Management Plan (SMP) and the site's Environmental Easement.

Please contact me at (315) 428-5652 or Steven.Stucker@NationalGrid.com if you have any questions regarding the report.

Sincerely,

Mark Boorady for SPS

Digitally signed by Mark Boorady
DN: cn=Mark Boorady, o=Groundwater & Environmental Services, Inc., ou, email=mboorady@gesonline.com, c=US
Date: 2017.06.08 09:48:27 -04'00'

Steven P. Stucker, C.P.G.
Senior Environmental Engineer

Cc: Carolyn Rooney -National Grid
Nathan Freeman- NYSDOH

nationalgrid

North Market Street Former Manufactured Gas Plant Site
Johnstown, New York

2017 Semi-Annual Groundwater Monitoring Report

Prepared by:

5 Technology Place, Suite 4
East Syracuse, NY 13057

TABLE OF CONTENTS

1.0 INTRODUCTION

This Semi-Annual Groundwater Monitoring Report (the Report) summarizes the results of the April 26, 2017, groundwater sampling event at the Johnstown, New York (N. Market Street) Former Manufactured Gas Plant (MGP) Site (the Site). This Report was developed as part of the long-term groundwater monitoring program on behalf of National Grid.

National Grid has been addressing the Site environmental conditions under an Order on Consent (Index Number D0-0001-9210), dated April 1999, that was entered into by Niagara Mohawk and the New York State Department of Environmental Conservation (NYSDEC). That Order on Consent was for the investigation and remediation of 21 former MGP sites, including the Johnstown (N. Market Street) Site. It was superseded by a new Order on Consent (Index Number A4-0473-0000), dated November 7, 2003. A NYSDEC-approved Supplemental Remedial Investigation (RI) Work Plan was finalized during November 2007, and a Final Supplemental RI Report was submitted to the NYSDEC, dated December 2008. The RI results report and subsequent Feasibility Study were approved in February 2010.

A Record of Decision (ROD) was issued by the NYSDEC, dated March 2010, in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, 6 NYCRR Part 375. Based upon the results of the remedial investigation/feasibility study (RI/FS) for the Site, the interim remedial measures (IRMs) previously completed, and the ROD, the draft Final Engineering Report and Site Management Plan (SMP) were developed and submitted to the NYSDEC in June 2010. The Final Engineering Report, the Final SMP, and the Final Environmental Easement were approved by the NYSDEC in their June 2016 Fact Sheet.
The Final SMP includes:
1) Semi-annual (April & October) site inspection and groundwater level measurements at monitoring wells MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, RMW-1, and the creek surface gauging station (bridge);
2) Semi-annual groundwater sampling/analysis [Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Heavy Metals, and Natural Attenuation Parameters] for monitoring wells MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16 (RMW-1 will not be sampled);
3) Semi-annual reporting (June & December) to NYSDEC.

1.1 PURPOSE AND OBJECTIVE

The purpose of this Report is to summarize the groundwater sampling activities and results of the latest event, and to compare the results to previous events. As described in the December 2008 Supplemental RI Report and the subsequent ROD, one of the primary goals is to evaluate whether or not the groundwater constituents of concern (COCs) concentrations have decreased, in addition to continued assessment of the effectiveness of monitored natural attenuation.

2.0 BACKGROUND

2.1 SITE DESCRIPTION

The Site is located in the City of Johnstown, County of Fulton, New York (**Figure 1** presents the site location map) and is identified as Block 14 and Lot 7 on the Johnstown City Tax Map. The Site is an approximate 0.7-acre area bounded by the Cayadutta Creek to the north, the Colonial Cemetery to the south, Market Street to the east, and a wooded parcel of property to the west (**Figure 2** presents the site plan). The Site is located in a mixed commercial, industrial, and residential area.

Currently, National Grid operates a natural gas regulator station at the Site with equipment contained in fenced enclosures along the Site's southern boundary. The rest of the Site is grass-covered, including the stream bank adjacent to Cayadutta Creek along the northern boundary of the Site. An embankment exists along the north end of the Site that slopes down to the Cayadutta Creek. A chain-link fence exists along the north and west sides of the Site, and a retaining wall runs along the south side of the Site. Access to the Site is from North Market Street to the east.

The Johnstown Hospital is located south of the Site within one mile, and numerous residences exist to the west and east of the Site. The Johnstown Senior High School and Warren Street Elementary School are located within one mile of the Site to the west.

2.2 SITE HISTORY

The Johnstown MGP Site was incorporated in March 1857 as the Johnstown Gas Light Company. The company operated a small coal gas plant with a 20,000 cubic foot (cu. ft.) holder (Holder #1), that was constructed in 1859 (see Figure 2 for all Holder locations at the former MGP Site). In 1861, the plant was improved with the addition of a coal shed and a covering for the tank holder. In 1886, the Johnstown and Gloversville Gas Light Corporation was formed, and the company purchased the rights to the Lowe water gas process. The United Gas Improvement Company planned the construction of a water gas plant for the Johnstown and Gloversville franchises.

In 1887, the Site consisted of a tool shop, an office, a coal gasometer, a lime house, a purifier room, a retort house, and a coal shed. Between 1887 and 1918, Holder #2 was located in the western-central part of the Site (exact size unknown). In 1892, a steam generator was constructed adjacent to the coal shed for the Lowe water gas process, and Holder #1 was decommissioned in 1896. In 1898, a 72,000 cu. ft. gas holder (Holder #3) was constructed on the Site. Between 1912 and 1918, the small gas holder (Holder #2) in the western-central area of the Site was removed. In 1929, a gas pipeline from a MGP in Troy, New York, reached Johnstown, and local gas production was only performed on a seasonal (winter) basis until local production of gas ceased in 1931. Niagara Hudson Power Company was the owner of the Site in 1930. By 1948, Holder #3 was decommissioned. In 1950, Niagara Hudson Power was consolidated under the name Niagara Mohawk Power Company. By 1980, all Site buildings were removed. Currently, National Grid operates a natural gas regulator station at the Site.

Site Assessment and Investigations

An investigation of the Site began in 1997 with a Preliminary Site Assessment (PSA), which found that the Site was impacted with MGP wastes. A Supplemental PSA was conducted at the Site in 1998, followed by a RI in January 2000 and subsequent interim remedial measures (IRMs). The IRMs are discussed separately within this section.

A 2009 Supplemental RI was initiated to collect data to address potential residual MGP-related contaminants remaining in groundwater at the Site and to assess hydrogeologic conditions and groundwater quality on the Site. The results of the Supplemental RI were used to formulate potential remedial alternatives for groundwater and residual soil contamination. The Supplemental RI results were evaluated and presented in the 2010 FS (define acronym) Report.

Interim Remedial Measures Completed

Several IRMs were performed to address the residual MGP impacts. In 2002 and 2003, the former holders and associated impacted soil were removed. During this IRM, former Holder #2 and the northern half of former Holder #3 were demolished and removed from the Site. Approximately 13,870 cubic yards of soil were excavated and disposed of off-site at a NYSDEC-approved facility. Permanent steel sheeting was left in place along the northeastern perimeter of the Site to avoid disturbance of the roadway and to provide containment of residual material left at depth.

Between 2005 and 2006, National Grid provided support to the City of Johnstown for subsurface work associated with the replacement of the North Market Street Bridge across Cayadutta Creek. Approximately 1,413 cubic yards of impacted soil were excavated from within the cofferdam area and disposed of off-site at a NYSDEC-approved facility.

In August 2009, the rip-rap area along the bank of Cayadutta Creek that had been restored during the previous IRMs was enhanced to allow for establishment of stream-side vegetation. Post-IRM inspections of the restored Cayadutta Creek bank were conducted in September 2009 and May 2010.

2.3 ENVIRONMENTAL SETTING

The Johnstown (N. Market Street) Site slopes northward toward Cayadutta Creek with elevations ranging from 652 to 672 feet (ft.) above sea level. Currently, the Site topography gradually slopes from south to north, becoming increasingly steeper adjacent to the Creek, and is generally covered with either vegetation or stone. Surface drainage is primarily to the north into the creek. Access to the Site is from North Market Street to the east, and the Site is currently used to support the natural gas regulator station operations.

Site Geology

The main units of unconsolidated deposits identified at the Site can be characterized in descending order as fill and native glacial deposits to bedrock. The glacial deposits are of lacustrine origin with glacial tills to the top of shale bedrock (Utica Shale). Bedrock was reached beneath the till in two soil borings explored during the 1998 Supplemental PSA. These stratigraphic units are more specifically described below, based on information obtained from the previous investigations and from the soil borings and monitoring well borings conducted during the 2007/ 2008 SRI.

Site geology includes a layer of disturbed soils (primarily fill) overlying glacial deposits. Based upon on-site soils and monitoring well borings, disturbed soils (including fills) varied in thickness up to 13 ft. and are typically composed of sand, gravel, silt, clay, wood, coal, and anthropogenic materials including ash, cinders, clinkers, brick fragments, wire, and wood chips. Wood chips were identified in three borings (SB-09, SB-12, and MW-8) and are often associated with purifier waste.

A thin layer of peat underlies the disturbed soils in the northern portion of the Site, ranging in thickness from 0.5 ft. to 3 ft., and appears to thicken and dip to the north. Except where it is locally covered by sedimentary deposits such as silts, sands, and clays, the peat, where present, appears to have been the historical ground cover prior to development of the Site.

Underlying the peat, where present, the soil consists of lacustrine deposits composed of silts, sands, and clays. The surface of the lacustrine deposits appears to dip and thin out toward the north. A sand and gravel unit (an outwash deposit of stratified drift) underlies the lacustrine deposits across the Site area. This unit contains varying amounts of silt and clay. These deposits overlie a dense, low-permeability glacial till to bedrock (Shale).

Site Hydrogeology

Groundwater depths on-site are typically in the 10- to 20-foot below ground surface (bgs) range, generally in the glacial deposits below the bottom of the fill material. Groundwater flow is consistently northward through the Site area toward Cayadutta Creek, with the steepest gradient from the center of the Site proximal to former gas holders #2 and #3 to the southern Creek bank (about 0.08 ft./ft.). In comparison, the average hydraulic gradient decreases to a value of approximately 0.04 ft./ft. on the east and west sides of the Site away from the former gas holders. The local groundwater flow is consistent with regional groundwater flow direction. The groundwater flow direction and hydraulic gradients calculated during this monitoring period are also generally consistent with historic data obtained prior to the issuance of the ROD.

3.0 MONITORING ACTIVITIES

The long-term semi-annual groundwater monitoring program currently consists of the following elements:

- Semi-Annual Site Inspection including the creek bank protection, vegetative cover, monitoring wells, and security fence.
- Semi-Annual Groundwater Well Gauging of the following wells: RW-1, MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15 and MW-16 (**Figure 2** presents the well locations). The creek surface water level is also gauged at one location: SG-1.
- Semi-Annual Groundwater Sampling and Analysis of the following: MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15 and MW-16. Note that recovery well RW-1 is not sampled as part of the program but is inspected for the presence of non-aqueous phase liquids (NAPL). Note: Monitoring well MW-11 was not gauged or sampled during the April 2017 sampling round due to concrete/metal and wood debris at this off-site well location.

3.1 WATER GAUGING AND GROUNDWATER SAMPLING PROCEDURES

Gauging

Long-term groundwater monitoring includes water gauging at 9 groundwater monitoring wells and 1 groundwater recovery well using an electronic oil/water interface probe. Depth to bottom of well (DTB), depth to product (DTP), and depth to water (DTW) are to be recorded at each well. Refer to **Table 1** for a summary of the water level measurements from April 2017 as well as previous events. **Appendix A** also presents the field documentation from the April 2017 water gauging event.

No product was present in recovery well RW-1 or the other eight groundwater monitoring wells that were gauged.

A creek surface water level measurement was collected from the Cayadutta Creek Bridge using a water level probe (from the surveyed gauging point at the bridge).

Sampling

Groundwater sampling was performed following low-flow sampling techniques [equivalent to United States Environmental Protection Agency (USEPA) low-flow procedures] using a pressure-driven peristaltic pump. During purging, measurements were collected for the following field parameters: pH, specific conductivity, turbidity, dissolved oxygen (DO), temperature, and oxidation-reduction potential (ORP). An Horiba U-22 was used to collect the field parameter data in a flow-through cell. The monitored field parameters are observed and recorded during low-flow sampling to determine when they have stabilized, and thus when the well has been adequately purged. Field parameter measurements were recorded at approximately 5-minute intervals. The monitoring wells were purged until stabilization of the field parameters (±0.1 Standard Unit (SU) for pH, ±3% for specific conductivity, ±10 millivolts (mV) for ORP, and ±10% for DO) and

turbidity was less than 50 Nephalometric Turbidity Units (NTU). Refer to **Attachment A** for the field data.

After stabilization of the field parameters, eight groundwater samples were collected directly from the dedicated tubing into laboratory-supplied sample containers (pre-preserved as required per the analytical method). Quality Assurance/Quality Control (QA/QC) samples included the collection of one field duplicate sample, one matrix spike (MS) sample, one duplicate matrix spike (DMS) sample, and one trip blank sample (VOCs only). Samples were transported to the laboratory, accompanied by the appropriate chain-of-custody documentation. Analytical results were validated.

Natural Attenuation Parameters

The ORP of groundwater is an indicator of the relative tendency of the groundwater to accept or transfer electrons. ORP is dependent on and influences rates of biodegradation. Lower ORP readings indicate a greater tendency toward reducing conditions and anaerobic processes.

The pH of the groundwater affects the presence and activity of microorganisms in the groundwater. The microorganisms may produce either organic acids or carbon dioxide which, when dissolved in water, forms weak carbonic acid. Microorganisms capable of degrading petroleum hydrocarbons typically prefer pH values ranging from 6 to 8 SU.

Groundwater temperature affects the solubility of dissolved gases such as oxygen and carbon dioxide as well as the metabolic activity of microorganisms. Oxygen is less soluble in warm water, and groundwater temperatures below approximately 5 degrees Celsius tend to inhibit biodegradation.

DO is the most thermodynamically favored electron acceptor used by microorganisms during the degradation of both natural and anthropogenic organic carbon. An inverse relationship of high hydrocarbon concentrations and low DO concentrations can be used as a key indicator of biodegradation.

Nitrate, if available, may be used as an electron acceptor for anaerobic biodegradation after the depletion of DO [typically considered less than 0.5 milligrams per liter (mg/L)] and is used to biodegrade petroleum hydrocarbons. Lower nitrate concentrations in groundwater within a plume, with respect to higher concentrations in areas upgradient and outside a plume, may be expected.

Ferrous iron is a metabolic byproduct of hydrocarbon degradation. Reducing conditions in nitrogen- and oxygen-depleted groundwater creates an anaerobic environment that causes the reduction of ferric iron (Fe^{3+}) to ferrous iron (Fe^{2+}). Relatively low ferrous iron concentrations may be present in areas where natural attenuation is occurring if free ferrous iron is re-precipitating as sulfides or carbonates.

Sulfate may be used as an electron acceptor after the depletion or use limitation of DO, nitrate, and ferric iron. Lower sulfate concentrations in groundwater within a plume, with respect to higher concentrations in areas upgradient and outside a plume, may be expected.

The production of methane, termed methanogenesis, occurs only in strongly reducing conditions and generally after oxygen, nitrate, and sulfate have been depleted. The presence of methane in groundwater suggests Benzene, Toluene, Ethylbenzene, Xylene (BTEX) degradation via methanogenesis. Methane is not present in fuels, and therefore its presence at high concentrations relative to areas upgradient and outside a plume is indicative of the biodegradation of petroleum hydrocarbons.

The buffering capacity of groundwater is a function of alkalinity. Typically, alkalinity is primarily due to carbonate alkalinity. The organic acids or the carbon dioxide (which produces a weak carbonic acid when dissolved in water) produced by biodegradation solubilize carbonate from the soil. Alkalinity concentrations that are elevated with respect to areas upgradient and outside a plume may be an indication of microbial activity and thus natural attenuation.

Typically, the relationships between BTEX and electron acceptors/metabolic byproduct concentrations (geochemical indicators) indicate potential for biodegradation. The concentrations are dependent on the location (and groundwater conditions) within the plume or outside of the plume limits.

3.2 GROUNDWATER ANALYTICAL RESULTS

The groundwater samples were analyzed for BTEX, Polycyclic Aromatic Hydrocarbons (PAHs), lead, total cyanide, and monitored natural attenuation/water quality (MNA/WQ) parameters including alkalinity, chloride, ethane, ethene, ferrous iron, manganese, methane, nitrate, nitrogen, sulfate and sulfide. BTEX and PAHs are constituents commonly associated with former MGP sites. Cyanide is also a constituent commonly associated with former MGP sites. BTEX, PAHs, lead, and cyanide were the primary contaminants detected during previous investigation activities conducted at the Site. The MNA/WQ parameters, as well as field-measured ORP, pH, temperature, and DO, are relevant to establishing whether conditions are favorable for natural attenuation to occur at the Site.

- Refer to **Table 2** for the analytical results summary.
- Refer to **Appendix A** for field data.
- Refer to **Appendix B** for the data usability summary report (DUSR).

Groundwater analytical results were compared with levels specified in the NYSDEC Division of Water Final Amendment to Water Quality Standards Regulations, effective February 16, 2008 [hereafter referred to as NYSDEC WQ Values]. For groundwater, Class GA values were applied. Class GA waters are defined as fresh groundwater, found in the saturated zone of unconsolidated deposits and consolidated rock or bedrock, which are used as a source of potable water supply.

Site Related Parameters

BTEX - Groundwater samples collected on April 26, 2017 from monitoring wells MW-10, MW-13, MW-15, and MW-16 contained concentrations of some or all individual BTEX constituents above their respective NYSDEC WQ Values [1 micrograms per liter (µg/L)] for benzene and 5 µg/L for other BTEX constituents). The highest concentrations were observed in the groundwater samples collected from monitoring well MW-15. Monitoring well MW-15 typically has the highest total BTEX concentrations. Monitoring well MW-15 is located generally downgradient of the former gas holders.

PAHs – PAHs were detected in samples collected on April 26, 2017 from monitoring wells MW-10, MW-12, MW-13, MW-14, MW-15 and MW-16. Naphthalene (MW-15) has consistently exhibited the highest concentration of any PAH.

Cyanide - Concentrations of cyanide were detected above its NYSDEC WQ Value (0.2 mg/L) in groundwater samples collected from monitoring wells MW-15, and MW16 on April 26, 2017.

Monitored Natural Attenuation Parameters

Site-specific levels of the MNA/WQ parameters (geochemical indicators) were compared to known screening values to identify whether the site-specific values are within the ranges known to be suitable for biodegradation. The April 26, 2017 MNA/WQ analytical results for the individual monitoring wells are summarized in **Table 2**. **Figure 4** presents the groundwater data for the key MNA data parameters at their respective locations to assist with the MNA evaluation. Indications of biodegradation of petroleum-related MGP constituents within the plume include low levels of DO, nitrate and sulfate, with generally higher levels of manganese, ferrous iron and methane.

Indicator concentrations detected at monitoring wells identified within source and downgradient areas of the Site were compared to levels detected at upgradient and side gradient monitoring wells exhibiting little or no MGP-related contamination. Generally, indicator concentration levels at a distance from the center of the plume will be significantly lower than levels within the plume. A summary of the MNA/WQ results and associated field indicator parameters are provided below:

- DO and ORP values demonstrate depleted levels of DO and a transformation to more anaerobic or reducing conditions at the former source and downgradient areas relative to side gradient and upgradient areas of the Site. These values suggest that biodegradation activities at the source and at downgradient areas are occurring, consuming the available oxygen and resulting in MGP petroleum-related compound degradation and the lowering of DO levels.

- The range of ORP levels observed at the source and downgradient area monitoring wells generally indicates aquifer conditions could be suitable for denitrification, ferric iron reduction, sulfate reduction, and methanogenesis.

- Nitrate concentrations are generally depleted at the former source and downgradient areas of the Site relative to upgradient (MW-4) and side gradient areas, indicating denitrification may be a noteworthy biodegradation process occurring at this time at the source and downgradient areas.

- Ferrous iron concentrations at the former source and downgradient area monitoring wells do not exhibit higher levels relative to side gradient and upgradient monitoring wells. In addition, sulfate concentrations at the former source and downgradient areas are not depleted relative to upgradient and side gradient areas. These observations indicate ferric iron reduction and sulfate reduction are not likely to be significant biodegradation processes at this time at the source and downgradient areas.

- Based on the presence of methane, low DO amounts, and the ORP levels, methanogenesis is likely an important factor for biodegradation capacity in some areas of the Site. However, plume elongation is limited with a similar footprint throughout the monitoring period indicating that biodegradation is continuing and methanogenic conditions have not taken over completely.

Natural Attenuation Trending

Previous groundwater sampling data collected since October 2012 was utilized to develop and evaluate the contaminant plume and concentration trends of specific constituents at the Site. Plume size and concentration data are indicative of biodegradation capacity (natural attenuation) at the Site and whether the capacity has reached a limit of effectiveness. In order to determine and evaluate natural attenuation effectiveness, the use of statistical testing has been utilized for groundwater data collected from monitoring wells at the Site. The Mann-Kendall test was utilized for trend analysis. Trend analysis data started in October 2012. The resultant statistical trend analysis for individual monitoring wells suggests (with 80% and 90% confidence) that total BTEX compounds and the naphthalene plume lifecycle have been stable (no trend) to decreasing throughout the monitoring period. The table below depicts general concentration trend analysis results (decreasing, no trend or increasing) at 80% confidence levels for each well and associated constituents during the monitoring period. No trend is indicative of plume stability at well locations with contaminant detections throughout the monitoring period.

Well ID	Benzene	Toluene	Ethylbenzene	Total xylenes	Naphthalene
MW-4[1]	No trend	No trend	No trend	No trend	No trend
MW-7[1]	No trend	No trend	No trend	No trend	No trend
MW-10[1]	Not trend	No trend	No trend	No trend	Diminishing trend
MW-11[1]	No trend	No trend	No trend	No trend	Diminishing trend
MW-12[1]	No trend	No trend	No trend	No trend	Diminishing trend
MW-13[1]	Diminishing trend	Diminishing trend	Diminishing trend	Diminishing trend	Diminishing trend
MW-14[1]	No trend	No trend	No trend	No trend	No trend
MW-15[1]	No trend	No trend	No trend	No trend	No trend
MW-16[1]	Diminishing trend	No trend	Diminishing trend	No trend	No trend

1 No trend is indicative of plume stability at well locations with contaminant detections throughout the monitoring period.

Isoconcentration contour maps were developed for total BTEX (**Figure 5**) and naphthalene (**Figure 6**) contamination. The figures present locations of the groundwater monitoring wells and plume contours for total BTEX (as compared to the benzene WQ value of 1 µg/L) and naphthalene exceeding the NYSDEC WQ values. Evaluation of the isoconcentration figures suggests that the contaminant plumes were relatively stable to decreasing (smaller footprint with time) within the Site boundary. BTEX constituent plume trends (concentrations above the benzene WQ at 1 µg/L) have consistently included monitoring wells MW-13, and MW-15. The naphthalene plume (concentrations above the WQ) has decreased to include only monitoring wells MW-13 and MW-15.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

Groundwater Levels

The groundwater elevation data indicates groundwater within the Site flows in a downgradient direction from the south to the north, toward Cayadutta Creek. The groundwater flow direction has been consistent during previous gauging events and with data obtained prior to the ROD. **Figure 3** is a groundwater monitoring map verifying groundwater flow direction.

Site-Related Constituents

The highest concentrations of BTEX constituents and PAH compounds are within MW-13, MW-15, and MW-16. Site institutional controls continue to be effective and will continue to be monitored semi-annually.

There are minimal concentrations of lead in groundwater samples; however, Total Cyanide has been detected consistently in most wells.

Natural Attenuation

Plume stability at the Site is an indication that biodegradation capacity likely has not reached its limit of effectiveness. The use of statistical testing has identified the plume trends based on the constituent concentrations were either stable or decreasing.

4.2 RECOMMENDATIONS

Based on the results of the April 2017 groundwater sampling and monitoring event and results from previous events, the following recommendations are made:

- ✓ Continue the long-term semi-annual site inspection and groundwater monitoring program. The next event will occur in October 2017.

5.0 REFERENCES

Borden, Robert C., et. al., "Geochemical Indicators of Intrinsic Bioremediation". Groundwater, Volume 33, Number 2, March/April 1995.

National Grid. "Site Management Plan for the Johnstown (N. Market Street) Former MGP Site, Johnstown, New York". National Grid, November 2011.

Niagara Mohawk Power Corporation. "Preliminary Historical Profile of the Johnstown (Market Street) MGP Site. Johnstown, New York". Niagara Mohawk Power Corporation, June 1993.

Niagara Mohawk Power Corporation. "Interim Remedial Measure (IRM) Summary Report for the Johnstown (N. Market Street) Site. Johnstown, Fulton County, New York. Site No. 5-18-020:. Tetra Tech FW, June 2007.

Niagara Mohawk Power Corporation. "IRM Summary Report for the Johnstown (N. Market Street) Site. Bridge Replacement Environmental Support Activities". Tetra Tech FW, October 2007.

Niagara Mohawk Power Corporation. "Record of Decision for the Johnstown (N. Market Street) Former MGP Site, Johnstown, New York". Niagara Mohawk Power Corporation, March 2010.

TABLES

Table 1
Groundwater Level Measurements
Johnstown MGP Site
Johnstown, NY

Well ID	ELEVATION REFERENCE POINT	6/30/2010		9/29/2010		1/5/2011		4/8/2011		6/16/2011		10/13/2011	
		Depth to Water (ft tic)	GW Elevation (ft msl)	Depth to Water (ft tic)	GW Elevation (ft msl)	Depth to Water (ft tic)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)
MW-4	676.54	23.10	653.44	23.41	653.13	22.95	653.59	22.50	654.04	22.04	654.50	21.41	655.13
MW-7	659.08	14.25	644.83	13.18	645.90	13.88	645.20	12.87	646.21	13.80	645.28	13.15	645.93
MW-10	657.59	14.80	642.79	14.60	642.99	14.75	642.84	14.09	643.50	14.77	642.82	14.11	643.48
MW-11	657.29	NM	NM	13.57	643.72	13.59	643.70	12.51	644.78	13.38	643.91	12.95	644.34
MW-12	660.08	NM	NM	NM	NM	15.06	645.02	NM	NM	NM	NM	13.61	646.47
MW-13	664.89	14.65	650.24	15.22	649.67	14.95	649.94	11.18	653.71	13.99	650.90	11.91	652.98
MW-14	663.91	13.50	650.41	14.46	649.45	14.28	649.63	12.86	651.05	13.65	650.26	13.26	650.65
MW-15	661.85	16.90	644.95	17.24	644.61	17.68	644.17	15.07	646.78	16.63	645.22	15.95	645.90
MW-16	665.57	9.70	655.87	10.19	655.38	12.33	653.24	11.00	654.57	10.50	655.07	9.79	655.78
RW-1													
GAUGE1	659.97	15.07	644.90	20.20	639.77	16.30	643.67	15.75	644.22	16.75	643.22	16.05	643.92

ft msl - feet mean sea level
ft toc - feet from top of inner casing
NM - not measured

Table 1
Groundwater Level Measurements
Johnstown MGP Site
Johnstown, NY

Well ID	ELEVATION REFERENCE POINT	12/15/2011		3/15/2012		10/9/2012		4/18/2013		10/7/2013		4/9/2014	
		Depth to Water (ft toc)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)
MW-4	676.54	22.78	653.76	22.81	653.73	NM	NM	23.97	652.57	23.12	653.42	23.28	653.26
MW-7	659.08	15.45	643.63	13.55	645.53	14.17	644.91	13.53	645.55	14.36	644.72	13.71	645.37
MW-10	657.59	14.22	643.37	14.18	643.41	15.05	642.54	14.27	643.32	14.44	643.15	14.13	643.46
MW-11	657.29	12.76	644.53	12.73	644.56	13.95	643.34	13.01	644.28	13.16	644.13	12.68	644.61
MW-12	660.08	14.54	645.54	14.26	645.82	16.36	643.72	14.06	646.02	14.99	645.09	14.41	645.67
MW-13	664.89	14.31	650.58	14.98	649.91	16.12	648.77	14.18	650.71	15.08	649.81	14.84	650.05
MW-14	663.91	13.65	650.26	15.49	648.42	16.98	646.93	13.14	650.77	14.74	649.17	15.70	648.21
MW-15	661.85	16.38	645.47	16.41	645.44	17.85	644.00	16.26	645.59	17.21	644.64	16.67	645.18
MW-16	665.57	9.91	655.66	11.56	654.01	10.51	655.06	9.98	655.59	9.85	655.72	9.45	656.12
RW-1						17.98		16.21	-	15.95	-	12.32	-
GAUGE1	659.97	15.62	644.35	15.69	644.28	NM	NM	19.10	640.87	18.85	641.12	18.85	641.12

ft msl - feet mean sea level
ft toc - feet from top of inner casing
NM - not measured

Table 1
Groundwater Level Measurements
Johnstown MGP Site
Johnstown, NY

Well ID	ELEVATION REFERENCE POINT	10/13/2014		4/16/2015		10/13/2015		4/6/2016		10/25/2016		4/26/2017	
		Depth to Water (ft toc)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)	Depth to Water (ft toc)	GW Elevation (ft msl)
MW-4	676.54	23.28	653.26	22.91	653.63	23.48	653.06	23.51	653.03	24.03	652.51	21.09	655.45
MW-7	659.08	14.61	644.47	13.23	645.85	14.61	644.47	14.19	644.89	15.00	644.08	13.62	645.46
MW-10	657.59	14.98	642.61	14.15	643.44	14.95	642.64	14.77	624.82	15.18	642.41	14.37	643.22
MW-11	657.29	13.71	643.58	12.62	644.67	-	-	NM	-	NM	-	NC	
MW-12	660.08	15.65	644.43	14.25	645.83	15.62	644.46	14.95	645.13	15.82	644.26	13.55	646.53
MW-13	664.89	15.53	649.36	11.34	653.55	14.98	649.91	15.95	648.94	16.32	648.57	13.27	651.62
MW-14	663.91	15.02	648.89	13.06	650.85	13.63	650.28	16.81	647.1	16.8	647.11	13.71	650.20
MW-15	661.85	17.55	644.30	15.31	646.54	17.23	644.62	17.355	644.3	17.9	643.95	16.05	645.80
MW-16	665.57	10.24	655.33	10.48	655.09	9.61	655.96	10.79	654.78	11.11	654.46	9.02	656.55
RW-1		17.31	-	16.84	-	13.21	-	13.03	NRP	12.88	NRP	10.6	
GAUGE1	659.97	20.01	639.96	18.91	641.06	19.91	640.06	19.76	640.21	18.40	641.57	15.70	644.27

ft msl - feet mean sea level
ft toc - feet from top of inner casing
NM - not measured

Table 2
Analytical Data Results (MW-4)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/14/15	4/6/16	10/25/16	4/26/17
BTEX Compounds																	
Benzene	ug/l	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U	1.0U
Ethylbenzene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U	1.0U
m/p-Xylene	ug/l	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2U	2.0U	2.0U
o-Xylene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U	1.0U
Toluene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U	1.0U
PAHs																	
Acenaphthene	ug/l	20	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Acenaphthylene	ug/l	NC	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Anthracene	ug/l	50	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Benzo(a)anthracene	ug/l	0.002	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Benzo(a)pyrene	ug/l	0.000	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Benzo(b)fluoranthene	ug/l	0.002	0.47 U	0.48 U	0.47 U	**0.26 J**	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Benzo(g,h,i)perylene	ug/l	NC	0.47 U	0.48 U	0.47 U	0.19 J	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Benzo(k)fluoranthene	ug/l	0.002	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Chrysene	ug/l	0.002	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Dibenzo(a,h)anthracene	ug/l	NC	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Fluoranthene	ug/l	50	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Fluorene	ug/l	50	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Indeno(1,2,3-cd)pyrene	ug/l	0.002	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Naphthalene	ug/l	10	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	3.2	3.2	2.2	2.2	2.2	0.51U	0.29	0.096U
Phenanthrene	ug/l	50	0.47 U	0.48 U	0.47 U	0.048 J	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Pyrene	ug/l	50	0.47 U	0.48 U	0.47 U	0.10 J	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U	0.096U
Cyanide and Lead																	
Lead	ug/l	25	5 U	3 U	3 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10U	5.0U	5.0U
Cyanide	mg/l	0.2	0.01 U	0.01 U	0.01 U	0.01 UJ	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010U	0.010U	0.010U

Notes:

BTEX - Benzene, Ethylbenzene, Toluene and Xylene.

J - Estimated.

mg/l - Milligrams per liter.

NC - No Criteria.

PAHs - Polycyclic Aromatic Hydrocarbons.

U - Not Detected.

ug/l - Micrograms per liter.

Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-4)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/14/15	4/6/16	10/25/16	4/26/17
CONSTITUENT	**UNITS**															
MNA/WQ Parameters																
Alkalinity (as CaCO3)	mg/l	R	R	405 J	431 J	R	405	354	442	398	400	384	412	394	414	392
Chloride	mg/l	265	385 B	288 J	R	228	222	275	411	304	329	295	365	304	421	377
Ethane	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5U	0.025 U	0.025 U
Ethene	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7U	0.035 U	0.035 U
Ferrous Iron	mg/l	R	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.013	0.1 U	0.1 U	0.1 U	0.1 U	0.14	0.11	0.10 U
Manganese	mg/l	0.64 J	0.45 J	3 U	3.4	3 U	0.0087	3 U	3 U	3 U	3 U	3 U	0.019	0.0031	0.0053	0.005 U
Methane	ug/l	1 U	1 U	1 U	1 U	1 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4U	0.32 J	0.47 J
Nitrate	mg/l	2.7	2.9	2.4	3	3.1	2.2	2.4	3.5	3.6	2.7	2.9	2.9	3.4	3.2	2.2
Nitrogen	mg/l	0.2 U	0.2 U	R	0.2 U	0.2 U	0.25	0.31	0.31	0.2 U	0.2 U	0.2 U	0.2 U	0.2U	1.0 U	1.0 U
Sulfate	mg/l	56.7	74.2 B	R	R	56 B	62.2	64.7	74.7	70.7	50.8	60	60	73.9	60.8	23.0
Sulfide	mg/l	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0 U	1.0 U

Notes:
B - Present in Associated Blank Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-7)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/14/15	4/6/16	10/26/16	4/26/17
BTEX Compounds																	
Benzene	ug/l	1	1 U	0.72 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1U	1.0U	1.0U
Ethylbenzene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U	1.0U
m/p-Xylene	ug/l	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2U	2.0U	2.0U
o-Xylene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U	1.0U
Toluene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.3	1U	1.0U	1.0U
PAHs																	
Acenaphthene	ug/l	20	0.50 U	0.48 U	0.48 U	0.55	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10	0.097U
Acenaphthylene	ug/l	NC	0.50 U	0.48 U	0.48 U	0.20 J	0.13 J	0.13 J	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.20	0.097U
Anthracene	ug/l	50	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Benzo(a)anthracene	ug/l	0.002	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Benzo(a)pyrene	ug/l	0.000	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Benzo(b)fluoranthene	ug/l	0.002	0.50 U	0.48 U	0.48 U	**0.15 J**	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Benzo(g,h,i)perylene	ug/l	NC	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Benzo(k)fluoranthene	ug/l	0.002	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Chrysene	ug/l	0.002	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Dibenzo(a,h)anthracene	ug/l	NC	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Fluoranthene	ug/l	50	0.50 U	0.48 U	0.48 U	0.47 U	0.078 J	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Fluorene	ug/l	50	0.50 U	0.48 U	0.48 U	0.11 J	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Indeno(1,2,3-cd)pyrene	ug/l	0.002	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Naphthalene	ug/l	10	0.50 U	0.48 U	0.48 U	0.47 U	1.1	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	5.2	0.49U	3.0	0.097U
Phenanthrene	ug/l	50	0.50 U	0.48 U	0.48 U	0.097 J	0.12 J	0.48 U	0.49	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Pyrene	ug/l	50	0.50 U	0.48 U	0.48 U	0.35 J	0.098 J	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U	0.097U
Cyanide and Lead																	
Lead	ug/l	25	5 U	3 U	19	12	3.2 J	19	**33**	7.1	7.1	0.010 U	0.010 U	0.010 U	0.010 U	5.0 U	5.0 U
Cyanide	mg/l	0.2	R	**0.68 J**	**0.986**	R	**0.22**	**5.9**	**1.4**	**0.4**	**0.16**	0.13	0.18	0.18	0.18	0.15	0.18

Notes:

BTEX - Benzene, Ethylbenzene, Toluene and Xylene.

J - Estimated.

mg/l - Milligrams per liter.

NC - No Criteria.

PAHs - Polycyclic Aromatic Hydrocarbons.

R - Rejected.

U - Not Detected.

ug/l - Micrograms per liter.

Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-7)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/7/11	6/15/11	10/12/11	12/14/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/14/15	4/6/16	10/26/16	4/26/17
CONSTITUENT	**UNITS**															
MNA/WQ Parameters																
Alkalinity (as CaCO3)	mg/l	R	R	327 J	370 J	R	310	324	367	375	392	340	403	395	406	412
Chloride	mg/l	122	93.8 B	111 J	R	91.2	101	114	84	79	62.8	67.7	66.7	66.2	79.4	68.9
Ethane	ug/l	1.5 U	150 U	1.5 U	75 U	75 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5U	0.38 J	0.86 J
Ethene	ug/l	1.5 U	150 U	1.5 U	75 U	75 U	7.0U	7.0U	7.0U	7.0U	7.0U	7.0U	7.0U	7.0U	0.035 U	0.090 J
Ferrous Iron	mg/l	R	1.7 J	0.83 J	R	0.1 U	0.37	0.1 U	0.25	6.24	0.1 U	0.1 U	0.1 U	0.14	0.59	3.7
Manganese	mg/l	0.67	0.62	0.66	0.94	0.51	0.96	1.1	1.1	0.564	0.49	0.49	0.46	0.53	0.43	0.478
Methane	ug/l	190	210	190	300	210	240	40	23	150	82	35	96	17	160	240
Nitrate	mg/l	0.05 U	0.02 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.14	0.10 U	0.10 U
Nitrogen	mg/l	1.4	1.3	1.6	R	1.6	1.6	4.6	1.5	0.16	2	1.1	1.5	1.6	2.2	1.8
Sulfate	mg/l	745 B	611 B	R	R	674 B	509	654	518	540	457	442	533	384	476	396
Sulfide	mg/l	1 U	0.8 J	2.8	1 U	1 U	1.2	1.4	1.4	1.4	1	1 U	1 U	1U	1.0 U	1.0 U

Notes:

B - Present in Associated Blank Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-10)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	09/29/10	1/4/11	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/13/15	4/6/16	10/26/16	4/26/17
BTEX Compounds																			
Benzene	ug/l	1	1 U	1 U	1 U	**7.1**	**1.3**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1U	1.0U	**1.9**
Ethylbenzene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	1U	1.0U	1.0U
m/p-Xylene	ug/l	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2U	2.0U	2.0U
o-Xylene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U	1.0U
Toluene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2	1U	1.0U	1.0U
PAHs																			
Acenaphthene	ug/l	20	1.6	1.3	1.8 J	2.4	2.3	0.099 J	1.4	2	2.2	1.1	0.8	0.48 U	0.63	0.50 U	0.50 U	1.4	0.72
Acenaphthylene	ug/l	NC	0.43 J	0.32	0.24 J	0.42 J	0.74 J	0.13 J	0.14 J	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.18	0.16
Anthracene	ug/l	50	0.061 J	0.047 J	0.47 U	0.47 U	0.28 J	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U	0.097U
Benzo(a)anthracene	ug/l	0.002	**0.13 J**	**0.057 J**	0.47 U	0.47 U	**1**	0.47 U	**0.49 B**	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U	**0.11**
Benzo(a)pyrene	ug/l	0.002	**0.14 J**	**0.057 J**	0.47 U	0.47 U	**0.81**	0.47 U	**0.19 J**	0.48 U	**0.55**	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U	**0.10**
Benzo(b)fluoranthene	ug/l	0.002	**0.071 J**	**0.047 J**	0.47 U	0.47 U	**0.8**	0.47 U	**0.24 J**	0.48 U	**0.86**	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U	**0.17**
Benzo(g,h,i)perylene	ug/l	NC	0.051 J	0.19 U	0.47 U	0.47 U	0.37 J	0.47 U	0.08 J	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U	0.097U
Benzo(k)fluoranthene	ug/l	0.002	**0.092 J**	**0.047 J**	0.47 U	0.47 U	**0.53**	0.47 U	**0.18 J**	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U	**0.15**
Chrysene	ug/l	0.002	**0.12 J**	**0.047 J**	0.47 U	0.47 U	**0.91**	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U	**0.099**
Dibenzo(a,h)anthracene	ug/l	NC	0.20 U	0.19 U	0.47 U	0.47 U	0.11 J	0.47 U	0.48 U	0.48 U	**1.1**	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U	0.097U
Fluoranthene	ug/l	50	0.24	0.11 J	0.085 J	0.47 U	1.5	0.47 U	0.34 J	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10	0.16
Fluorene	ug/l	50	0.13 J	0.14 J	0.47 U	0.47 U	0.49 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U	0.097U
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**0.051 J**	**0.19 U**	0.47 U	0.47 U	**0.34 J**	0.47 U	**0.076 J**	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U	0.097U
Naphthalene	ug/l	10	0.33	0.19 U	0.47 U	0.47 U	0.49 U	0.47 U	0.48 U	0.7	0.7	0.48 U	0.48 U	0.48 U	0.50 U	7.9	0.50U	0.23	0.097U
Phenanthrene	ug/l	50	0.11 J	0.19 U	0.47 U	0.47 U	0.53	0.10 J	0.18 J	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U	0.097U
Pyrene	ug/l	50	0.33 J	0.13 J	0.15 J	0.57 U	1.8	0.14 J	0.41 J	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.15	0.20
Cyanide and Lead																			
Lead	ug/l	25	5 U	5 U	5 U	3 U	9.1	3.9 J	6.4	5 U	8.4	5 U	5 U	5 U	0.010 U	0.010 U	0.010U	5.0U	10.0U
Cyanide	mg/l	0.2	0.139	0.124	R	0.17 J	0.156	R	0.078	0.14	0.1	0.11	0.081	0.10	0.098	0.010	0.085	0.081	0.13

Notes:
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
J - Estimated.
mg/l - Milligrams per liter.
NC - No Criteria.
PAHs - Polycyclic Aromatic Hydrocarbons.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-10)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/6/11	6/14/11	10/11/11	12/14/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/13/15	4/6/16	10/26/16	4/26/17
CONSTITUENT	**UNITS**															
MNA/WQ Parameters																
Alkalinity (as CaCO3)	mg/l	R	R	523 J	541 J	R	589	584	552	566	548	512	581	586	660	628
Chloride	mg/l	181 B	160 B	156 J	R	147	316	286	265	470	664	698	1060	893	784	390
Ethane	ug/l	1.5 U	7.5 U	1.5 U	1.5 U	1.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5U	0.16 J	0.33 J
Ethene	ug/l	1.5 U	7.5 U	1.5 U	1.5 U	1.5 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0U	0.035 U	0.12 J
Ferrous Iron	mg/l	R	0.34 J	0.47	0.1 U	R	0.10 U	0.10 U	0.12	6.06	0.10 U	0.10 U	0.10 U	0.11	1.0	4.2
Manganese	mg/l	1.2	0.95	0.88	0.58	0.83	1	1.2	0.75	1.07	1.3	1.3	1.6	1.2	1.2	1.020
Methane	ug/l	34	9.8	33	85	40	72	32	28	110	130	63	82	56	420	300
Nitrate	mg/l	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.11	0.05U	0.12	0.10 U
Nitrogen	mg/l	8.5	4.9	4.9	R	5.4	5.7	6.1	4.1	4.8	6.2	5.6	6.3	4	6.5	5.1
Sulfate	mg/l	306	296 B	R	R	238 B	175	174	171	153	89.7	167	53.9	44.4	56.6	148
Sulfide	mg/l	R	1 U J	0.8 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0 U	1.0 U

Notes:
B - Present in Associated Blank Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-11)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/14/15	4/6/16	10/25/16	4/26/17
BTEX Compounds																	
Benzene	ug/l	1	**2.8**	**13**	**18**	**15**	**7.9**	**12**	**3.5**	**8.1**	**10**	**22**	**7.3**	NS	NS	NS	NS
Ethylbenzene	ug/l	5	1.9	**6.9**	**6.1**	**5.5**	3.5	1 U	1.2	3.8	**5.1**	**7.8**	3	NS	NS	NS	NS
m/p-Xylene	ug/l	5	2.2	**5.3**	2.4	2.1	1.4 J	2 U	2 U	2 U	2 U	2.1	2 U	NS	NS	NS	NS
o-Xylene	ug/l	5	1.1	3.1	2.0	2.0	1.2	1 U	1 U	1.6	2.1	2.6	1.5	NS	NS	NS	NS
Total Xylenes			3.3	8.4	2.4	2.1	1.2	0	0	1.6	2.1	4.7	1.5				
Toluene	ug/l	5	1 U	1.4	0.97 J	0.99 J	0.69 J	1 U	1 U	1 U	1.1	1.9	1 U	NS	NS	NS	NS
PAHs																	
Acenaphthene	ug/l	20	**150**	**110**	**120**	**130**	**100**	**140 E**	**97**	**110**	**120**	**110**	**59**	NS	NS	NS	NS
Acenaphthylene	ug/l	NC	290	290	240 D	270 D	210	160 E	120	170	110	150	56	NS	NS	NS	NS
Anthracene	ug/l	50	**88**	19 B	19	17	11	23	13	28	13	16	4.2	NS	NS	NS	NS
Benzo(a)anthracene	ug/l	0.002	**35**	**6.2 B**	**2.7**	**3.0 B**	**5.2 B**	**3.8**	0.002U	**8.3**	**3.2**	4.8	**1.9**	NS	NS	NS	NS
Benzo(a)pyrene	ug/l	0.002	**34**	**5.7 B**	**2.8**	**2.5 B**	**2.3 J**	**2.7**	**3.3**	**8.5**	**2.8**	4.7	**0.84**	NS	NS	NS	NS
Benzo(b)fluoranthene	ug/l	0.002	**24**	**4.8 B**	**1.9**	**2.1**	**1.8 J**	**1.7**	0.002U	0.002U	0.002U	4.6	**0.68**	NS	NS	NS	NS
Benzo(g,h,i)perylene	ug/l	NC	20	4.0 B	1.4	1.7	1.3 J	1	1	3.4	0.002U	1.8	0.002U	NS	NS	NS	NS
Benzo(k)fluoranthene	ug/l	0.002	**12**	**2.5 B**	**1**	**0.78**	**1.2 J**	**1.6**	0.002U	0.002U	0.002U	2.1	0.002U	NS	NS	NS	NS
Chrysene	ug/l	0.002	**43**	**8.1 B**	**3.3**	**3.5 B**	5.1 U	**3.4**	**4.4**	**10**	**5.4**	7.6	0.99	NS	NS	NS	NS
Dibenzo(a,h)anthracene	ug/l	NC	3.2	2.4 U	0.30 J	0.59	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	0.47 U	0.47 U	NS	NS	NS	NS
Fluoranthene	ug/l	50	**96**	22 B	20	16	12	24	14	28	12	16	5.4	NS	NS	NS	NS
Fluorene	ug/l	50	**130**	**72**	**79**	**83**	**62**	**92**	**62**	**70**	31	44	16	NS	NS	NS	NS
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**13**	**2.8 B**	**0.96**	**1.0 B**	**0.69 J**	**1.6**	0.002U	0.002U	0.002U	1.2	0.002U	NS	NS	NS	NS
Naphthalene	ug/l	10	**300**	**480**	**310 D**	**230 D**	**140**	**110**	**50**	**87**	10U	51	2.3	NS	NS	NS	NS
Phenanthrene	ug/l	50	**260**	**52 B**	**140 D**	**130**	**91**	**170**	**80**	**130**	5.8	62	1.5	NS	NS	NS	NS
Pyrene	ug/l	50	**150**	28 B	21	21	16	28	18	34	17	20	4.2	NS	NS	NS	NS
Cyanide and Lead																	
Lead	ug/l	25	**40**	7.6	12	5 U	4.6 J	5 U	5 U	5.9	5U	0.014	5U	NS	NS	NS	NS
Cyanide	mg/l	0.2	R	0.015 J	0.021	0.01 UJ	0.012	0.010 U	0.010 U	0.010 U	0.018	0.021	0.012	NS	NS	NS	NS

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
J - Estimated Concentration.
NC - No Criteria.
NS - Not Sampled.
R - Rejected.
U - Not Detected.
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
PAHs - Polycyclic Aromatic Hydrocarbons.
mg/l - Milligrams per liter.
ug/l - Micrograms per liter.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-11)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/7/11	6/15/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/14/15	4/6/16	10/25/16	4/26/17
CONSTITUENT	**UNITS**															
MNA/WQ Parameters																
Alkalinity (as CaCO3)	mg/l	R	R	518 J	536 J	R	623	507	573	465	457	428	NS	NS	NS	NS
Chloride	mg/l	345	414 B	514 J	R	321	350	202	295	454	364	314	NS	NS	NS	NS
Ethane	ug/l	1.5 U	1.5 U	1.5 U	15 U	15 U	380 U	380 U	380 U	380 U	7.5 U	7.5 U	NS	NS	NS	NS
Ethene	ug/l	1.5 U	1.5 U	1.5 U	15 U	15 U	350 U	350 U	350 U	350 U	7.0 U	7.0 U	NS	NS	NS	NS
Ferrous Iron	mg/l	R	9.4 J	0.9 J	R	0.1 U	0.5	0.18	0.22	0.29	0.1U	0.1U	NS	NS	NS	NS
Manganese	mg/l	0.94	0.45	0.69	0.66	0.47	0.95	0.95	0.55	0.56	0.56	0.25	NS	NS	NS	NS
Methane	ug/l	4.8	68	190	360	160	520	12	25	120	180	13	NS	NS	NS	NS
Nitrate	mg/l	0.13	0.05 U	0.05 U	0.05 U	0.092	0.050 U	0.79	0.32	0.32	0.059	0.28	NS	NS	NS	NS
Nitrogen	mg/l	1.3	0.59	1.3	R	1.3	1.4	0.58	0.64	0.57	1.2	0.26	NS	NS	NS	NS
Sulfate	mg/l	126 B	65.1 B	R	R	8.5 B	16.9	112	94.1	58	44.3	82.9	NS	NS	NS	NS
Sulfide	mg/l	0.8 J	0.8 J	1.6	1 U	1 U	1 U	1 U	1 U	1 U	1.8	1 U	NS	NS	NS	NS

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
NS - Not Sampled.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-12)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/14/15	4/6/16	10/26/16	4/26/17
BTEX Compounds													
Benzene	ug/l	1	1 U	**2.1**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0U	1.0U
Ethylbenzene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0U	1.0U
m/p-Xylene	ug/l	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.0U	2.0U
o-Xylene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0U	1.0U
Toluene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0U	1.0U
PAHs													
Acenaphthene	ug/l	20	0.52 U	14	0.2 U	1.1	1.1	0.48 U	0.48 U	0.47 U	0.51U	0.11	0.097U
Acenaphthylene	ug/l	NC	0.18 J	100	0.2 U	0.2 U	0.2 U	0.63	0.2 U	0.47 U	0.51U	4.4	0.097U
Anthracene	ug/l	50	0.13 J	2.8	0.2 U	1.1	1.1	0.88	0.2 U	0.73	0.51U	1.4	0.097U
Benzo(a)anthracene	ug/l	0.002	**0.57 B**	**1.5**	**0.83**	**3**	**0.66**	1.5	0.49 U	0.47 U	0.51U	**2.1**	**0.11**
Benzo(a)pyrene	ug/l	0.002	**0.35 J**	**1.5**	**1**	**3.6**	**0.92**	1.8	0.49 U	0.47 U	0.51U	**2.8**	**0.11**
Benzo(b)fluoranthene	ug/l	0.002	**0.27 J**	**1.3**	**0.91**	**3.4**	**0.71**	2.1	0.49 U	0.47 U	0.51U	**2.3**	**0.13**
Benzo(g,h,i)perylene	ug/l	NC	0.27 J	0.62	0.49 U	0.49 U	0.51	0.74	0.49 U	0.47 U	0.51U	1.6	0.097U
Benzo(k)fluoranthene	ug/l	0.002	**0.38 J**	**0.58**	0.49 U	**0.83**	0.49 U	0.74	0.49 U	0.47 U	0.51U	**0.94**	**0.11**
Chrysene	ug/l	0.002	**0.60 B**	**1.1**	**1**	**3**	0.49 U	1.6	0.49 U	0.47 U	0.51U	**1.9**	0.097U
Dibenzo(a,h)anthracene	ug/l	NC	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.48 U	0.49 U	0.47 U	0.51U	0.29	0.097U
Fluoranthene	ug/l	50	0.41 J	3.4	1.4	4.3	0.87	2.00	0.49 U	0.47 U	0.52	3.9	**0.11**
Fluorene	ug/l	50	0.52 U	2.2	0.49 U	0.49 U	0.49 U	0.48 U	0.49 U	0.47 U	0.51U	0.51	0.097U
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**0.13 J**	**0.97**	0.49 U	**1.2**	0.49 U	0.51	0.49 U	0.47 U	0.51U	**1.2**	0.097U
Naphthalene	ug/l	10	0.52 U	160 E	2.5	0.99	0.52 U	1.6	0.49 U	1.9	0.51U	0.96	0.097U
Phenanthrene	ug/l	50	0.48 J	7.6	1.1	3.6	0.61	2	0.49 U	0.47 U	0.51U	3.5	0.097U
Pyrene	ug/l	50	0.59	4.2	2.4	5.8	1.3	2.8	0.49 U	0.47 U	0.64	5.4	0.17
Cyanide and Lead													
Lead	ug/l	25	5 U	5 U	5 U	**29**	5 U	0.018	0.49 U	10 U	10U	5.0U	5.0U
Cyanide	mg/l	0.2	0.0062 J	0.010 U	0.010 U	0.010 U	0.010 U	0.013	0.49 U	0.01 U	0.01U	0.010U	0.010U

Notes:

B - Present in Associated Blank Sample.

J - Estimated Concentration.

NC - No Criteria.

U - Not Detected.

BTEX - Benzene, Ethylbenzene, Toluene and Xyle

PAHs - Polycyclic Aromatic Hydrocarbons.

Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-12)
Johnstown MGP Site
Johnstown, NY

Sample Date		12/14/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/14/15	4/6/16	10/26/16	4/26/17
CONSTITUENT	**UNITS**												
MNA/WQ Parameters													
Alkalinity (as CaCO3)	mg/l	478 J	R	434	391	415	329	414	368	401	415	436	466
Chloride	mg/l	R	129 B	468	123	662	150	493	139	591	276	556	152
Ethane	ug/l	1.5 U	1.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5U	0.47 J	0.025 U
Ethene	ug/l	1.5 U	1.5 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7U	0.035 U	0.035 U
Ferrous Iron	mg/l	0.1 U	0.1 U	0.44	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1U	0.11	0.10 U
Manganese	mg/l	0.16	0.12	0.52	0.19	2.1	0.36	1.2	0.16	0.039	0.062	0.202	0.0201
Methane	ug/l	1.1	0.56 J	47	1 U	1 U	1 U	4 U	4 U	4 U	4U	1.95	0.24 J
Nitrate	mg/l	6.2	3.2	0.05 U	2.5	4.8	1.4	3.7	1.4	2.5	3.3	2.9	5.1
Nitrogen	mg/l	R	0.19 J	0.29	0.24	2.4	0.44	0.61	0.61	0.2 U	0.2U	1.0 U	1.0 U
Sulfate	mg/l	R	53.5 B	81.4	73.5	115	51.6	73.5	54.8	70.2	93.7	56.0	115
Sulfide	mg/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0 U	1.0 U

Notes:
B - Present in Associated Blank Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-13)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	9/29/10	1/4/11	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/13/15	4/6/16	10/25/16	4/26/17
BTEX Compounds																			
Benzene	ug/l	1	**430**	**360**	**71**	**200**	**59**	**300**	**370**	**360**	**490**	**400**	**200**	**300**	**17**	**360**	**300**	**348**	**15.5**
Ethylbenzene	ug/l	5	**850**	**730**	**87**	**200**	**110**	**520**	**670**	**490**	**600**	**320**	**200**	**340**	**17**	**190**	**270**	**366**	**7.4**
m/p-Xylene	ug/l	5	**920**	**810**	**110**	**240**	**140**	**550**	**740**	**590**	**730**	**420**	**250**	**480**	**24**	**270**	**360**	**467**	**12.1**
o-Xylene	ug/l	5	**390**	**350**	**71**	**130**	**74**	**260**	**340**	**260**	**320**	**190**	**120**	**210**	**16**	**120**	**150**	**203**	**8.4**
Toluene	ug/l	5	**800**	**660**	**80**	**260**	**89**	**550**	**740**	**520 E**	**710**	**440**	**270**	**430**	**17**	**320**	**410**	**552**	**7.6**
PAHs																			
Acenaphthene	ug/l	20	**120**	**140**	17	**46**	**60**	**76**	**82 J**	**170**	**130**	**77**	**71**	**130**	4.9 U	65 E	**130**	**225**	0.34
Acenaphthylene	ug/l	NC	260 JD	320 D	51	170	220 J	230 D	210	570	430	350	22	450	4.9 U	77 E	220	267	1.2
Anthracene	ug/l	50	12	15	3.6	12 B	15	15	97 U	47 U	47 U	47 U	6.9	14	4.9 U	9.2 F1 F2	10	19.2	0.55
Benzo(a)anthracene	ug/l	0.002	**1.9 J**	**2 J**	**0.35 J**	**4.9 B**	**7.3 J**	**5.3 B**	97 U	47 U	47 U	47 U	47 U	**1.9**	0.001 U	0.59 F2	9.7U	**6.7**	**0.93**
Benzo(a)pyrene	ug/l	0.000	**1.9 J**	**1.4 J**	**0.13 J**	**4.1 B**	10 U	**5.3 B**	97 U	47 U	47 U	47 U	47 U	**1.6**	0.001 U	0.49 U	9.7U	**6.5**	**1.0**
Benzo(b)fluoranthene	ug/l	0.002	**0.75 J**	**0.78 J**	0.49 U	**3.5 B**	10 U	**3.8**	97 U	47 U	47 U	47 U	47 U	**2.8**	0.001 U	0.49 U	9.7U	**6.2**	**1.2**
Benzo(g,h,i)perylene	ug/l	NC	0.75 J	3.9 U	0.49 U	2.5 B	10 U	3.8	97 U	47 U	47 U	47 U	47 U	0.6	0.001 U	0.49 U	9.7U	3.3	0.55
Benzo(k)fluoranthene	ug/l	0.002	3.8 U	0.78 J	0.49 U	2.4 U	10 U	**2.6**	97 U	47 U	47 U	47 U	47 U	**0.53**	0.001 U	0.49 U	9.7U	**2.5**	**1.1**
Chrysene	ug/l	0.002	**1.7 J**	**1.4 J**	**0.26 J**	**3.6 B**	**5.5 J**	**4.9 B**	97 U	47 U	47 U	47 U	47 U	**1.8**	0.001 U	0.50 F1 F2	9.7U	**6.1**	**0.81**
Dibenzo(a,h)anthracene	ug/l	NC	3.8 U	3.9 U	0.49 U	2.4 U	10 U	0.79 B	97 U	47 U	47 U	47 U	47 U	0.47 U	0.001 U	0.49 U	9.7U	0.85	0.13
Fluoranthene	ug/l	50	7.7	8.4	2.6	12 B	16	14	97 U	47 U	47 U	47 U	6.1	8.2	4.9 U	5.5 F2	9.7U	17.8	1.9
Fluorene	ug/l	50	**73**	**84**	18	48	**52 J**	**53**	37 J	**110**	**93**	**68**	30	**94 J**	4.9 U	43 F1 F2	**55**	**74.8**	0.46
Indeno(1,2,3-cd)pyrene	ug/l	0.002	3.8 U	3.9 U	0.49 U	2.4 U	10 U	**2.3 B**	97 U	47 U	47 U	47 U	47 U	**0.48**	0.001 U	0.49 U	9.7U	**2.7**	**0.42**
Naphthalene	ug/l	10	**6000 D**	**5600 D**	**250 D**	**1600 D**	**2900 D**	**5000 D**	**4100**	**8200**	**7100**	**3700**	10U	**4200**	4.9 U	350 E	**170**	**5560**	0.96
Phenanthrene	ug/l	50	**58**	**68**	7.2	44 B	**60**	**55**	44 J	**76**	**73**	**61**	50U	**70**	4.9 U	31 F1	9.7U	**78.3**	1.5
Pyrene	ug/l	50	9.8 J	8.8	2.9	14 B	19	17	97 U	47 U	47 U	47 U	7.2	9.7	4.9 U	5.8 F2	9.7U	52.1U	1.7
Cyanide and Lead																			
Lead	ug/l	25	6.4	5 U	5 U	15 J	**27**	9.2	5.8	5 U	7.8	5 U	5 U	5 U	4.9 U	10 U	10U	5.0U	5.0U
Cyanide	mg/l	0.2	**0.618**	**0.652**	R	**0.42 J**	**0.235**	R	**0.33**	**0.39**	**0.32**	**0.26**	0.17	**0.24**	0.11	0.22 F1	**0.29**	**0.23**	0.070

Notes:

B - Present in Associated Blank Sample.

D - From a Diluted Sample.

E - Result exceeded calibration range.

F1 - MS and/or MSD Recovery is outside acceptance limits.

F2 - MS/MSD RPD exceeds control limits.

J - Estimated Concentration.

NC - No Criteria.

R - Rejected.

U - Not Detected.

BTEX - Benzene, Ethylbenzene, Toluene and Xylene.

PAHs - Polycyclic Aromatic Hydrocarbons.

mg/l - Milligrams per liter.

ug/l - Micrograms per liter.

Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-13)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/7/11	6/15/11	10/12/11	12/14/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	10/13/15	4/6/16	10/25/16	4/26/17
CONSTITUENT	**UNITS**														
MNA/WQ Parameters															
Alkalinity (as CaCO3)	mg/l	R	R	455 J	165 J	R	158	218	187	176	255	283 F1	311	364	234
Chloride	mg/l	29.1	18.6 B	5.9 J	R	20.5	21.6	20.4	7.3	9.2	17.3	11.2	9.8	11.4	3.4
Ethane	ug/l	1.5 U	15 U	1.5 UJ	15 U	15 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5U	1.2	0.025 U
Ethene	ug/l	1.5 U	15 U	1.5 UJ	15 U	15 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.5U	3.3	0.035 U
Ferrous Iron	mg/l	R	0.1 UJ	3.1 J	0.08 J	0.1 U	0.12	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1U	0.18	0.10 U
Manganese	mg/l	0.12	0.077	0.83	0.16	0.096	0.092	0.11	0.088	0.14	0.031	0.064	7.5U	0.0938	0.0417
Methane	ug/l	32	46	28 J	72	66	120	36	15	74	4.0 U	110	50	280	0.34 J
Nitrate	mg/l	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05	0.10 U	0.10 U
Nitrogen	mg/l	1.1	1.3	2 U	R	1.4	1.4	1.8	1.2	2.1	0.62	1.4	1.2	1.3	1.0 U
Sulfate	mg/l	5 U	3.3 JB	R	R	52.1 J	139	82.3	15.5	15.5	5.0 U	5.0 U	5U	18.3	16.0
Sulfide	mg/l	1 U	3.2 J	1.2	R	R	1.2	1 U	1 U	1 U	1 U	1 U	1	1.0 U	1.0 U

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
F1 - MS and/or MSD Recovery is outside acceptance limits.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-14)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	1/4/11	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/13/15	4/6/16	10/25/16	4/26/17
BTEX Compounds																		
Benzene	ug/l	1	**17**	1 U	**2.5**	**11**	**2.5**	**2.9**	1 U	1 U	**1.3**	1 U	1 U	1 U	1 U	0.54U	1.0U	1.0U
Ethylbenzene	ug/l	5	**3.3**	1 U	1 U	1 U	1 U	1.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.54U	1.0U	1.0U
m/p-Xylene	ug/l	5	**3.1**	2 U	2 U	2 U	2 U	2.4	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.54U	2.0U	2.0U
o-Xylene	ug/l	5	**5.6**	1 U	1 U	1 U	1 U	2.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.54U	1.0U	1.0U
Toluene	ug/l	5	0.88 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.54U	1.0U	1.0U
PAHs																		
Acenaphthene	ug/l	20	4.9	0.47 U	0.47 U	1.2	0.82	5.1	1.4	0.48 U	2.2	0.5	2.00	0.47 U	0.52 U	0.54U	0.19	0.096U
Acenaphthylene	ug/l	NC	11	0.47 U	0.47 U	3	1.3	9	1.9	0.48 U	2.5	0.48 U	2.9	0.47 U	0.52 U	0.54U	0.99	0.25
Anthracene	ug/l	50	0.98	0.47 U	0.47 U	0.50 U	0.18 J	0.5	0.48 U	0.48 U	0.48 U	0.48 U	0.5	0.47 U	0.52 U	0.54U	0.25	0.096
Benzo(a)anthracene	ug/l	0.002	**0.27 J**	0.47 U	0.47 U	**0.29 J**	**0.91 B**	0.50 U	0.48 U	0.48 U	**0.62**	**1**	**1.9**	0.47 U	0.52 U	0.54U	**0.28**	**0.13**
Benzo(a)pyrene	ug/l	0.002	**0.24 J**	0.47 U	0.47 U	**0.15 J**	**0.90 B**	**0.12 J**	0.48 U	0.48 U	**0.65**	**1.3**	**2.4**	0.47 U	0.52 U	0.54U	**0.32**	**0.12**
Benzo(b)fluoranthene	ug/l	0.002	**0.15 J**	0.47 U	0.47 U	0.50 U	**0.78**	0.50 U	0.48 U	0.48 U	**0.79**	**1.2**	**3.8**	0.47 U	0.52 U	0.54U	**0.55**	**0.21**
Benzo(g,h,i)perylene	ug/l	NC	0.18 J	0.47 U	0.47 U	0.50 U	0.70	0.09 J	0.48 U	0.48 U	0.48 U	0.95	1.3	0.47 U	0.52 U	0.54U	0.29	0.11
Benzo(k)fluoranthene	ug/l	0.002	**0.15 J**	0.47 U	0.47 U	0.50 U	**0.57**	**0.17 J**	0.48 U	0.48 U	0.48 U	**0.83**	**1.1**	0.47 U	0.52 U	0.54U	**0.47**	**0.18**
Chrysene	ug/l	0.002	**0.3 J**	0.47 U	0.47 U	**0.19 J**	**0.85**	0.50 U	0.48 U	0.48 U	**0.69**	**1.2**	**2.1**	0.47 U	0.52 U	0.54U	**0.27**	**0.13**
Dibenzo(a,h)anthracene	ug/l	NC	0.59 U	0.47 U	0.47 U	0.50 U	0.50 U	0.50 U	0.48 U	0.48 U	0.48 U	0.48 U	0.49 U	0.47 U	0.52 U	0.54U	0.10U	0.096U
Fluoranthene	ug/l	50	1.2	0.081 J	0.47 U	0.32 J	1.5	0.61	0.59	0.48 U	1.2	1.5	3.2	0.47 U	0.52 U	0.54U	0.45	0.17
Fluorene	ug/l	50	1.4	0.47 U	0.47 U	0.50 U	0.17 J	0.35 J	0.48 U	0.48 U	0.48 U	0.48 U	0.49 U	0.47 U	0.52 U	0.54U	0.14	0.096U
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**0.59 U**	0.47 U	0.47 U	0.50 U	0.50 U	**0.054 J**	0.48 U	0.48 U	0.48 U	**0.63**	**0.95**	0.47 U	0.52 U	0.54U	**0.21**	0.096U
Naphthalene	ug/l	10	2.8	0.47 U	0.47 U	1.3	0.50 U	1.2	0.48 U	1.7	0.48	0.48 U	1.1	0.47 U	0.52 U	0.54U	5.2	0.096U
Phenanthrene	ug/l	50	2	0.47 U	0.47 U	0.25 J	0.66	1.1	0.48 U	0.48 U	0.67	0.63	1.4	0.47 U	0.52 U	0.54U	0.22	0.096U
Pyrene	ug/l	50	1.2	0.098 J	0.52 U	0.39 J	2.2	0.7	0.76	0.48 U	1.5	2.4	5.0	0.47 U	0.52 U	0.54U	0.68	0.28
Cyanide and Lead																		
Lead	ug/l	25	5 U	5 U	4.2 J	4.8 J	9.1	5.7	21	5 U	15	5 U	0.031	0.01 U	0.01 U	10U	**33.3**	5.0U
Cyanide	mg/l	0.2	**0.197**	R	0.11 J	0.114	R	**0.28**	**1.4**	0.1	**0.2**	**0.9**	0.2	0.091	0.120	**0.88**	**0.67**	0.079

Notes:

B - Present in Associated Blank Sample.

D - From a Diluted Sample.

J - Estimated Concentration.

NC - No Criteria.

R - Rejected.

U - Not Detected.

BTEX - Benzene, Ethylbenzene, Toluene and Xylene.

PAHs - Polycyclic Aromatic Hydrocarbons.

mg/l - Milligrams per liter.

ug/l - Micrograms per liter.

Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-14)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/7/11	6/15/11	10/12/11	12/14/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	10/13/14	4/6/16	10/25/16	4/26/17
CONSTITUENT	**UNITS**														
MNA/WQ Parameters															
Alkalinity (as CaCO3)	mg/l	R	R	410	453 J	R	494	417	456	483	372	445	507	520	380
Chloride	mg/l	6.1	9.7 B	5.1	R	12.8	40.4	2	7.6	28.5	3.9	10.7	27.4	18.0	3.5
Ethane	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5U	0.17 J	0.025 U
Ethene	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	7 U	7 U	7 U	7 U	7 U	7 U	7.5U	0.035 U	0.035 U
Ferrous Iron	mg/l	R	0.11 J	0.1 U	R	0.1 U	0.17	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.55	0.22
Manganese	mg/l	0.054	0.17	0.2	0.28	0.51	2	0.008	0.25	1	0.019	0.011	7.5U	0.768	0.0262
Methane	ug/l	1 U	6.2	46	15	70	140	1 U	8.6	140	4.0 U	4.0 U	31	140	19
Nitrate	mg/l	0.71	0.19	0.086	0.023 J	0.05 U	0.05 U	0.8	0.05 U	0.05 U	0.87	0.16	0.05U	0.10 U	0.29
Nitrogen	mg/l	0.85	0.32	0.36	R	0.86	2.5	0.54	0.68	1.5	0.22	0.72	1	1.2	1.0 U
Sulfate	mg/l	5 U	19.6 B	5.6 JB	R	173 B	639	5 U	5 U	363	5.0 U	5.0 U	324	153	12.5
Sulfide	mg/l	1 U	1 UJ	1 U	R	R	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0 U	1.0 U

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-15)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	9/29/10	1/4/11	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/13/15	4/6/16	10/25/16	4/26/17
BTEX Compounds																			
Benzene	ug/l	1	**1600 D**	**1200**	**940 D**	**1300 D**	**670**	**790 D**	**1500 D**	**1100 E**	**410**	**390**	**210**	**300**	**16**	**350 E**	**330**	**714**	**111**
Ethylbenzene	ug/l	5	**200**	**250**	**190 D**	**210 D**	**120**	**190 D**	**220**	**200**	**75**	**53**	**38**	**74**	1.9	**92**	**110**	**244**	**24.5**
m/p-Xylene	ug/l	5	**12**	**8.7**	**17**	**18**	**19 J**	**9**	**6.6 J**	**23**	**19**	5 U	5 U	**10 U**	3.2	**8.1**	8U	**13.7**	2.7
o-Xylene	ug/l	5	**39**	**39**	**44**	**48**	**37**	**38**	**27**	**23**	**19**	**16**	**8.5**	**28**	**7.5**	**23**	**21**	**31.7**	**7.3**
Toluene	ug/l	5	3.8 J	10 U	**6.1**	4.7	10 U	**6.3**	**6.2 J**	**5**	5 U	5 U	5 U	**5.8**	1 U	**7**	8U	**6.1**	**1.1**
PAHs																			
Acenaphthene	ug/l	20	**44 J**	**49**	**47**	**32**	**47**	**50**	**47**	**57**	**42**	**23**	**18**	**24**	6.7	16	**23**	**43.1**	10.1
Acenaphthylene	ug/l	NC	19 J	23	24	17	22	19	12	16	11	6.5	3	3.9	0.59	3.1	5.1U	2.4	1.5
Anthracene	ug/l	50	2.7 J	3.3	2.1	1.3 B	2.4	2	1.5 J	2.8	2.6	1.4	0.95	0.81	0.49 U	0.57	5.1U	1.9	0.36
Benzo(a)anthracene	ug/l	0.002	**1.8 J**	**0.85 J**	**0.38 J**	0.48 U	**0.21 J**	0.54 U	4.7 U	0.58 U	0.96	0.59	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	**0.14**	**0.13**
Benzo(a)pyrene	ug/l	0.000	**2.1 J**	**0.75 J**	**0.2 J**	0.48 U	0.49 U	0.54 U	4.7 U	0.58 U	0.96	0.59	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	0.10U	**0.10**
Benzo(b)fluoranthene	ug/l	0.002	**1.1 J**	**0.57 J**	**0.27 J**	0.48 U	0.49 U	**0.16 J**	4.7 U	0.58 U	0.85	0.62	0.58 U	**0.72**	0.49 U	0.47 U	5.1U	**0.11**	**0.16**
Benzo(g,h,i)perylene	ug/l	NC	1.2 J	0.38 J	0.49 U	0.48 U	0.49 U	0.54 U	4.7 U	0.58 U	0.58 U	0.58 U	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	0.10U	0.098U
Benzo(k)fluoranthene	ug/l	0.002	**1.3 J**	**0.38 J**	0.49 U	0.48 U	0.49 U	0.54 U	4.7 U	0.58 U	0.72	0.58 U	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	0.10U	**0.13**
Chrysene	ug/l	0.002	**1.8 J**	**0.85 J**	**0.23 J**	0.48 U	**0.16 J**	0.54 U	4.7 U	0.58 U	1.2	0.59	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	**0.11**	**0.12**
Dibenzo(a,h)anthracene	ug/l	NC	0.9 J	1.9 U	0.49 U	0.48 U	0.49 U	0.54 U	4.7 U	0.58 U	0.58 U	0.58 U	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	0.10U	0.098U
Fluoranthene	ug/l	50	4.1 J	2.7	1.8	1.2 B	1.7	1.7	1.3 J	2.6	3.3	1.7	1.1	0.93	0.49 U	0.61	5.1U	1.2	0.46
Fluorene	ug/l	50	12 J	13	13	8.7	14	13	10	17	13	6.1	4.3	5.2	1.2	4.1	5.9	11.8	1.9
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**0.9 J**	**1.9 U**	0.49 U	0.48 U	0.49 U	0.54 U	4.7 U	0.58 U	0.58 U	0.58 U	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	0.10U	0.098U
Naphthalene	ug/l	10	**110 JD**	**89**	**560 D**	**450 D**	**570 D**	**140 D**	**51**	**27**	**94**	**13**	**29**	**210**	1.5	**48 E**	**110**	**363**	**34.1**
Phenanthrene	ug/l	50	8.3 J	11	8	6.7 B	13	11	8.8	12	10	5.1	3.4	3.7	0.49 U	2.8	5.1U	8.5	1.2
Pyrene	ug/l	50	5.9 J	2.9	2.2	1.2 B	1.6	1.8	1.5 J	2.9	3.7	2	1.5	1.1	0.49 U	0.69	5.1U	1.4	0.58
Cyanide and Lead																			
Lead	ug/l	25	8.2	5 U	5 U	7.8	5.1	5 U	5 U	5 U	10	5 U	5 U	0.010	0.010	0.010	10U	5.0U	5.0U
Cyanide	mg/l	0.2	**0.843**	**0.816**	R	**0.61 J**	**0.427**	R	**0.91**	**1.2**	**0.5**	**0.5**	**0.48**	**0.58**	**0.29**	**1**	**1.1**	**1.1**	**0.42**

Notes:
B - Present in Associated Blank Sample.
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
D - From a Diluted Sample.
E - Result exceeded calibration range.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NC - No Criteria.
PAHs - Polycyclic Aromatic Hydrocarbons.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-15)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/7/11	6/15/11	10/12/11	12/14/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/13/15	4/6/16	10/25/16	4/26/17
CONSTITUENT	**UNITS**															
MNA/WQ Parameters																
Alkalinity (as CaCO3)	mg/l	R	R	502 J	547 J	R	629	527	585	482	557	480	600	601	676	562
Chloride	mg/l	22.8	43.3 B	28.5 J	R	68.2	70.6	39.4	42	44.5	44.2	14.2	49.3	55.7	65.4	25.7
Ethane	ug/l	2.9	300 U	300 U	300 U	300 U	380 U	380 U	380 U	380 U	380 U	380 U	380 U	75U	6.2	3.2
Ethene	ug/l	1.5 U	300 U	300 U	300 U	300 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	75U	0.038 J	0.037 J
Ferrous Iron	mg/l	R	0.51 J	0.47 J	0.13 J	R	0.1 U	0.15	0.18	0.1U	0.1U	0.1U	0.15 HF	0.1U	8.2	3.0
Manganese	mg/l	0.89	0.67	0.79	0.77	0.61	0.61	1	1.1	0.68	1	0.68	0.7	75U	0.609	0.0639
Methane	ug/l	680	360	720	1,900	1,600	1,900	780	580	1,100	2,400	16	1,600	720	3,400	1,900
Nitrate	mg/l	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.28	0.05 U	0.5U	0.10 U	0.10 U
Nitrogen	mg/l	1.9	3.1	2.1	R	4.6	5.4	3	3.1	3.2	2.9	0.81	3.9	3.4	4.7	2.0
Sulfate	mg/l	137 B	193 B	R	R	202 B	217	113	139	122	91.1	28.7	78.5	116	67.9	17.7
Sulfide	mg/l	1 U	1 UJ	2.4	1 U	R	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0 U	1.0 U

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
J - Estimated Concentration.
HF - Field parameter with a holding time of 15 minutes. Test performed by laboratory at clients request.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-16)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	09/29/10	1/4/11	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/13/15	4/6/16	10/25/16	4/26/17
BTEX Compounds																			
Benzene	ug/l	1	**140**	**170**	**150 D**	**100 D**	**17**	**140 D**	**150 D**	**180**	**200**	**150**	**8.7**	**59**	**91**	**40**	76	**149**	**5.9**
Ethylbenzene	ug/l	5	**70**	**110**	**92**	**51**	**5**	**78**	**66**	**100**	**150**	**92**	**6.2**	**41**	**68**	**26**	35	**134**	3.1
m/p-Xylene	ug/l	5	**31**	**55**	**47**	**27**	2.8	**29**	**26**	**14**	**41**	**23**	1U	10 U	1U	4.9	5	4.9	2.0U
o-Xylene	ug/l	5	**34**	**54**	**41**	**27**	3.6	**36**	**37**	**14**	**56**	**35**	1U	**17**	**24**	**11**	20	**32.1**	1.6
Toluene	ug/l	5	**17**	**36**	**33**	**15**	2	**21**	**11**	10 U	**14**	**9**	1U	**17**	**1U**	1.4	2U	**2.9**	1.0U
PAHs																			
Acenaphthene	ug/l	20	14 D	18	**21**	7	2.3	13	15	**30**	**30**	16	1U	**40**	**27**	14	31	**54.7**	3.0
Acenaphthylene	ug/l	NC	16 J	27 D	36	11	4.7	10	2.2	34	49	0.48 U	0.48 U	31	25	16	27	47.3	1.9
Anthracene	ug/l	50	1.7	3	2.3	0.97 B	0.20 J	1.4	1.2	1.6	2.8	0.48 U	0.48 U	2.8	1.8	1.2	2.5U	1.4	0.37
Benzo(a)anthracene	ug/l	0.002	0.19 U	0.14	0.47 U	**2.1 B**	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	**0.10**	**0.11**
Benzo(a)pyrene	ug/l	0.000	0.19 U	0.57 U	0.47 U	**2.3 B**	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U	**0.11**
Benzo(b)fluoranthene	ug/l	0.002	0.19 U	0.57 U	**0.11 J**	**2.8 B**	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U	**0.17**
Benzo(g,h,i)perylene	ug/l	NC	0.19 U	0.57 U	0.47 U	1.8 B	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U	0.097U
Benzo(k)fluoranthene	ug/l	0.002	0.19 U	0.57 U	0.47 U	**3.1 B**	0.50 U	0.47 U	**0.096 J**	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U	**0.15**
Chrysene	ug/l	0.002	0.19 U	11 J	0.47 U	**2.7 B**	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U	**0.098**
Dibenzo(a,h)anthracene	ug/l	NC	0.19 U	0.57 U	0.47 U	1.4	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U	0.097U
Fluoranthene	ug/l	50	1.2	1.4	1.7	1.5 B	0.21 J	1.1	0.94	1.5	2	0.48 U	0.48 U	2.7	1.6	1.1	2.5U	1.8	0.41
Fluorene	ug/l	50	10 D	11	16	4.7	1.3	8.8	13	17	21	9.1	0.48 U	22	14	7.1	15	22.2	1.1
Indeno(1,2,3-cd)pyrene	ug/l	0.002	0.19 U	0.57 U	0.47 U	**1.7 B**	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U	0.097U
Naphthalene	ug/l	10	0.19 U	110 D	**220 D**	0.47 U	**26**	0.47 U	0.49 U	2.4	230E	0.48 U	0.48 U	1.7	4.6	5.1	7.4	4.6	0.16
Phenanthrene	ug/l	50	5.6	9.6	13	4.8 B	1.1	6.7	6.3	11	15	0.48 U	0.48 U	18	11	6.7	10	15.9	0.99
Pyrene	ug/l	50	1.4 J	1.3	1.9	2.1 B	0.50 U	1.1	0.87	1.3	2	0.48 U	0.48 U	3	1.8	1.2	2.5U	2.0	0.50
Cyanide and Lead																			
Lead	ug/l	25	5 U	5 U	5 U	3 U	3 U	5 U	5 U	5 U	5 U	5 U	5 U	0.01U	0.01U	0.01U	10U	5.0U	5.0U
Cyanide	mg/l	0.2	**0.353**	**0.342**	R	**0.25 J**	0.137	R	**0.34**	**0.41**	0.11	0.11	0.023	**0.25**	**0.24**	**0.24**	**0.25**	**0.26**	**0.21**

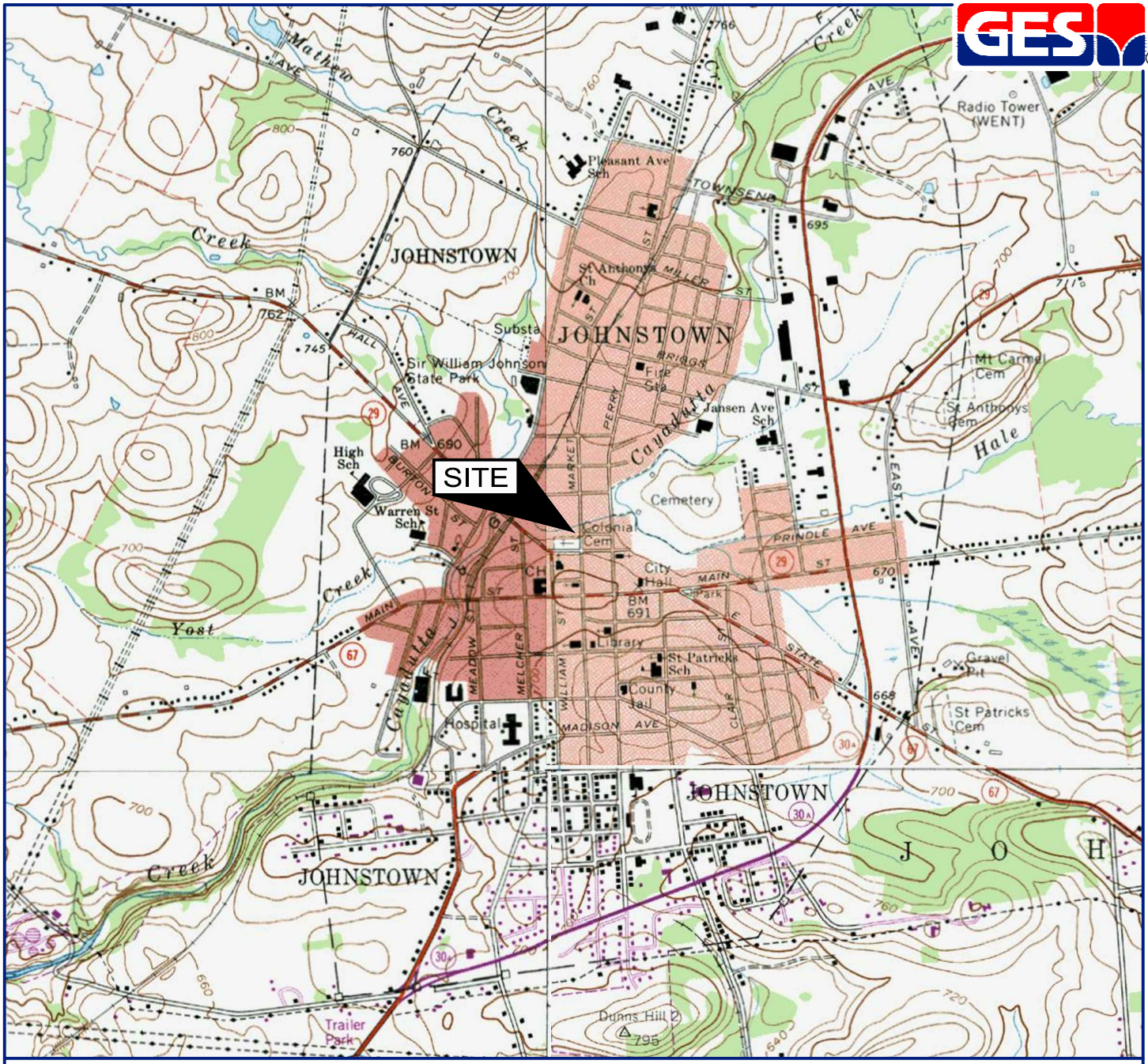
Notes:
B - Present in Associated Blank Sample.
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
D - From a Diluted Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NC - No Criteria.
PAHs - Polycyclic Aromatic Hydrocarbons.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-16)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/7/11	6/15/11	10/12/11	12/13/11	3/13/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/13/15	4/6/16	10/25/16	4/26/17
CONSTITUENT	**UNITS**															
MNA/WQ Parameters																
Alkalinity (as CaCO3)	mg/l	R	R	586 J	600 J	R	436	530	585	454	595	532	638	615	636	706
Chloride	mg/l	9.4	6.1 B	3.4 J	R	12.7	12.8	5.5	5.4	5	6.5	5.8	4.9	5.7	6.8	3.4
Ethane	ug/l	30 U	30 U	1.5 U	1.5 U	0.57 J	750 U	750 U	750 U	750 U	750 U	75U	75U	75U	1.2	0.15 J
Ethene	ug/l	30 U	30 U	1.5 U	1.5 U	2.6	700 U	700 U	700 U	700 U	700 U	70U	70U	75U	0.24 J	0.036 J
Ferrous Iron	mg/l	R	0.33 J	R	0.08	0.1 U	0.12	0.1 U	0.13	0.1 U	0.1 U	0.1 U	0.1 U	0.1U	2.4	1.2
Manganese	mg/l	0.59	0.9	0.17	0.61	0.88	1.1	0.63	0.7	0.22	0.63	0.42	0.33	75U	0.601	0.522
Methane	ug/l	270	170	37	400 B	140	550	170	150	75	410	160	1100	110	900	180
Nitrate	mg/l	0.05 U	0.05 U	0.65	0.17	0.05 U	0.05 U	0.1	0.05 U	0.53	0.05 U	0.05 U	0.37	0.074	0.10 U	0.33
Nitrogen	mg/l	2.6	1.8	R	R	3.2	3.8	3.6	2.8	2.4	3.3	2.1	1.9	2.6	5.4	2.4
Sulfate	mg/l	312 B	243 B	R	R	351 B	487	140	86	1U	107	38.2	22.8	13.3	145	37.8
Sulfide	mg/l	1 U	1 UJ	0.8 J	1 U	R	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0 U	1.0 U

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

FIGURES

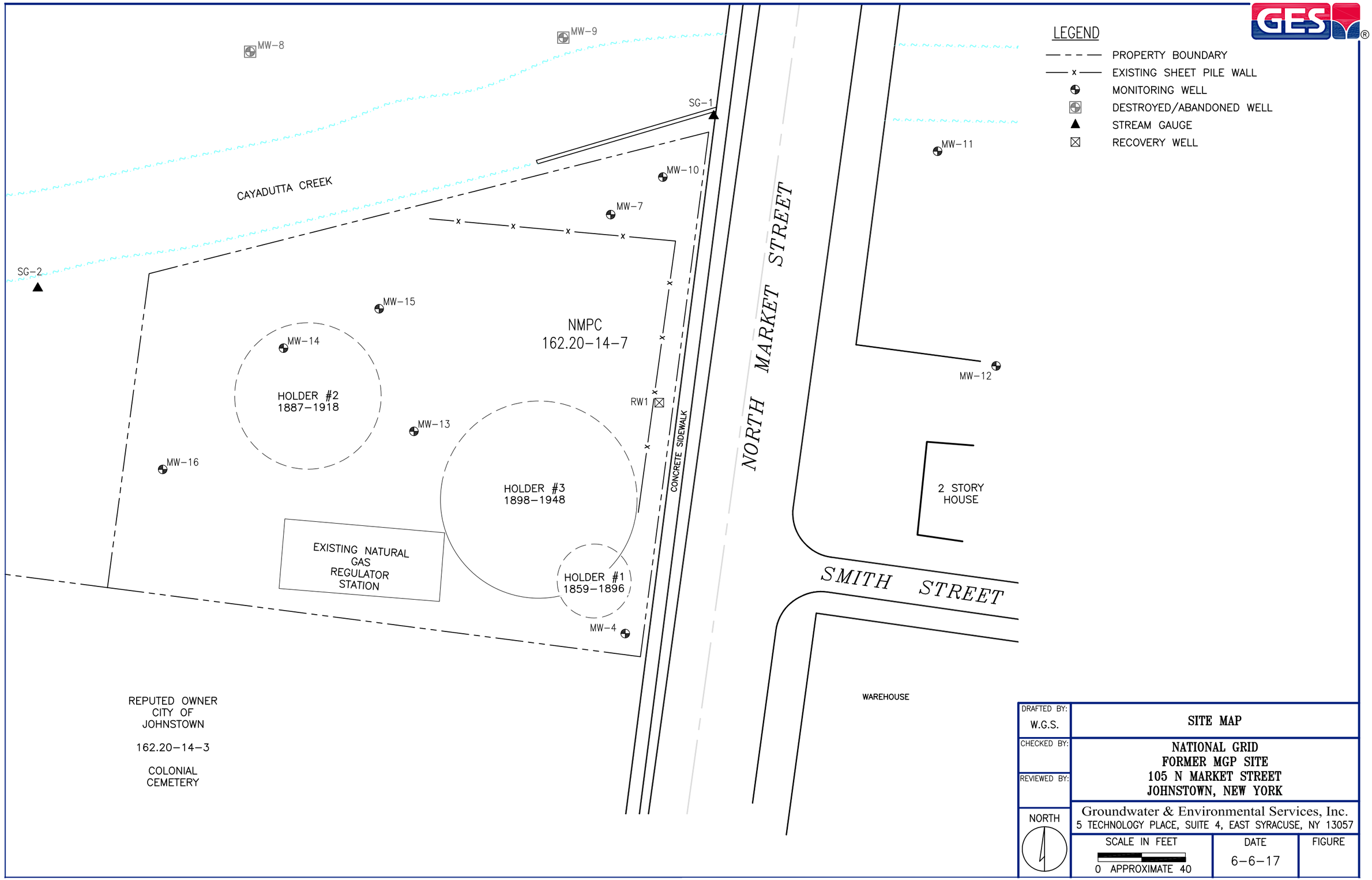


SOURCE: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE 1970
GLOVERSVILLE, NEW YORK
CONTOUR INTERVAL = 20'

QUADRANGLE LOCATION

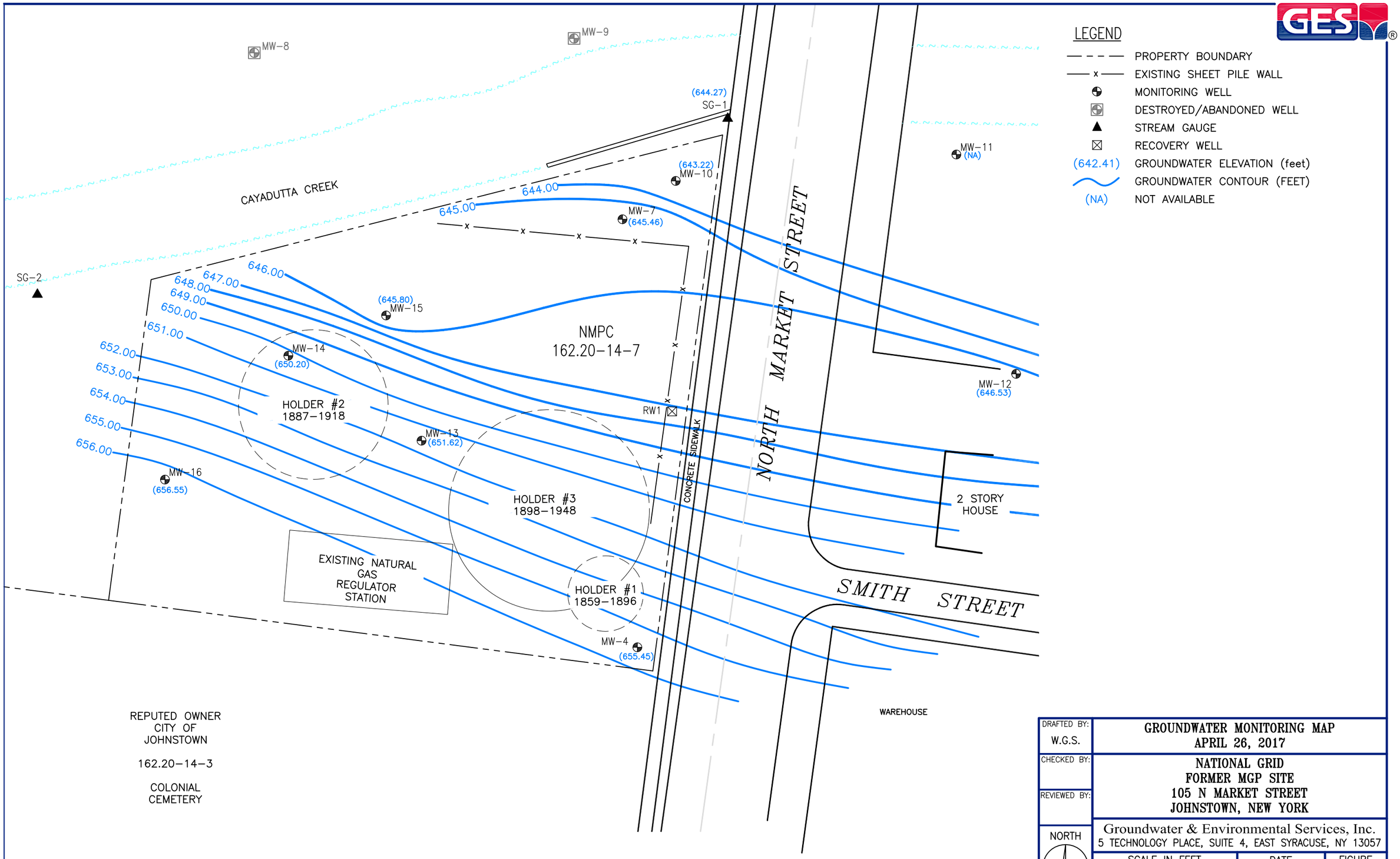
DRAFTED BY: W.G.S.	SITE LOCATION MAP
CHECKED BY:	NATIONAL GRID FORMER MGP SITE 105 N MARKET STREET JOHNSTOWN, NEW YORK
REVIEWED BY:	Groundwater & Environmental Services, Inc. 5 TECHNOLOGY PLACE, SUITE 4, EAST SYRACUSE, NY 13057
NORTH	SCALE IN FEET: 0 — 2000 / DATE: 12-12-16 / FIGURE: 1

M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SLM.dwg, Layout1, WShea



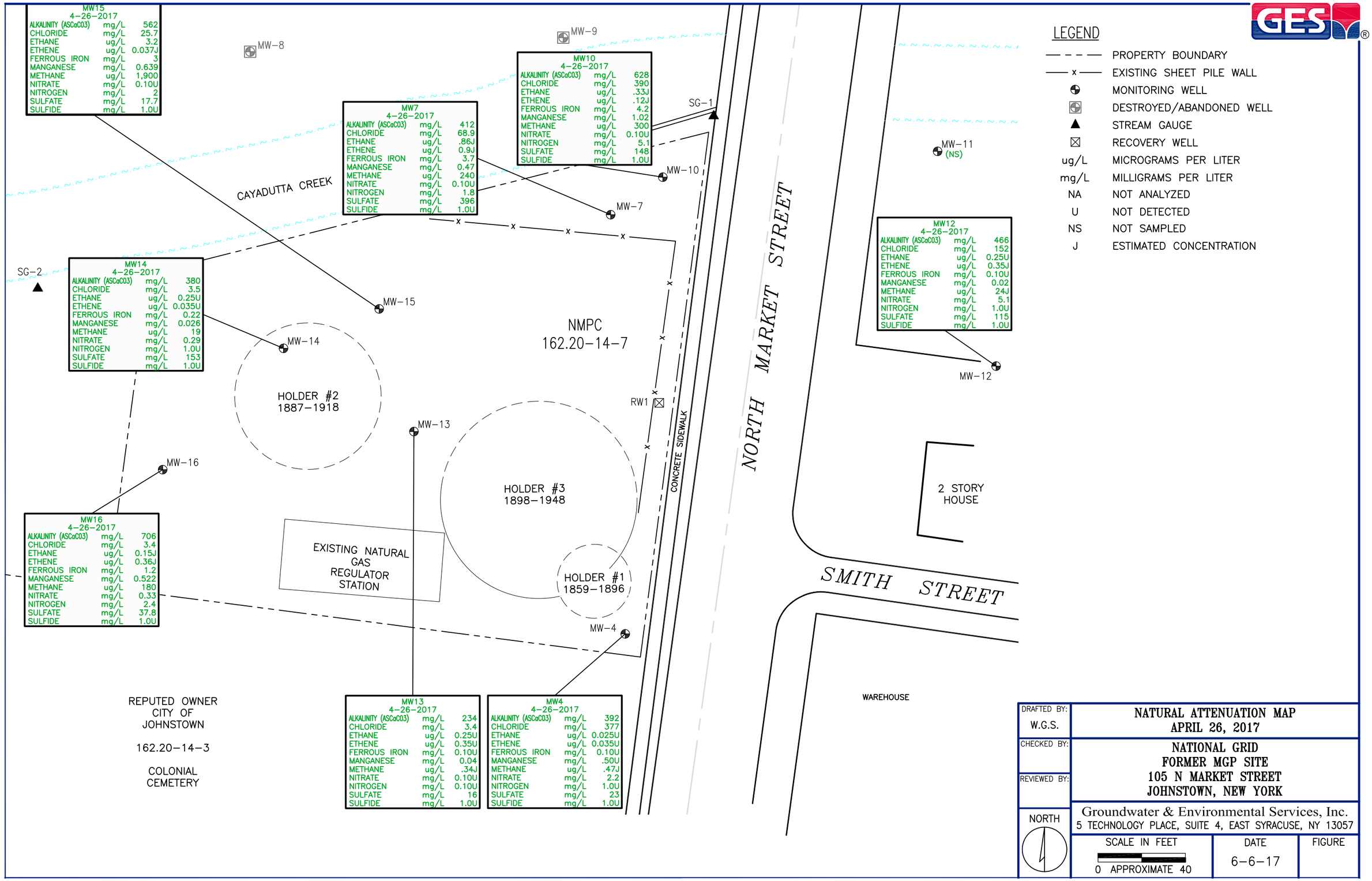
DRAFTED BY: W.G.S.	SITE MAP
CHECKED BY:	NATIONAL GRID FORMER MGP SITE 105 N MARKET STREET JOHNSTOWN, NEW YORK
REVIEWED BY:	Groundwater & Environmental Services, Inc. 5 TECHNOLOGY PLACE, SUITE 4, EAST SYRACUSE, NY 13057
NORTH	SCALE IN FEET: 0 APPROXIMATE 40 / DATE: 6-6-17 / FIGURE

M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B-40, WShea

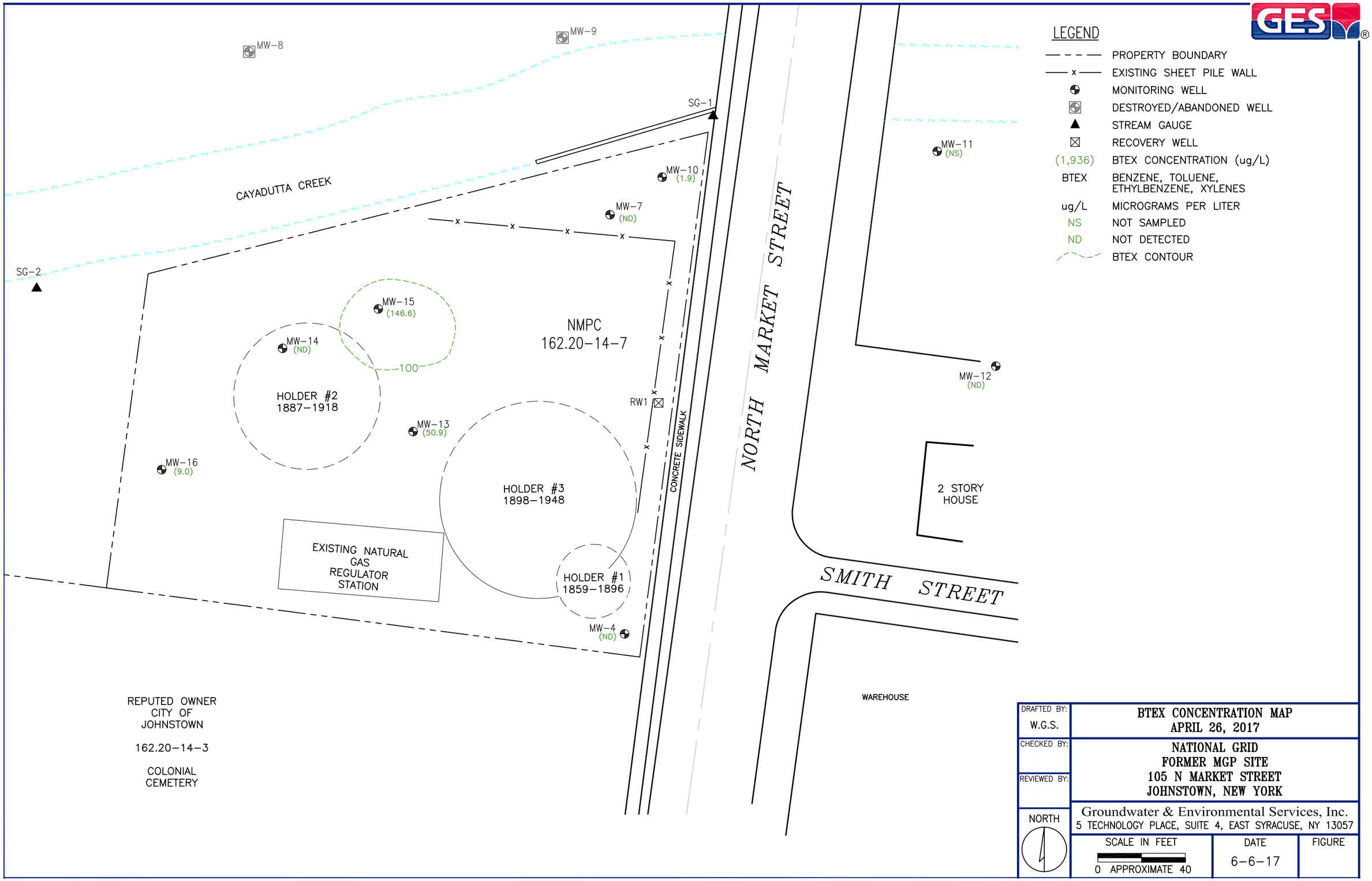


DRAFTED BY: W.G.S.	GROUNDWATER MONITORING MAP APRIL 26, 2017
CHECKED BY:	NATIONAL GRID FORMER MGP SITE 105 N MARKET STREET JOHNSTOWN, NEW YORK
REVIEWED BY:	Groundwater & Environmental Services, Inc. 5 TECHNOLOGY PLACE, SUITE 4, EAST SYRACUSE, NY 13057
NORTH	SCALE IN FEET: 0 APPROXIMATE 40 / DATE: 6-6-17 / FIGURE:

M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B-40, WShea

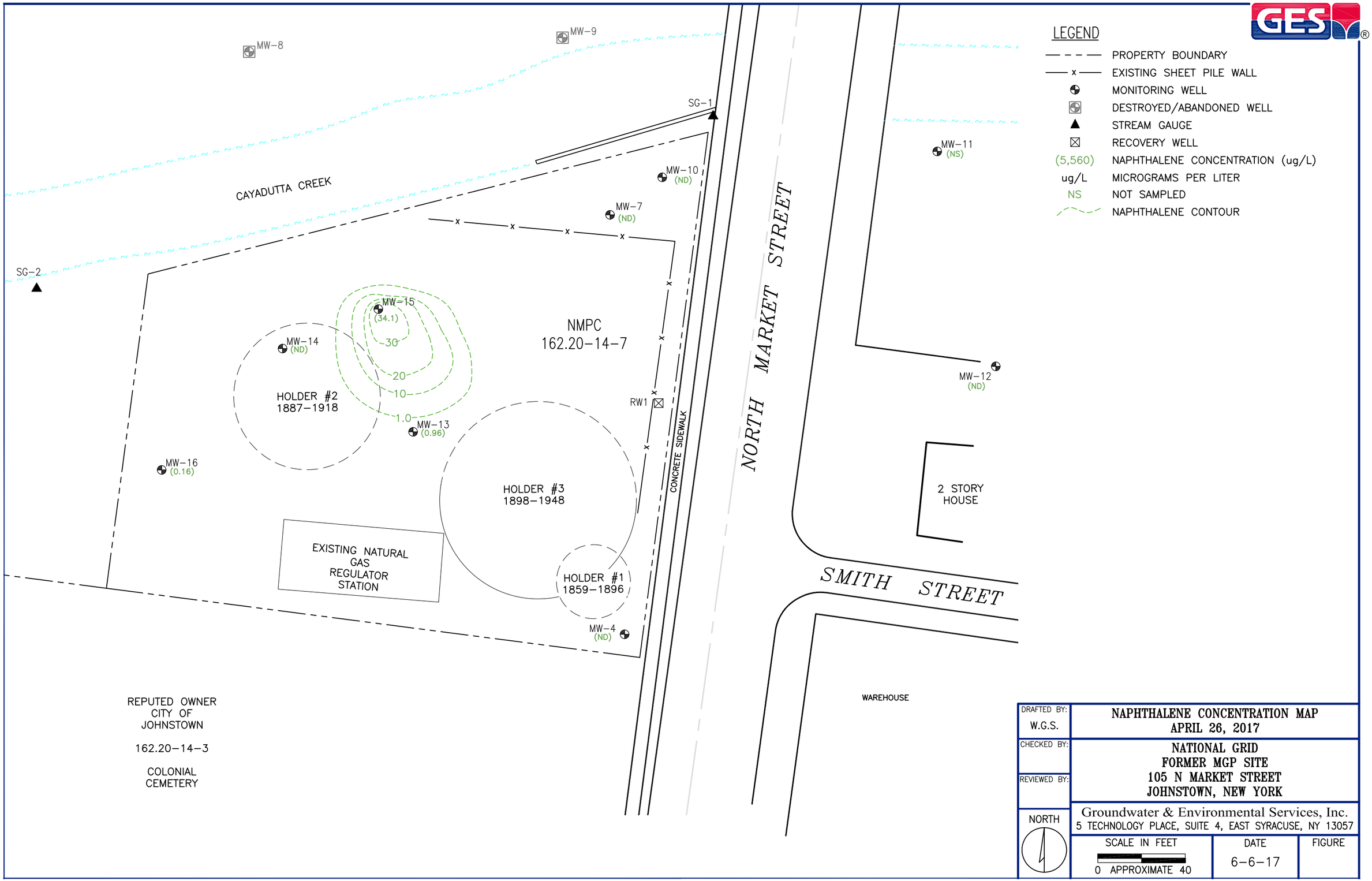


M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B-40, WShea



DRAFTED BY: W.G.S.	BTEX CONCENTRATION MAP APRIL 26, 2017
CHECKED BY:	NATIONAL GRID FORMER MGP SITE 105 N MARKET STREET JOHNSTOWN, NEW YORK
REVIEWED BY:	Groundwater & Environmental Services, Inc. 5 TECHNOLOGY PLACE, SUITE 4, EAST SYRACUSE, NY 13057
NORTH	SCALE IN FEET: 0 APPROXIMATE 40 / DATE: 6-6-17 / FIGURE

M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B-40, WShea



DRAFTED BY: W.G.S.	NAPHTHALENE CONCENTRATION MAP APRIL 26, 2017
CHECKED BY:	NATIONAL GRID FORMER MGP SITE 105 N MARKET STREET JOHNSTOWN, NEW YORK
REVIEWED BY:	Groundwater & Environmental Services, Inc. 5 TECHNOLOGY PLACE, SUITE 4, EAST SYRACUSE, NY 13057
NORTH	SCALE IN FEET: 0 APPROXIMATE 40 / DATE: 6-6-17 / FIGURE

M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B-40, WShea

APPENDIX A

FIELD DATA

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: CM
Job Number: 06-02882
Well Id. **MW-4**

Date: 4/26/17
Weather: Cloudy ~ 50°
Time In: 0900 Time Out: 1015

Well Information

		TOC	Other
Depth to Water:	(feet)	21.09	
Depth to Bottom:	(feet)	27.32	
Depth to Product:	(feet)	N/A	
Length of Water Column:	(feet)	6.23	
Volume of Water in Well:	(gal)	0.99	
Three Well Volumes:	(gal)	2.99	

Well Type: Flushmount ☐ Stick-Up ☒
Well Locked: Yes ☒ No ☐
Measuring Point Marked: Yes ☒ No ☐
Well Material: PVC ☒ SS ☐ Other:
Well Diameter: 1" ☐ 2" ☒ Other:
Comments:

Purging Information

Purging Method:	Bailer ☐	Peristaltic ☐	Well Wizard Dedicated Pump ☒		
Tubing/Bailer Material:	Teflon ☐	Stainless St. ☐	Polyethylene ☒	other ☐	
Sampling Method:	Bailer ☐	Peristaltic ☐	Well Wizard Dedicated Pump ☒		
Average Pumping Rate:	(ml/min)	200			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	1			

Did well go dry? ~~Yes ☒~~ No ☒ CM

YSI 6920 or Horiba U-52 Water Quality Meter Used? Yes ☒ No ☐

Conversion Factors				
	1" ID	2" ID	4" ID	6" ID
gal/ft. of water	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
0910	22.04	9.08	7.80	59	1.85	12.0	8.17	1.18
0915	22.11	8.80	7.35	107	1.87	40.5	4.80	1.20
0920	22.19	8.62	7.28	121	1.89	15.6	4.02	1.21
0925	22.24	8.82	7.23	131	1.89	12.6	3.36	1.21
0930	22.30	8.88	7.22	137	1.89	7.0	3.97	1.21
0935	22.36	8.90	7.21	143	1.88	7.2	4.24	1.21

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	
EPA SW-846 Method 8260	VOC's BTEX	
EPA Method 6010	LEAD	
	MANGANESE	
EPA Method 9012A	TOTAL CYANIDE	
EPA Method 310.2	TOTAL ALKALINITY	
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	
EPA Method 376.1	SULFIDE	
SM_3500_FE_D	FERROUS IRON	
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE	
EPA Method 375.4	SULFATE	
EPA Method 353.2	NITRATE	
SM_4500_Cl_E	CHLORIDE	

2 - 1L glass	Yes ☒	No ☐
3 - 40 ml vials HCl	Yes ☒	No ☐
2 - 250 ml plastic HNO3	Yes ☒	No ☐
1 - 250 ml plastic NaOH	Yes ☒	No ☐
1 - 125 ml plastic	Yes ☒	No ☐
1 - 250 ml plastic H2SO4	Yes ☒	No ☐
1 - 250 ml plastic Zn Acitate and NaOH	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
2 - 40 ml vials BAK	Yes ☒	No ☐
1- 250 ml plastic	Yes ☒	No ☐
1- 250 ml platics H2SO4	Yes ☒	No ☐
1- 250ml plastic	Yes ☒	No ☐

Shipped: Drop-off Albany Service Center ☒

Sample ID: **MW-4-0417**
Sample Time: 0940

Duplicate? Yes ☐ No ☒
MS/DMS? Yes ☐ No ☒

Laboratory: Pace Analytical
Greensburg, Pennsylvania

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: ~~Eric Rosenzweig~~ OM
Job Number: 06-02882
Well Id. **MW-7**

Date: 9/26/17
Weather: Cloudy 250°
Time In: 1245 Time Out: 1340

Well Information

		TOC	Other
Depth to Water:	(feet)	13.02	
Depth to Bottom:	(feet)	22.10	
Depth to Product:	(feet)	N/A	
Length of Water Column:	(feet)	8.48	
Volume of Water in Well:	(gal)	1.36	
Three Well Volumes:	(gal)	4.08	

Well Type: Flushmount ☐ Stick-Up ☒
Well Locked: Yes ☒ No ☐
Measuring Point Marked: Yes ☒ No ☐
Well Material: PVC ☒ SS ☐ Other:
Well Diameter: 1" ☐ 2" ☒ Other:
Comments:

Purging Information

Purging Method:	Bailer ☐	Peristaltic ☐	Well Wizard Dedicated Pump ☒		
Tubing/Bailer Material:	Teflon ☐	Stainless St. ☐	Polyethylene ☒	other	
Sampling Method:	Bailer ☐	Peristaltic ☐	Well Wizard Dedicated Pump ☒		
Average Pumping Rate:	(ml/min)	200			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	2	Did well go dry?	Yes ☐	No ☒

YSI 6920 or Horiba U-52 Water Quality Meter Used? Yes ☒ No ☐

Conversion Factors				
	1" ID	2" ID	4" ID	6" ID
gal/ft. of water	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH (S.U)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1250	14.27	9.35	7.54	-67	1.38	102.3	0.65	0.882
1255	14.30	9.75	7.43	-86	1.38	19.9	0.00	0.886
1300	14.04	9.77	7.43	-94	1.38	19.4	0.00	0.885
1305	15.56	8.54	7.42	-98	1.38	43.1	0.00	0.880
1310	15.92	8.52	7.41	-97	1.37	17.3	0.00	0.878
1315	16.26	8.63	7.41	-98	1.34	7.5	0.00	0.875

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	
EPA SW-846 Method 8260	VOC's BTEX	
EPA Method 6010	LEAD	
	MANGANESE	
EPA Method 9012A	TOTAL CYANIDE	
EPA Method 310.2	TOTAL ALKALINITY	
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	
EPA Method 376.1	SULFIDE	
SM_3500_FE_D	FERROUS IRON	
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE	
EPA Method 375.4	SULFATE	
EPA Method 353.2	NITRATE	
SM_4500_Cl_E	CHLORIDE	

2 - 1L glass	Yes ☒	No ☐
3 - 40 ml vials HCl	Yes ☒	No ☐
2 - 250 ml plastic HNO3	Yes ☒	No ☐
1 - 250 ml plastic NaOH	Yes ☒	No ☐
1 - 125 ml plastic	Yes ☒	No ☐
1 - 250 ml plastic H2SO4	Yes ☒	No ☐
1 - 250 ml plastic Zn Acitate and NaOH	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
2 - 40 ml vials BAK	Yes ☒	No ☐
1- 250 ml plastic	Yes ☒	No ☐
1- 250 ml platics H2SO4	Yes ☒	No ☐
1- 250ml plastic	Yes ☒	No ☐

Shipped: Drop-off Albany Service Center ☒

Sample ID: **MW-7-0417**
Sample Time: 1320

Duplicate? Yes ☐ No ☒
MS/DMS? Yes ☐ No ☒

Laboratory: Pace Analytical
Greensburg, Pennsylvania

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: CW
Job Number: 06-02882
Well Id. **MW-10**

Date: 4/26/17
Weather: Cloudy ~50°
Time In: 1145 Time Out: 1240

Well Information

		TOC	Other
Depth to Water:	(feet)	14.37	
Depth to Bottom:	(feet)	22.05	
Depth to Product:	(feet)	N/A	
Length of Water Column:	(feet)	7.68	
Volume of Water in Well:	(gal)	1.23	
Three Well Volumes:	(gal)	3.69	

Well Type: Flushmount ☐ Stick-Up ☒
Well Locked: Yes ☒ No ☐
Measuring Point Marked: Yes ☒ No ☐
Well Material: PVC ☒ SS ☐ Other: ____
Well Diameter: 1" ☐ 2" ☒ Other: ____
Comments:

Purging Information

Purging Method:	Bailer ☐	Peristaltic ☐	Well Wizard Dedicated Pump ☒		
Tubing/Bailer Material:	Teflon ☐	Stainless St. ☐	Polyethylene ☒	other ☐	
Sampling Method:	Bailer ☐	Peristaltic ☐	Well Wizard Dedicated Pump ☒		
Average Pumping Rate:	(ml/min)	200			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	2	Did well go dry?	Yes ☐	No ☒

Ysi 6920 or Horiba U-52 Water Quality Meter Used? Yes ☒ No ☐

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.7	1.5
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1150	15.61	7.31	7.33	-93	2.44	125	0.00	1.56
1155	15.98	7.72	7.28	-95	2.42	47.3	0.00	1.55
1200	16.25	7.93	7.26	-99	2.42	23.2	0.00	1.55
1205	16.30	8.12	7.24	-103	2.42	15.6	0.00	1.55
1210	16.25	8.32	7.26	-107	2.49	8.8	0.00	1.58
1215	16.41	8.09	7.28	-110	2.46	5.0	0.00	1.58

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's			
EPA SW-846 Method 8260	VOC's BTEX			
EPA Method 6010	LEAD			
	MANGANESE			
EPA Method 9012A	TOTAL CYANIDE			
EPA Method 310.2	TOTAL ALKALINITY			
EPA Method 351.2	TOTAL KJELDAHL NITROGEN			
EPA Method 376.1	SULFIDE			
SM_3500_FE_D	FERROUS IRON			
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE			
EPA Method 375.4	SULFATE			
EPA Method 353.2	NITRATE			
SM_4500_Cl_E	CHLORIDE			

2 - 1L glass	Yes ☒	No ☐	
3 - 40 ml vials HCl	Yes ☒	No ☐	
2 - 250 ml plastic HNO3	Yes ☒	No ☐	
1 - 250 ml plastic NaOH	Yes ☒	No ☐	
1 - 125 ml plastic	Yes ☒	No ☐	
1 - 250 ml plastic H2SO4	Yes ☒	No ☐	
1 - 250 ml plastic Zn Acitate and NaOH	Yes ☒	No ☐	
1 - 250 ml plastic	Yes ☒	No ☐	
2 - 40 ml vials BAK	Yes ☒	No ☐	
1- 250 ml plastic	Yes ☒	No ☐	
1- 250 ml platics H2SO4	Yes ☒	No ☐	
1- 250ml plastic	Yes ☒	No ☐	

Shipped: Drop-off Albany Service Center ☒

Sample ID: **MW-10-0417** Duplicate? Yes ☐ No ☒
Sample Time: 1220 MS/DMS? Yes ☐ No ☒

Laboratory: Pace Analytical
Greensburg, Pennsylvania

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel:	CMM	Date:	4/26/17
Job Number:	06-02882	Weather:	Cloudy ~50°
Well Id.	**MW-12**	Time In:	1059 Time Out: 1120

Well Information

		TOC	Other
Depth to Water:	(feet)	13.55	
Depth to Bottom:	(feet)	22.24	
Depth to Product:	(feet)	N/A	
Length of Water Column:	(feet)	8.69	
Volume of Water in Well:	(gal)	1.39	
Three Well Volumes:	(gal)	4.17	

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other:
Well Diameter: 1" [ ] 2" [X] Other:
Comments:

Purging Information

Purging Method:	Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]		
Tubing/Bailer Material:	Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	other [ ]	
Sampling Method:	Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]		
Average Pumping Rate:	(ml/min)	200			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	3	Did well go dry?	Yes [ ]	No [X]

YSI 6920 or Horiba U-52 Water Quality Meter Us Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1030	13.70	9.73	7.19	146	1.77	54	1.44	1.10
1035	13.78	9.52	7.05	155	1.34	98.5	1.21	0.855
1040	13.80	9.52	7.02	158	1.36	34.3	0.40	0.872
1045	13.79	9.69	7.00	161	1.38	14.7	0.00	0.883
1050	13.74	9.87	6.99	162	1.38	12.5	0.00	0.883
1055	13.67	9.98	6.99	163	1.39	10.4	0.00	0.890

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's		
EPA SW-846 Method 8260	VOC's BTEX		
EPA Method 6010	LEAD		
	MANGANESE		
EPA Method 9012A	TOTAL CYANIDE		
EPA Method 310.2	TOTAL ALKALINITY		
EPA Method 351.2	TOTAL KJELDAHL NITROGEN		
EPA Method 376.1	SULFIDE		
SM_3500_FE_D	FERROUS IRON		
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE		
EPA Method 375.4	SULFATE		
EPA Method 353.2	NITRATE		
SM_4500_Cl_E	CHLORIDE		

2 - 1L glass	Yes [X]	No [ ]	
3 - 40 ml vials HCl	Yes [X]	No [ ]	
2 - 250 ml plastic HNO3	Yes [X]	No [ ]	
1 - 250 ml plastic NaOH	Yes [X]	No [ ]	
1 - 125 ml plastic	Yes [X]	No [ ]	
1 - 250 ml plastic H2SO4	Yes [X]	No [ ]	
1 - 250 ml plastic Zn Acitate and NaOH	Yes [X]	No [ ]	
1 - 250 ml plastic	Yes [X]	No [ ]	
2 - 40 ml vials BAK	Yes [X]	No [ ]	
1- 250 ml plastic	Yes [X]	No [ ]	
1- 250 ml platics H2SO4	Yes [X]	No [ ]	
1- 250ml plastic	Yes [X]	No [ ]	

Shipped: Drop-off Albany Service Center [X]

Sample ID: **MW-12-0417** Duplicate? Yes [ ] No [X]
Sample Time: 1100 MS/DMS? Yes [ ] No [X]

Laboratory: Pace Analytical
Greensburg, Pennsylvania

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: [illegible]
Job Number: 06-02882
Well Id. **MW-13**

Date: 4/24/17
Weather: Rain 55
Time In: 08:45 Time Out: 10:20

Well Information

		TOC	Other
Depth to Water:	(feet)	13.27	
Depth to Bottom:	(feet)	22.75	
Depth to Product:	(feet)	ND	
Length of Water Column:	(feet)	9.48	
Volume of Water in Well:	(gal)	1.52	
Three Well Volumes:	(gal)	4.55	

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other:
Well Diameter: 1" [ ] 2" [X] Other:
Comments:

Purging Information

Purging Method:	Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]		
Tubing/Bailer Material:	Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	other [ ]	
Sampling Method:	Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]		
Average Pumping Rate: (ml/min)	140				
Duration of Pumping: (min)	35				
Total Volume Removed: (gal)	5				

Did well go dry? Yes [ ] No [X]

YSI 6920 or Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
09:55	13.43	10.63	6.44	38	0.424	43	6.91	0.271
04:00	13.43	10.23	6.07	-5	0.356	57.5	5.02	0.230
09:05	13.45	10.01	7.94	-21	0.336	42.4	3.47	0.223
09:10	13.45	9.76	7.23	-44	0.323	34.9	2.50	0.210
09:15	13.52	9.553	7.21	-52	0.317	27.2	2.27	0.206
09:20	13.52	9.39	7.66	-56	0.313	22.5	1.40	0.203
09:25	13.52	9.37	7.66	-56	0.311	20.1	1.38	0.203

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	
EPA SW-846 Method 8260	VOC's BTEX	
EPA Method 6010	LEAD	
	MANGANESE	
EPA Method 9012A	TOTAL CYANIDE	
EPA Method 310.2	TOTAL ALKALINITY	
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	
EPA Method 376.1	SULFIDE	
SM_3500_FE_D	FERROUS IRON	
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE	
EPA Method 375.4	SULFATE	
EPA Method 353.2	NITRATE	
SM_4500_Cl_E	CHLORIDE	

"Matrix Spike-0417" "Duplicate Matrix Spike-0417"

Sample ID: **MW-13-0417** Duplicate? Yes [ ] No [X]
Sample Time: 09:25 MS/DMS? Yes [X] No [ ]

6 - 1L glass	Yes [X]	No [ ]
9 - 40 ml vials HCl	Yes [X]	No [ ]
6 - 250 ml plastic HNO3	Yes [X]	No [ ] NITRIC
3 - 250 ml plastic NaOH	Yes [X]	No [ ] SODIUM
3 - 125 ml plastic	Yes [X]	No [ ]
3 - 250 ml plastic H2SO4	Yes [X]	No [ ] SULFURIC
3 - 250 ml plastic Zn Acitate and NaOH	Yes [X]	No [ ]
3 - 250 ml plastic SAS	Yes [X]	No [ ]
6 - 40 ml vials BAK	Yes [X]	No [ ]
3- 250 ml plastic	Yes [X]	No [ ]
3- 250 ml platics H2SO4	Yes [X]	No [ ]
3 - 250ml plastic	Yes [X]	No [ ]

Shipped: Drop-off Albany Service Center [X]

Laboratory: Pace Analytical
Greensburg, Pennsylvania

TIME MS 09:40
TIME DMS 09:55

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: K
Job Number: 06-02882
Well Id. **MW-14**

Date: 4/26/17
Weather: PC 52°
Time In: 11:20 Time Out: 12:20

Well Information

		TOC	Other
Depth to Water:	(feet)	13.71	
Depth to Bottom:	(feet)	23.55	
Depth to Product:	(feet)		
Length of Water Column:	(feet)	9.84	
Volume of Water in Well:	(gal)	1.57	
Three Well Volumes:	(gal)	4.72	

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other: ____
Well Diameter: 1" [ ] 2" [X] Other: ____
Comments:

Purging Information

Purging Method:	Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]	
Tubing/Bailer Material:	Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	other [ ]
Sampling Method:	Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]	
Average Pumping Rate: (ml/min)	250			
Duration of Pumping: (min)	30			
Total Volume Removed: (gal)	3			

Did well go dry? Yes [ ] No [X]

YSI 6920 or Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors

gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47

1 gallon=3.785L=3785mL=1337cu. feet

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
11:25	14.14	8.49	7.44	55	0.494	382	2.91	0.317
11:35	14.43	8.38	7.34	53	0.447	335	2.72	0.290
11:40	14.55	8.35	7.35	66	0.444	140	2.58	0.289
11:45	14.81	8.51	7.37	78	0.449	43.9	1.93	0.288
11:50	14.91	8.44	7.36	98	0.446	16.8	1.89	0.290
11:55	13.41	8.56	7.33	94	0.445	10.9	1.88	0.289
12:00	13.15	8.65	7.32	87	0.447	9.1	1.78	0.291

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	
EPA SW-846 Method 8260	VOC's BTEX	
EPA Method 6010	LEAD	
	MANGANESE	
EPA Method 9012A	TOTAL CYANIDE	
EPA Method 310.2	TOTAL ALKALINITY	
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	
EPA Method 376.1	SULFIDE	
SM_3500_FE_D	FERROUS IRON	
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE	
EPA Method 375.4	SULFATE	
EPA Method 353.2	NITRATE	
SM_4500_Cl_E	CHLORIDE	

2 - 1L glass	Yes [X]	No [ ]
3 - 40 ml vials HCl	Yes [X]	No [ ]
2 - 250 ml plastic HNO3	Yes [X]	No [ ]
1 - 250 ml plastic NaOH	Yes [X]	No [ ]
1 - 125 ml plastic	Yes [X]	No [ ]
1 - 250 ml plastic H2SO4	Yes [X]	No [ ]
1 - 250 ml plastic Zn Acitate and NaOH	Yes [X]	No [ ]
1 - 250 ml plastic	Yes [X]	No [ ]
2 - 40 ml vials BAK	Yes [X]	No [ ]
1- 250 ml plastic	Yes [X]	No [ ]
1- 250 ml platics H2SO4	Yes [X]	No [ ]
1- 250ml plastic	Yes [X]	No [ ]

Shipped: Drop-off Albany Service Center [X]

"Field Duplicate-0417"

Sample ID: **MW-14-0417** Duplicate? Yes [X] No [ ]
Sample Time: 12:00 MS/DMS? Yes [ ] No [X]

Laboratory: Pace Analytical
Greensburg, Pennsylvania

DUPLICATE TIME 12:15

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: KL
Job Number: 06-02882
Well Id. **MW-15**

Date: 9/26/17
Weather: PC 52°
Time In: 10:20 Time Out: 11:15

Well Information

		TOC	Other
Depth to Water:	(feet)	16.05	
Depth to Bottom:	(feet)	23.00	
Depth to Product:	(feet)	NP	
Length of Water Column:	(feet)	6.95	
Volume of Water in Well:	(gal)	1.11	
Three Well Volumes:	(gal)	3.33	

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other:
Well Diameter: 1" [ ] 2" [X] Other:
Comments:

Purging Information

Purging Method:		Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	other [ ]
Sampling Method:		Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]	
Average Pumping Rate:	(ml/min)	200			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	3.5			

Did well go dry? Yes [ ] No [X]

YSI 6920 or Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
10:30	16.47	13.24	7.20	-2	0.766	47.4	7.85	0.495
10:35	16.78	12.64	6.94	-17	0.653	13.1	0.53	0.417
10:40	16.92	12.64	6.93	-25	0.648	9.69	0.20	0.415
10:45	17.04	12.64	6.90	-39	0.656	6.68	0.00	0.420
10:50	17.33	12.64	6.90	-50	0.697	7.05	0.00	0.440
10:55	17.33	12.66	6.95	-63	0.720	7.89	0.00	0.463
11:00	17.64	12.66	6.85	-69	0.734	8.1	0.00	0.473

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's		
EPA SW-846 Method 8260	VOC's BTEX		
EPA Method 6010	LEAD		
	MANGANESE		
EPA Method 9012A	TOTAL CYANIDE		
EPA Method 310.2	TOTAL ALKALINITY		
EPA Method 351.2	TOTAL KJELDAHL NITROGEN		
EPA Method 376.1	SULFIDE		
SM_3500_FE_D	FERROUS IRON		
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE		
EPA Method 375.4	SULFATE		
EPA Method 353.2	NITRATE		
SM_4500_Cl_E	CHLORIDE		

2 - 1L glass	Yes [X]	No [ ]
3 - 40 ml vials HCl	Yes [X]	No [ ]
2 - 250 ml plastic HNO3	Yes [X]	No [ ]
1 - 250 ml plastic NaOH	Yes [X]	No [ ]
1 - 125 ml plastic	Yes [X]	No [ ]
1 - 250 ml plastic H2SO4	Yes [X]	No [ ]
1 - 250 ml plastic Zn Acitate and NaOH	Yes [X]	No [ ]
1 - 250 ml plastic	Yes [X]	No [ ]
2 - 40 ml vials BAK	Yes [X]	No [ ]
1- 250 ml plastic	Yes [X]	No [ ]
1- 250 ml platics H2SO4	Yes [X]	No [ ]
1- 250ml plastic	Yes [X]	No [ ]

Shipped: Drop-off Albany Service Center [X]

Sample ID: **MW-15-0417**
Sample Time: 11:00

Duplicate? Yes [ ] No [X]
MS/DMS? Yes [ ] No [X]

Laboratory: Pace Analytical
Greensburg, Pennsylvania

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: RC
Job Numbe 06-02882
Well Id. **MW-16**

Date: 4/26/17
Weather:
Time In: 12:20 Time Out: 13:15

Well Information

		TOC	Other
Depth to Water:	(feet)	9.82	
Depth to Bottom:	(feet)	19.45	
Depth to Product:	(feet)	NP	
Length of Water Column:	(feet)	10.13	
Volume of Water in Well:	(gal)	1.66	
Three Well Volumes:	(gal)	5.00	

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other:
Well Diameter: 1" [ ] 2" [X] Other:
Comments:

Purging Information

Purging Method:		Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	other [ ]
Sampling Method:		Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]	
Average Pumping Rate:	(ml/min)	200			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)				

Did well go dry? Yes [ ] No [X]

YSI 6920 or Horiba U-52 Water Quality Met Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
12:30	9.78	9.28	7.13	49	0.691	92.7	4.56	0.440
12:35	9.75	9.23	7.10	51	0.696	90.2	4.58	0.441
12:40	9.99	9.19	7.09	56	0.699	89.3	4.32	0.446
12:45	10.22	9.01	7.09	63	0.691	49.3	4.56	0.446
12:50	10.58	8.80	7.03	71	0.703	35.9	3.27	0.450
12:55	10.87	8.88	7.04	71	0.710	34.9	2.41	0.455
13:00	10.99	8.00	7.01	66	0.714	19.3	1.89	0.458

Sampling Information

EPA SW-846 Method 8270	SVOC PAH's	
EPA SW-846 Method 8260	VOC's BTEX	
EPA Method 6010	LEAD	
	MANGANESE	
EPA Method 9012A	TOTAL CYANIDE	
EPA Method 310.2	TOTAL ALKALINITY	
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	
EPA Method 376.1	SULFIDE	
SM_3500_FE_D	FERROUS IRON	
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE	
EPA Method 375.4	SULFATE	
EPA Method 353.2	NITRATE	
SM_4500_Cl_E	CHLORIDE	

2	2 - 1L glass	Yes [X]	No [ ]
3	3 - 40 ml vials HCl	Yes [X]	No [ ]
1	2 - 250 ml plastic HNO3	Yes [X]	No [ ]
1	1 - 250 ml plastic NaOH	Yes [X]	No [ ]
	1 - 125 ml plastic	Yes [X]	No [ ]
	1 - 250 ml plastic H2SO4	Yes [X]	No [ ]
1	1 - ~~250~~ 500 ml plastic Zn Acitate and NaOH	Yes [X]	No [ ]
1	1 - ~~250~~ 125 ml plastic	Yes [X]	No [ ]
2	2 - 40 ml vials BAK	Yes [X]	No [ ]
	1- 250 ml plastic	Yes [X]	No [ ]
1	1- 250 ml platics H2SO4	Yes [X]	No [ ]
	1- 250ml plastic	Yes [X]	No [ ]

Shipped: Drop-off Albany Service Center [X]

Sample ID: **MW-16-0417**
Sample Tim 13:00

Duplicate? Yes ___ No [X]
MS/DMS? Yes ___ No [X]

Laboratory: Pace Analytical
Greensburg, Pennsylvania

APPENDIX B

DATA USABILITY SUMMARY REPORT

Groundwater
& Environmental Services, Inc.

1750 Kraft Drive, Suite 2700 • Blacksburg, Virginia 24060 • (866) 756 0788

May 31, 2017

Mark Boorady
Groundwater & Environmental Services
1599 Route 34, Suite 1
Wall Township, NJ 07727

RE: Data Usability Summary Report for National Grid: Johnstown, NY Site Data Package
Pace Analytical Job No. 3021735

Groundwater & Environmental Services, Inc. (GES) reviewed one data package (Laboratory Project Number 3021735) from Pace Analytical Services, Inc., for the analysis of groundwater samples collected on April 26, 2017 from monitoring wells located at the National Grid: Johnstown, NY Site. Eight aqueous samples and a field duplicate were analyzed for dissolved gases, PAHs, Nitrogen, Metals, Alkalinity, Chloride, Ferrous Iron, Cyanide, Sulfide and Sulfate. Methodologies utilized were those of EPA RSK-175, PAES, EPA 351.2, EPA 6010C, SM4500CIE-97, SM4500NO3F-00, SM3500-FeD-00, SM4500S2F-00, and the USEPA SW846 methods 8260C/8270DSIM/9012B, with additional QC requirements of the NYSDEC ASP.

The data were reported as part of a complete full deliverable type B data validation. This usability report is generated from review of the following:

- Laboratory Narrative Discussion
- Custody Documentation
- Holding Times
- Surrogate and Internal Standard Recoveries
- Matrix Spike Recoveries/Duplicate (MS/MSD) Correlations
- Field Duplicate Correlations
- Laboratory Control Sample (LCS)
- Preparation/Calibration Blanks
- Calibration/Low Level Standard Responses
- Instrumental Tunes
- Instrument MDLs
- Sample Quantitation and Identification

The items listed above which show deficiencies are discussed within the text of this narrative.

All of the other items were determined to be acceptable for the DUSR level review.

Table 1. Laboratory – Field Cross Reference

Lab ID	Sample ID	Date Collected	Date Received
30217235001	MW-4-0417	04/26/17 09:40	04/27/17 10:30
30217235002	MW-7-0417	04/26/17 13:30	04/27/17 10:30
30217235003	MW-10-0417	04/26/17 12:20	04/27/17 10:30
30217235004	MW-12-0417	04/26/17 11:00	04/27/17 10:30
30217235005	MW-13-0417	04/26/17 09:25	04/27/17 10:30
30217235006	MW-14-0417	04/26/17 12:00	04/27/17 10:30
30217235007	MW-15-0417	04/26/17 11:00	04/27/17 10:30
30217235008	MW-16-0417	04/26/17 13:00	04/27/17 10:30
30217235009	MW-13-Matrix Spike-0417	04/26/17 09:40	04/27/17 10:30
30217235010	MW-13-Duplicate Matrix Spike	04/26/17 09:55	04/27/17 10:30
30217235011	Field Duplicate-0417	04/26/17 12:15	04/27/17 10:30

Table 2. Validation Qualifiers

Sample ID	Qualifier	Analyte	Reason for qualification
MW-13	R	Cyanide	MS/MSD recoveries <10%
	J	Ferrous Iron	RPD of laboratory prepped duplicate out of specification
All Samples	J	Acenaphthene, Pyrene	RPD out of specification for original/field duplicate
All Samples	J	Nitrogen as Nitrate/Nitrite	Sample was not preserved in the field. Laboratory preserved the sample.

In summary, sample results were usable as reported, with exceptions due to poor precision or MS/MSD recoveries.

The laboratory case narratives and sample identification summary forms are attached to this text, and should be reviewed in conjunction with this report. Also included with this narrative are sample results forms with the data qualifier applied in red.

Dissolved Gases by USEPA RSK-175/ NYSDEC ASP

Sample holding times were met and instrumental tune fragmentations were within acceptance ranges. Surrogate and internal standard recoveries were within required limits. Calibrations standards show acceptable responses within analytical protocol and validation action limits. The method blank reported a low positive detection of methane above the reporting limit. All of the samples reported methane at concentrations where the positive blank had no impact.

BTEX and TCL Volatiles by EPA 8260C/NYSDEC ASP

Sample holding times were met and instrumental tune fragmentations were within acceptance ranges. Surrogate and internal standard recoveries were within required limits. Calibrations standards show acceptable responses within analytical protocol and validation action limits. The blind field duplicate correlations of MW-14-2017 fall within guidance limits. The MS/MSD showed acceptable accuracy and precision. Surrogate recovery was within bounds, and LCS recoveries were used to determine method efficacy.

PAHs by EPA8270D/NYSDEC ASP

Holding times were met. Instrumental tune fragmentations were within acceptance ranges. Surrogate recoveries were within analytical and validation guidelines. Blanks show no contamination. Calibration standards, both initial and continuing, show acceptable responses within analytical method protocols and validation guidelines. The blind field duplicate correlations of MW-14-2017 fall within guidance limits.

Relative percent difference calculations in the MS/MSD using MW-13 showed precision outside of acceptable guidelines for acenaphthene and pyrene. Qualifiers are noted in Table 2.

Lead and Manganese by EPA 6010/NYDESC ASP

The matrix spikes of MW-13-2017 show acceptable accuracy and precision. The blind field duplicate correlations of MW-14-2017 fall within guidance limits. Instrument performance is compliant, and blanks show no contamination above the reporting limit. The ICP serial dilution evaluations were within specification for samples with detections of the target elements above the action limit.

Wet Chemistry Tests and Total Cyanide by 9012B/ NYSDEC ASP

Review was conducted for method compliance, holding times, transcription, calculations, standard and blank acceptability, accuracy and precision, etc., as applicable to each procedure. All were found acceptable for the validated samples with the following exceptions in the MS/MSDs:

Alkalinity: MW-13, recovery MS/MSD out of specification; no qualification is necessary as the initial concentration in the sample is >4X the spiking concentration.
Cyanide: MW-13, recovery MS/MSD extremely low <10%; data is rejected per EPA guidance.

Calibration standard responses were compliant. Blanks show no detections above the reporting limits.

The matrix spikes and/or laboratory duplicates of total cyanide show acceptable recoveries and/or correlations.

Ferrous Iron by S<3500-FeD-00/ NYSDEC ASP

Review was conducted for method compliance, holding times, transcription, calculations, standard and blank acceptability, and accuracy and precision. All were found acceptable for the validated samples with the exception of holding time. All the samples were analyzed outside of the laboratory set holding time. However, there is no regulatory holding time for Ferrous Iron; the EPA recommends that the analysis be performed as soon as possible, preferably within 72 hours of collection. As the data was analyzed outside of laboratory hold time, but within the EPA suggested 72 hours, the data is qualified as estimated, but usable.

Calibration standard responses were compliant. Blanks show no detections above the reporting limits.

Total Kjeldahl Nitrogen, Nitrogen as Nitrate/Nitrite by EPA 351.2 & 353.2/NYDESC ASP

Review was conducted for method compliance, holding times, transcription, calculations, standard and blank acceptability, accuracy and precision, etc., as applicable to each procedure. All were found acceptable for the validated samples. Calibration standard responses were compliant. Blanks show no detections above the reporting limits.

Data Precison

Table 3
Field Precision
JOHNSTOWN NY SITE
April 2017

Field Identification	Analyte	Sample Result (µg/L)	Duplicate Result (µg/L)	RPD (%)	Qualified
MW-14/FIELD DUP	Manganese	26.2	26.4	1	A
	Acenaphthylene	0.25	0.32	24.6	A
	Anthracene	0.10	0.12	22.2	A
	Benzo(a)anthracene	0.13	ND	NC	A*
	Benzo(a)pyrene	0.12	ND	NC	A*
	Benzo(b)fluoranthene	0.21	0.11	NC	A*
	Benzo(g,h,i)perylene	0.11	ND	NC	A*
	Benzo(k)fluoranthene	0.18	ND	NC	A*
	Chrysene	0.13	ND	NC	A*
	Pyrene	0.28	0.14	66.7	A
	Fluoranthene	0.17	ND	NC	A*
	Alkalinity	380	407	6.9	A
	Iron, Ferrous	0.22	0.25	12.8	A
	Chloride	3.50	3.40	2.9	A
	Nitrogen	0.29	0.25	14.8	A
	Cyanide	0.079	0.082	3.7	A
	Sulfate	12.50	14.50	14.8	A

Data Package Completeness

Complete NYSDEC Category B deliverables were included in the laboratory data package, all information required for validation of the data is present.

Please do not hesitate to contact me if you have comments or questions regarding this report.

Bonnie Janowiak, Ph.D.
Project Chemist
708 N Main St, Suite 201
Blacksburg, VA 24060

VALIDATION DATA QUALIFIER DEFINITIONS

U The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.

J The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.

J- The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased low.

J+ The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased high.

UJ The analyte was analyzed for, but was not detected. The associated reported quantitation limit is approximate and may be inaccurate or imprecise.

NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control limits. The analyte may or may not be present.

Sample Summaries

and

Laboratory Case Narratives

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

May 11, 2017

Mr. Mark Boorady
Groundwater & Environmental Services, Inc.
5 Technology Place, Suite 4
East Syracuse, NY 13057

RE: Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Dear Mr. Boorady:
Enclosed are the analytical results for sample(s) received by the laboratory on April 27, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

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

Sincerely,

Rachel Christner
rachel.christner@pacelabs.com
724-850-5611
Project Manager

Enclosures

cc: GES Reports - Syracuse, Groundwater & Environmental Services, Inc.
Ms. Cheryl Golden-Walts, Groundwater & Environmental Services, Inc.
Chandler Swartzendruber, Groundwater & Environmental Services, Inc.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30217235001	**MW-4-0417**	Water	04/26/17 09:40	04/27/17 10:30
30217235002	**MW-7-0417**	Water	04/26/17 13:30	04/27/17 10:30
30217235003	**MW-10-0417**	Water	04/26/17 12:20	04/27/17 10:30
30217235004	**MW-12-0417**	Water	04/26/17 11:00	04/27/17 10:30
30217235005	**MW-13-0417**	Water	04/26/17 09:25	04/27/17 10:30
30217235006	**MW-14-0417**	Water	04/26/17 12:00	04/27/17 10:30
30217235007	**MW-15-0417**	Water	04/26/17 11:00	04/27/17 10:30
30217235008	**MW-16-0417**	Water	04/26/17 13:00	04/27/17 10:30
30217235009	**MW-13-Matrix Spike-0417**	Water	04/26/17 09:40	04/27/17 10:30
30217235010	**MW-13-Duplicate Matrix Spike**	Water	04/26/17 09:55	04/27/17 10:30
30217235011	**Field Blank-0417**	Water	04/26/17 12:15	04/27/17 10:30

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30217235001	**MW-4-0417**	EPA 6010C	CTS	2	PASI-PA
		EPA 8270D by SIM	TMK	19	PASI-PA
		EPA 8260C	MAK	10	PASI-PA
		SM2320B-97	JDM	1	PASI-PA
		SM3500-FeD-00	PAS	1	PASI-PA
		SM4500S2F-00	PAS	1	PASI-PA
		EPA 351.2	EHW	1	PASI-PA
		SM4500ClE-97	EHW	1	PASI-PA
		SM4500NO3F-00	EHW	1	PASI-PA
		EPA 9012B	LEP	1	PASI-PA
		ASTM D516-11	LEP	1	PASI-PA
30217235002	**MW-7-0417**	EPA 6010C	CTS	2	PASI-PA
		EPA 8270D by SIM	TMK	19	PASI-PA
		EPA 8260C	MAK	10	PASI-PA
		SM2320B-97	JDM	1	PASI-PA
		SM3500-FeD-00	PAS	1	PASI-PA
		SM4500S2F-00	PAS	1	PASI-PA
		EPA 351.2	EHW	1	PASI-PA
		SM4500ClE-97	EHW	1	PASI-PA
		SM4500NO3F-00	EHW	1	PASI-PA
		EPA 9012B	LEP	1	PASI-PA
		ASTM D516-11	LEP	1	PASI-PA
30217235003	**MW-10-0417**	EPA 6010C	CTS	2	PASI-PA
		EPA 8270D by SIM	TMK	19	PASI-PA
		EPA 8260C	MAK	10	PASI-PA
		SM2320B-97	JDM	1	PASI-PA
		SM3500-FeD-00	PAS	1	PASI-PA
		SM4500S2F-00	PAS	1	PASI-PA
		EPA 351.2	EHW	1	PASI-PA
		SM4500ClE-97	EHW	1	PASI-PA
		SM4500NO3F-00	EHW	1	PASI-PA
		EPA 9012B	LEP	1	PASI-PA
		ASTM D516-11	LEP	1	PASI-PA
30217235004	**MW-12-0417**	EPA 6010C	CTS	2	PASI-PA
		EPA 8270D by SIM	TMK	19	PASI-PA
		EPA 8260C	MAK	10	PASI-PA
		SM2320B-97	JDM	1	PASI-PA

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM3500-FeD-00	PAS	1	PASI-PA
		SM4500S2F-00	PAS	1	PASI-PA
		EPA 351.2	EHW	1	PASI-PA
		SM4500ClE-97	EHW	1	PASI-PA
		SM4500NO3F-00	EHW	1	PASI-PA
		EPA 9012B	LEP	1	PASI-PA
		ASTM D516-11	LEP	1	PASI-PA
30217235005	**MW-13-0417**	EPA 6010C	CTS	2	PASI-PA
		EPA 8270D by SIM	TMK	19	PASI-PA
		EPA 8260C	MAK	10	PASI-PA
		SM2320B-97	JDM	1	PASI-PA
		SM3500-FeD-00	PAS	1	PASI-PA
		SM4500S2F-00	PAS	1	PASI-PA
		EPA 351.2	EHW	1	PASI-PA
		SM4500ClE-97	EHW	1	PASI-PA
		SM4500NO3F-00	EHW	1	PASI-PA
		EPA 9012B	LEP	1	PASI-PA
		ASTM D516-11	LEP	1	PASI-PA
30217235006	**MW-14-0417**	EPA 6010C	CTS	2	PASI-PA
		EPA 8270D by SIM	TMK	19	PASI-PA
		EPA 8260C	MAK	10	PASI-PA
		SM2320B-97	JDM	1	PASI-PA
		SM3500-FeD-00	PAS	1	PASI-PA
		SM4500S2F-00	PAS	1	PASI-PA
		EPA 351.2	EHW	1	PASI-PA
		SM4500ClE-97	EHW	1	PASI-PA
		SM4500NO3F-00	EHW	1	PASI-PA
		EPA 9012B	LEP	1	PASI-PA
		ASTM D516-11	LEP	1	PASI-PA
30217235007	**MW-15-0417**	EPA 6010C	CTS	2	PASI-PA
		EPA 8270D by SIM	TMK	19	PASI-PA
		EPA 8260C	MAK	10	PASI-PA
		SM2320B-97	JDM	1	PASI-PA
		SM3500-FeD-00	PAS	1	PASI-PA
		SM4500S2F-00	PAS	1	PASI-PA
		EPA 351.2	EHW	1	PASI-PA
		SM4500ClE-97	EHW	1	PASI-PA

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM4500NO3F-00	EHW	1	PASI-PA
		EPA 9012B	LEP	1	PASI-PA
		ASTM D516-11	LEP	1	PASI-PA
30217235008	**MW-16-0417**	EPA 6010C	CTS	2	PASI-PA
		EPA 8270D by SIM	TMK	19	PASI-PA
		EPA 8260C	MAK	10	PASI-PA
		SM2320B-97	JDM	1	PASI-PA
		SM3500-FeD-00	PAS	1	PASI-PA
		SM4500S2F-00	PAS	1	PASI-PA
		EPA 351.2	EHW	1	PASI-PA
		SM4500ClE-97	EHW	1	PASI-PA
		SM4500NO3F-00	EHW	1	PASI-PA
		EPA 9012B	LEP	1	PASI-PA
		ASTM D516-11	LEP	1	PASI-PA
30217235009	**MW-13-Matrix Spike-0417**	EPA 6010C	CTS	2	PASI-PA
		EPA 8270D by SIM	TMK	19	PASI-PA
		EPA 8260C	MAK	10	PASI-PA
		SM2320B-97	JDM	1	PASI-PA
		SM3500-FeD-00	PAS	1	PASI-PA
		SM4500S2F-00	PAS	1	PASI-PA
		EPA 351.2	EHW	1	PASI-PA
		SM4500ClE-97	EHW	1	PASI-PA
		SM4500NO3F-00	EHW	1	PASI-PA
		EPA 9012B	LEP	1	PASI-PA
		ASTM D516-11	LEP	1	PASI-PA
30217235010	**MW-13-Duplicate Matrix Spike**	EPA 6010C	CTS	2	PASI-PA
		EPA 8270D by SIM	TMK	19	PASI-PA
		EPA 8260C	MAK	10	PASI-PA
		SM2320B-97	JDM	1	PASI-PA
		SM3500-FeD-00	PAS	1	PASI-PA
		SM4500S2F-00	PAS	1	PASI-PA
		EPA 351.2	EHW	1	PASI-PA
		SM4500ClE-97	EHW	1	PASI-PA
		SM4500NO3F-00	EHW	1	PASI-PA
		EPA 9012B	LEP	1	PASI-PA
		ASTM D516-11	LEP	1	PASI-PA
30217235011	**Field Blank-0417**	EPA 6010C	CTS	2	PASI-PA

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8270D by SIM	TMK	19	PASI-PA
		EPA 8260C	MAK	10	PASI-PA
		SM2320B-97	JDM	1	PASI-PA
		SM3500-FeD-00	PAS	1	PASI-PA
		SM4500S2F-00	PAS	1	PASI-PA
		EPA 351.2	EHW	1	PASI-PA
		SM4500ClE-97	EHW	1	PASI-PA
		SM4500NO3F-00	EHW	1	PASI-PA
		EPA 9012B	LEP	1	PASI-PA
		ASTM D516-11	LEP	1	PASI-PA

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Date: May 11, 2017

The samples were subcontracted to Pace Analytical Energy Services Inc., 220 William Pitt Way, Pittsburgh, PA 15238 for Methane, Ethane, Ethene, CO2, analysis. The results of this analysis are reported on the Microseeps, Inc. data tables attached

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Method: **EPA 6010C**
Description: 6010C MET ICP
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: May 11, 2017

General Information:
11 samples were analyzed for EPA 6010C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Method: **EPA 8270D by SIM**
Description: 8270D MSSV PAH by SIM
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: May 11, 2017

General Information:
11 samples were analyzed for EPA 8270D by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 257041

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30217235005

R1: RPD value was outside control limits.

- MSD (Lab ID: 1266262)
  - Acenaphthene
  - Pyrene

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Method: **EPA 8260C**
Description: 8260C MSV
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: May 11, 2017

General Information:
11 samples were analyzed for EPA 8260C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Method: **SM2320B-97**
Description: 2320B Alkalinity
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: May 11, 2017

General Information:
11 samples were analyzed for SM2320B-97. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 257303

- MS (Lab ID: 1267609)
  - Alkalinity,Total (CaCO3 pH4.5)
- MSD (Lab ID: 1267610)
  - Alkalinity,Total (CaCO3 pH4.5)
- MW-13-0417 (Lab ID: 30217235005)
  - Alkalinity,Total (CaCO3 pH4.5)

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Method: **SM3500-FeD-00**
Description: Iron, Ferrous
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: May 11, 2017

General Information:
11 samples were analyzed for SM3500-FeD-00. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.
- Field Blank-0417 (Lab ID: 30217235011)
- MW-10-0417 (Lab ID: 30217235003)
- MW-12-0417 (Lab ID: 30217235004)
- MW-14-0417 (Lab ID: 30217235006)
- MW-15-0417 (Lab ID: 30217235007)
- MW-16-0417 (Lab ID: 30217235008)
- MW-7-0417 (Lab ID: 30217235002)

H3: Sample was received or analysis requested beyond the recognized method holding time.
- MW-13-0417 (Lab ID: 30217235005)
- MW-13-Duplicate Matrix Spike (Lab ID: 30217235010)
- MW-13-Matrix Spike-0417 (Lab ID: 30217235009)
- MW-4-0417 (Lab ID: 30217235001)

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- Field Blank-0417 (Lab ID: 30217235011)
- MW-10-0417 (Lab ID: 30217235003)
- MW-12-0417 (Lab ID: 30217235004)
- MW-13-0417 (Lab ID: 30217235005)
- MW-13-Duplicate Matrix Spike (Lab ID: 30217235010)
- MW-13-Matrix Spike-0417 (Lab ID: 30217235009)
- MW-14-0417 (Lab ID: 30217235006)
- MW-15-0417 (Lab ID: 30217235007)
- MW-16-0417 (Lab ID: 30217235008)
- MW-4-0417 (Lab ID: 30217235001)
- MW-7-0417 (Lab ID: 30217235002)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Method: **SM3500-FeD-00**
Description: Iron, Ferrous
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: May 11, 2017

QC Batch: 257162

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30217235005

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1266664)
  - Iron, Ferrous
- MS (Lab ID: 1266665)
  - Iron, Ferrous

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Method: **SM4500S2F-00**
Description: 4500S2F Sulfide, Iodometric
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: May 11, 2017

General Information:
11 samples were analyzed for SM4500S2F-00. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Method: **EPA 351.2**
Description: 351.2 Total Kjeldahl Nitrogen
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: May 11, 2017

General Information:
11 samples were analyzed for EPA 351.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 351.2 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Method: **SM4500ClE-97**
Description: 4500 Chloride
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: May 11, 2017

General Information:
11 samples were analyzed for SM4500ClE-97. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Method: **SM4500NO3F-00**
Description: SM4500NO3-F, NO3-NO2
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: May 11, 2017

General Information:
11 samples were analyzed for SM4500NO3F-00. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Method: **EPA 9012B**
Description: 9012B Cyanide, Total
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: May 11, 2017

General Information:
11 samples were analyzed for EPA 9012B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 9012B with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Method: **ASTM D516-11**
Description: ASTM D516 Sulfate Water
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: May 11, 2017

General Information:
11 samples were analyzed for ASTM D516-11. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-4-0417 **Lab ID: 30217235001** Collected: 04/26/17 09:40 Received: 04/27/17 10:30 Matrix: Water

Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	04/28/17 11:00	05/01/17 09:13	7439-92-1	
Manganese	ND	ug/L	5.0	0.71	1	04/28/17 11:00	05/01/17 09:13	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	ND	ug/L	0.096	0.026	1	05/02/17 14:39	05/03/17 17:24	83-32-9	
Acenaphthylene	ND	ug/L	0.096	0.032	1	05/02/17 14:39	05/03/17 17:24	208-96-8	
Anthracene	ND	ug/L	0.096	0.044	1	05/02/17 14:39	05/03/17 17:24	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.096	0.046	1	05/02/17 14:39	05/03/17 17:24	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.096	0.033	1	05/02/17 14:39	05/03/17 17:24	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.096	0.034	1	05/02/17 14:39	05/03/17 17:24	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.096	0.037	1	05/02/17 14:39	05/03/17 17:24	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.096	0.035	1	05/02/17 14:39	05/03/17 17:24	207-08-9	
Chrysene	ND	ug/L	0.096	0.034	1	05/02/17 14:39	05/03/17 17:24	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.096	0.030	1	05/02/17 14:39	05/03/17 17:24	53-70-3	
Fluoranthene	ND	ug/L	0.096	0.059	1	05/02/17 14:39	05/03/17 17:24	206-44-0	
Fluorene	ND	ug/L	0.096	0.025	1	05/02/17 14:39	05/03/17 17:24	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.096	0.033	1	05/02/17 14:39	05/03/17 17:24	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.096	0.055	1	05/02/17 14:39	05/03/17 17:24	91-57-6	
Naphthalene	ND	ug/L	0.096	0.059	1	05/02/17 14:39	05/03/17 17:24	91-20-3	
Phenanthrene	ND	ug/L	0.096	0.036	1	05/02/17 14:39	05/03/17 17:24	85-01-8	
Pyrene	ND	ug/L	0.096	0.054	1	05/02/17 14:39	05/03/17 17:24	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	42	%	19-123		1	05/02/17 14:39	05/03/17 17:24	321-60-8	
Terphenyl-d14 (S)	70	%	58-130		1	05/02/17 14:39	05/03/17 17:24	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	ND	ug/L	1.0	0.18	1		05/01/17 13:43	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.20	1		05/01/17 13:43	100-41-4	
Toluene	ND	ug/L	1.0	0.11	1		05/01/17 13:43	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.77	1		05/01/17 13:43	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.49	1		05/01/17 13:43	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.28	1		05/01/17 13:43	95-47-6	
Surrogates									
Toluene-d8 (S)	90	%	84-115		1		05/01/17 13:43	2037-26-5	
4-Bromofluorobenzene (S)	104	%	81-119		1		05/01/17 13:43	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-126		1		05/01/17 13:43	17060-07-0	
Dibromofluoromethane (S)	103	%	70-130		1		05/01/17 13:43	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity,Total (CaCO3 pH4.5)	**392**	mg/L	10.0	1.7	1		05/03/17 17:58		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	ND	mg/L	0.10	0.012	1		04/27/17 15:51		H3,H6

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-4-0417 **Lab ID: 30217235001** Collected: 04/26/17 09:40 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		04/28/17 16:24	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	1.0	0.32	1	05/02/17 08:12	05/02/17 13:55	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**377**	mg/L	30.0	3.5	10		04/28/17 11:54	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**2.2**	mg/L	0.10	0.011	1		04/28/17 10:25		
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	ND	mg/L	0.010	0.0020	1	05/03/17 14:33	05/03/17 19:15	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**23.0**	mg/L	10.0	1.0	1		04/28/17 15:24	14808-79-8	

Sample: MW-7-0417 **Lab ID: 30217235002** Collected: 04/26/17 13:30 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	04/28/17 11:00	05/01/17 09:15	7439-92-1	
Manganese	**478**	ug/L	5.0	0.71	1	04/28/17 11:00	05/01/17 09:15	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	ND	ug/L	0.097	0.026	1	05/02/17 14:39	05/03/17 17:41	83-32-9	
Acenaphthylene	ND	ug/L	0.097	0.032	1	05/02/17 14:39	05/03/17 17:41	208-96-8	
Anthracene	ND	ug/L	0.097	0.044	1	05/02/17 14:39	05/03/17 17:41	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.097	0.047	1	05/02/17 14:39	05/03/17 17:41	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 17:41	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 17:41	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.097	0.037	1	05/02/17 14:39	05/03/17 17:41	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 17:41	207-08-9	
Chrysene	ND	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 17:41	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.097	0.030	1	05/02/17 14:39	05/03/17 17:41	53-70-3	
Fluoranthene	ND	ug/L	0.097	0.059	1	05/02/17 14:39	05/03/17 17:41	206-44-0	
Fluorene	ND	ug/L	0.097	0.025	1	05/02/17 14:39	05/03/17 17:41	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 17:41	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.097	0.055	1	05/02/17 14:39	05/03/17 17:41	91-57-6	
Naphthalene	ND	ug/L	0.097	0.059	1	05/02/17 14:39	05/03/17 17:41	91-20-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-7-0417 **Lab ID: 30217235002** Collected: 04/26/17 13:30 Received: 04/27/17 10:30 Matrix: Water

Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Phenanthrene	ND	ug/L	0.097	0.036	1	05/02/17 14:39	05/03/17 17:41	85-01-8	
Pyrene	ND	ug/L	0.097	0.054	1	05/02/17 14:39	05/03/17 17:41	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	55	%	19-123		1	05/02/17 14:39	05/03/17 17:41	321-60-8	
Terphenyl-d14 (S)	80	%	58-130		1	05/02/17 14:39	05/03/17 17:41	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	ND	ug/L	1.0	0.18	1		05/01/17 14:09	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.20	1		05/01/17 14:09	100-41-4	
Toluene	ND	ug/L	1.0	0.11	1		05/01/17 14:09	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.77	1		05/01/17 14:09	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.49	1		05/01/17 14:09	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.28	1		05/01/17 14:09	95-47-6	
Surrogates									
Toluene-d8 (S)	89	%	84-115		1		05/01/17 14:09	2037-26-5	
4-Bromofluorobenzene (S)	102	%	81-119		1		05/01/17 14:09	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	77-126		1		05/01/17 14:09	17060-07-0	
Dibromofluoromethane (S)	105	%	70-130		1		05/01/17 14:09	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity,Total (CaCO3 pH4.5)	**412**	mg/L	10.0	1.7	1		05/03/17 18:11		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**3.7**	mg/L	1.0	0.12	10		04/27/17 16:18		H1,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		04/28/17 16:25	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**1.8**	mg/L	1.0	0.32	1	05/02/17 08:12	05/02/17 13:56	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**68.9**	mg/L	3.0	0.35	1		04/28/17 11:55	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.011	1		04/28/17 10:26		
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	**0.18**	mg/L	0.010	0.0020	1	05/03/17 14:33	05/03/17 19:16	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**396**	mg/L	100	10.3	10		04/28/17 15:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-10-0417 **Lab ID: 30217235003** Collected: 04/26/17 12:20 Received: 04/27/17 10:30 Matrix: Water

Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	10.0	8.1	2	04/28/17 11:00	05/01/17 09:36	7439-92-1	
Manganese	**1020**	ug/L	5.0	0.71	1	04/28/17 11:00	05/01/17 09:22	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**0.72**	ug/L	0.097	0.026	1	05/02/17 14:39	05/03/17 17:59	83-32-9	
Acenaphthylene	**0.16**	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 17:59	208-96-8	
Anthracene	ND	ug/L	0.097	0.044	1	05/02/17 14:39	05/03/17 17:59	120-12-7	
Benzo(a)anthracene	**0.11**	ug/L	0.097	0.047	1	05/02/17 14:39	05/03/17 17:59	56-55-3	
Benzo(a)pyrene	**0.10**	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 17:59	50-32-8	
Benzo(b)fluoranthene	**0.17**	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 17:59	205-99-2	ip
Benzo(g,h,i)perylene	ND	ug/L	0.097	0.037	1	05/02/17 14:39	05/03/17 17:59	191-24-2	
Benzo(k)fluoranthene	**0.15**	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 17:59	207-08-9	ip
Chrysene	**0.099**	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 17:59	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.097	0.030	1	05/02/17 14:39	05/03/17 17:59	53-70-3	
Fluoranthene	**0.16**	ug/L	0.097	0.060	1	05/02/17 14:39	05/03/17 17:59	206-44-0	
Fluorene	ND	ug/L	0.097	0.025	1	05/02/17 14:39	05/03/17 17:59	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 17:59	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.097	0.056	1	05/02/17 14:39	05/03/17 17:59	91-57-6	
Naphthalene	ND	ug/L	0.097	0.059	1	05/02/17 14:39	05/03/17 17:59	91-20-3	
Phenanthrene	ND	ug/L	0.097	0.036	1	05/02/17 14:39	05/03/17 17:59	85-01-8	
Pyrene	**0.20**	ug/L	0.097	0.055	1	05/02/17 14:39	05/03/17 17:59	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	57	%	19-123		1	05/02/17 14:39	05/03/17 17:59	321-60-8	
Terphenyl-d14 (S)	86	%	58-130		1	05/02/17 14:39	05/03/17 17:59	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	**1.9**	ug/L	1.0	0.18	1		05/01/17 14:34	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.20	1		05/01/17 14:34	100-41-4	
Toluene	ND	ug/L	1.0	0.11	1		05/01/17 14:34	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.77	1		05/01/17 14:34	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.49	1		05/01/17 14:34	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.28	1		05/01/17 14:34	95-47-6	
Surrogates									
Toluene-d8 (S)	89	%	84-115		1		05/01/17 14:34	2037-26-5	
4-Bromofluorobenzene (S)	99	%	81-119		1		05/01/17 14:34	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	77-126		1		05/01/17 14:34	17060-07-0	
Dibromofluoromethane (S)	104	%	70-130		1		05/01/17 14:34	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity,Total (CaCO3 pH4.5)	**628**	mg/L	10.0	1.7	1		05/03/17 18:17		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**4.2**	mg/L	1.0	0.12	10		04/27/17 16:19		H1,H6

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-10-0417 **Lab ID: 30217235003** Collected: 04/26/17 12:20 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		04/28/17 16:26	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**5.1**	mg/L	1.0	0.32	1	05/02/17 08:12	05/02/17 13:57	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**390**	mg/L	30.0	3.5	10		04/28/17 11:56	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.011	1		04/28/17 10:27		
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	**0.13**	mg/L	0.010	0.0020	1	05/03/17 14:33	05/03/17 19:17	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**148**	mg/L	100	10.3	10		04/28/17 15:28	14808-79-8	

Sample: MW-12-0417 **Lab ID: 30217235004** Collected: 04/26/17 11:00 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	04/28/17 11:00	05/01/17 09:24	7439-92-1	
Manganese	**20.1**	ug/L	5.0	0.71	1	04/28/17 11:00	05/01/17 09:24	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	ND	ug/L	0.097	0.026	1	05/02/17 14:39	05/03/17 18:16	83-32-9	
Acenaphthylene	ND	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 18:16	208-96-8	
Anthracene	ND	ug/L	0.097	0.044	1	05/02/17 14:39	05/03/17 18:16	120-12-7	
Benzo(a)anthracene	**0.11**	ug/L	0.097	0.047	1	05/02/17 14:39	05/03/17 18:16	56-55-3	
Benzo(a)pyrene	**0.11**	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 18:16	50-32-8	
Benzo(b)fluoranthene	**0.13**	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 18:16	205-99-2	ip
Benzo(g,h,i)perylene	ND	ug/L	0.097	0.037	1	05/02/17 14:39	05/03/17 18:16	191-24-2	
Benzo(k)fluoranthene	**0.11**	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 18:16	207-08-9	ip
Chrysene	ND	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 18:16	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.097	0.030	1	05/02/17 14:39	05/03/17 18:16	53-70-3	
Fluoranthene	**0.11**	ug/L	0.097	0.060	1	05/02/17 14:39	05/03/17 18:16	206-44-0	
Fluorene	ND	ug/L	0.097	0.025	1	05/02/17 14:39	05/03/17 18:16	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 18:16	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.097	0.056	1	05/02/17 14:39	05/03/17 18:16	91-57-6	
Naphthalene	ND	ug/L	0.097	0.059	1	05/02/17 14:39	05/03/17 18:16	91-20-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-12-0417 **Lab ID: 30217235004** Collected: 04/26/17 11:00 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Phenanthrene	ND	ug/L	0.097	0.036	1	05/02/17 14:39	05/03/17 18:16	85-01-8	
Pyrene	**0.17**	ug/L	0.097	0.055	1	05/02/17 14:39	05/03/17 18:16	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	43	%	19-123		1	05/02/17 14:39	05/03/17 18:16	321-60-8	
Terphenyl-d14 (S)	78	%	58-130		1	05/02/17 14:39	05/03/17 18:16	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	ND	ug/L	1.0	0.18	1		05/01/17 15:00	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.20	1		05/01/17 15:00	100-41-4	
Toluene	ND	ug/L	1.0	0.11	1		05/01/17 15:00	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.77	1		05/01/17 15:00	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.49	1		05/01/17 15:00	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.28	1		05/01/17 15:00	95-47-6	
Surrogates									
Toluene-d8 (S)	87	%	84-115		1		05/01/17 15:00	2037-26-5	
4-Bromofluorobenzene (S)	97	%	81-119		1		05/01/17 15:00	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	77-126		1		05/01/17 15:00	17060-07-0	
Dibromofluoromethane (S)	101	%	70-130		1		05/01/17 15:00	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity,Total (CaCO3 pH4.5)	**466**	mg/L	10.0	1.7	1		05/03/17 18:28		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	ND	mg/L	0.10	0.012	1		04/27/17 15:55		H1,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		04/28/17 16:27	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	1.0	0.32	1	05/02/17 08:12	05/02/17 13:58	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**152**	mg/L	15.0	1.8	5		04/28/17 11:56	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**5.1**	mg/L	0.10	0.011	1		04/28/17 10:29		
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	ND	mg/L	0.010	0.0020	1	05/03/17 14:33	05/03/17 19:18	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**115**	mg/L	50.0	5.2	5		04/28/17 15:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-13-0417 **Lab ID: 30217235005** Collected: 04/26/17 09:25 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	04/28/17 11:00	05/01/17 09:00	7439-92-1	
Manganese	**41.7**	ug/L	5.0	0.71	1	04/28/17 11:00	05/01/17 09:00	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**0.34**	ug/L	0.097	0.026	1	05/02/17 14:39	05/03/17 18:34	83-32-9	R1
Acenaphthylene	**1.2**	ug/L	0.097	0.032	1	05/02/17 14:39	05/03/17 18:34	208-96-8	
Anthracene	**0.55**	ug/L	0.097	0.044	1	05/02/17 14:39	05/03/17 18:34	120-12-7	
Benzo(a)anthracene	**0.93**	ug/L	0.097	0.047	1	05/02/17 14:39	05/03/17 18:34	56-55-3	
Benzo(a)pyrene	**1.0**	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 18:34	50-32-8	
Benzo(b)fluoranthene	**1.2**	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 18:34	205-99-2	
Benzo(g,h,i)perylene	**0.55**	ug/L	0.097	0.037	1	05/02/17 14:39	05/03/17 18:34	191-24-2	
Benzo(k)fluoranthene	**1.1**	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 18:34	207-08-9	ML
Chrysene	**0.81**	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 18:34	218-01-9	
Dibenz(a,h)anthracene	**0.13**	ug/L	0.097	0.030	1	05/02/17 14:39	05/03/17 18:34	53-70-3	
Fluoranthene	**1.9**	ug/L	0.097	0.059	1	05/02/17 14:39	05/03/17 18:34	206-44-0	ML
Fluorene	**0.46**	ug/L	0.097	0.025	1	05/02/17 14:39	05/03/17 18:34	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.42**	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 18:34	193-39-5	
2-Methylnaphthalene	**0.46**	ug/L	0.097	0.055	1	05/02/17 14:39	05/03/17 18:34	91-57-6	
Naphthalene	**0.96**	ug/L	0.097	0.059	1	05/02/17 14:39	05/03/17 18:34	91-20-3	
Phenanthrene	**1.5**	ug/L	0.097	0.036	1	05/02/17 14:39	05/03/17 18:34	85-01-8	ML
Pyrene	**1.7**	ug/L	0.097	0.054	1	05/02/17 14:39	05/03/17 18:34	129-00-0	ML,R1
Surrogates									
2-Fluorobiphenyl (S)	43	%	19-123		1	05/02/17 14:39	05/03/17 18:34	321-60-8	
Terphenyl-d14 (S)	69	%	58-130		1	05/02/17 14:39	05/03/17 18:34	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	**15.5**	ug/L	5.0	0.89	5		05/01/17 15:25	71-43-2	
Ethylbenzene	**7.4**	ug/L	5.0	0.98	5		05/01/17 15:25	100-41-4	
Toluene	**7.6**	ug/L	5.0	0.55	5		05/01/17 15:25	108-88-3	
Xylene (Total)	**20.4**	ug/L	15.0	3.8	5		05/01/17 15:25	1330-20-7	
m&p-Xylene	**12.1**	ug/L	10.0	2.4	5		05/01/17 15:25	179601-23-1	
o-Xylene	**8.4**	ug/L	5.0	1.4	5		05/01/17 15:25	95-47-6	
Surrogates									
Toluene-d8 (S)	90	%	84-115		5		05/01/17 15:25	2037-26-5	
4-Bromofluorobenzene (S)	103	%	81-119		5		05/01/17 15:25	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	77-126		5		05/01/17 15:25	17060-07-0	
Dibromofluoromethane (S)	103	%	70-130		5		05/01/17 15:25	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity,Total (CaCO3 pH4.5)	**234**	mg/L	10.0	1.7	1		05/03/17 18:36		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	ND	mg/L	0.10	0.012	1		05/02/17 14:17		H3,H6, M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-13-0417 **Lab ID: 30217235005** Collected: 04/26/17 09:25 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		04/28/17 16:27	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	1.0	0.32	1	05/02/17 08:12	05/02/17 13:58	7727-37-9	MH
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**3.4**	mg/L	3.0	0.35	1		04/28/17 11:57	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.011	1		04/28/17 10:30		
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	**0.070**	mg/L	0.010	0.0020	1	05/03/17 14:33	05/03/17 19:12	57-12-5	ML
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**16.0**	mg/L	10.0	1.0	1		04/28/17 15:21	14808-79-8	ML

Sample: MW-14-0417 **Lab ID: 30217235006** Collected: 04/26/17 12:00 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	04/28/17 11:00	05/01/17 09:26	7439-92-1	
Manganese	**26.2**	ug/L	5.0	0.71	1	04/28/17 11:00	05/01/17 09:26	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	ND	ug/L	0.096	0.026	1	05/02/17 14:39	05/03/17 18:51	83-32-9	
Acenaphthylene	**0.25**	ug/L	0.096	0.032	1	05/02/17 14:39	05/03/17 18:51	208-96-8	
Anthracene	**0.096**	ug/L	0.096	0.044	1	05/02/17 14:39	05/03/17 18:51	120-12-7	
Benzo(a)anthracene	**0.13**	ug/L	0.096	0.046	1	05/02/17 14:39	05/03/17 18:51	56-55-3	
Benzo(a)pyrene	**0.12**	ug/L	0.096	0.033	1	05/02/17 14:39	05/03/17 18:51	50-32-8	
Benzo(b)fluoranthene	**0.21**	ug/L	0.096	0.034	1	05/02/17 14:39	05/03/17 18:51	205-99-2	ip
Benzo(g,h,i)perylene	**0.11**	ug/L	0.096	0.037	1	05/02/17 14:39	05/03/17 18:51	191-24-2	
Benzo(k)fluoranthene	**0.18**	ug/L	0.096	0.035	1	05/02/17 14:39	05/03/17 18:51	207-08-9	ip
Chrysene	**0.13**	ug/L	0.096	0.034	1	05/02/17 14:39	05/03/17 18:51	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.096	0.030	1	05/02/17 14:39	05/03/17 18:51	53-70-3	
Fluoranthene	**0.17**	ug/L	0.096	0.059	1	05/02/17 14:39	05/03/17 18:51	206-44-0	
Fluorene	ND	ug/L	0.096	0.025	1	05/02/17 14:39	05/03/17 18:51	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.096	0.033	1	05/02/17 14:39	05/03/17 18:51	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.096	0.055	1	05/02/17 14:39	05/03/17 18:51	91-57-6	
Naphthalene	ND	ug/L	0.096	0.059	1	05/02/17 14:39	05/03/17 18:51	91-20-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-14-0417 **Lab ID: 30217235006** Collected: 04/26/17 12:00 Received: 04/27/17 10:30 Matrix: Water

Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Phenanthrene	ND	ug/L	0.096	0.036	1	05/02/17 14:39	05/03/17 18:51	85-01-8	
Pyrene	**0.28**	ug/L	0.096	0.054	1	05/02/17 14:39	05/03/17 18:51	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	43	%	19-123		1	05/02/17 14:39	05/03/17 18:51	321-60-8	
Terphenyl-d14 (S)	71	%	58-130		1	05/02/17 14:39	05/03/17 18:51	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	ND	ug/L	1.0	0.18	1		05/01/17 15:50	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.20	1		05/01/17 15:50	100-41-4	
Toluene	ND	ug/L	1.0	0.11	1		05/01/17 15:50	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.77	1		05/01/17 15:50	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.49	1		05/01/17 15:50	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.28	1		05/01/17 15:50	95-47-6	
Surrogates									
Toluene-d8 (S)	90	%	84-115		1		05/01/17 15:50	2037-26-5	
4-Bromofluorobenzene (S)	106	%	81-119		1		05/01/17 15:50	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	77-126		1		05/01/17 15:50	17060-07-0	
Dibromofluoromethane (S)	105	%	70-130		1		05/01/17 15:50	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity,Total (CaCO3 pH4.5)	**380**	mg/L	10.0	1.7	1		05/03/17 18:48		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**0.22**	mg/L	0.10	0.012	1		04/27/17 15:58		H1,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		04/28/17 16:29	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	1.0	0.32	1	05/02/17 08:12	05/02/17 14:01	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**3.5**	mg/L	3.0	0.35	1		04/28/17 11:59	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**0.29**	mg/L	0.10	0.011	1		04/28/17 10:34		
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	**0.079**	mg/L	0.010	0.0020	1	05/03/17 14:33	05/03/17 19:19	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**12.5**	mg/L	10.0	1.0	1		04/28/17 15:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-15-0417 **Lab ID: 30217235007** Collected: 04/26/17 11:00 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	04/28/17 11:00	05/01/17 09:29	7439-92-1	
Manganese	**639**	ug/L	5.0	0.71	1	04/28/17 11:00	05/01/17 09:29	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**10.1**	ug/L	0.098	0.026	1	05/02/17 14:39	05/03/17 19:09	83-32-9	
Acenaphthylene	**1.5**	ug/L	0.098	0.033	1	05/02/17 14:39	05/03/17 19:09	208-96-8	
Anthracene	**0.36**	ug/L	0.098	0.044	1	05/02/17 14:39	05/03/17 19:09	120-12-7	
Benzo(a)anthracene	**0.13**	ug/L	0.098	0.047	1	05/02/17 14:39	05/03/17 19:09	56-55-3	
Benzo(a)pyrene	**0.10**	ug/L	0.098	0.033	1	05/02/17 14:39	05/03/17 19:09	50-32-8	
Benzo(b)fluoranthene	**0.16**	ug/L	0.098	0.035	1	05/02/17 14:39	05/03/17 19:09	205-99-2	ip
Benzo(g,h,i)perylene	ND	ug/L	0.098	0.037	1	05/02/17 14:39	05/03/17 19:09	191-24-2	
Benzo(k)fluoranthene	**0.13**	ug/L	0.098	0.036	1	05/02/17 14:39	05/03/17 19:09	207-08-9	ip
Chrysene	**0.12**	ug/L	0.098	0.035	1	05/02/17 14:39	05/03/17 19:09	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.098	0.031	1	05/02/17 14:39	05/03/17 19:09	53-70-3	
Fluoranthene	**0.46**	ug/L	0.098	0.060	1	05/02/17 14:39	05/03/17 19:09	206-44-0	
Fluorene	**1.9**	ug/L	0.098	0.025	1	05/02/17 14:39	05/03/17 19:09	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.098	0.034	1	05/02/17 14:39	05/03/17 19:09	193-39-5	
2-Methylnaphthalene	**0.10**	ug/L	0.098	0.056	1	05/02/17 14:39	05/03/17 19:09	91-57-6	
Naphthalene	**34.1**	ug/L	0.98	0.60	10	05/02/17 14:39	05/03/17 20:53	91-20-3	
Phenanthrene	**1.2**	ug/L	0.098	0.036	1	05/02/17 14:39	05/03/17 19:09	85-01-8	
Pyrene	**0.58**	ug/L	0.098	0.055	1	05/02/17 14:39	05/03/17 19:09	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	58	%	19-123		1	05/02/17 14:39	05/03/17 19:09	321-60-8	
Terphenyl-d14 (S)	81	%	58-130		1	05/02/17 14:39	05/03/17 19:09	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	**111**	ug/L	1.0	0.18	1		05/04/17 15:52	71-43-2	
Ethylbenzene	**24.5**	ug/L	1.0	0.20	1		05/04/17 15:52	100-41-4	
Toluene	**1.1**	ug/L	1.0	0.11	1		05/04/17 15:52	108-88-3	
Xylene (Total)	**10**	ug/L	3.0	0.77	1		05/04/17 15:52	1330-20-7	
m&p-Xylene	**2.7**	ug/L	2.0	0.49	1		05/04/17 15:52	179601-23-1	
o-Xylene	**7.3**	ug/L	1.0	0.28	1		05/04/17 15:52	95-47-6	
Surrogates									
Toluene-d8 (S)	90	%	84-115		1		05/04/17 15:52	2037-26-5	
4-Bromofluorobenzene (S)	100	%	81-119		1		05/04/17 15:52	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	77-126		1		05/04/17 15:52	17060-07-0	
Dibromofluoromethane (S)	106	%	70-130		1		05/04/17 15:52	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity,Total (CaCO3 pH4.5)	**562**	mg/L	10.0	1.7	1		05/03/17 18:53		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**3.0**	mg/L	1.0	0.12	10		04/27/17 16:22		H1,H6

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-15-0417 **Lab ID: 30217235007** Collected: 04/26/17 11:00 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		04/28/17 16:30	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**2.0**	mg/L	1.0	0.32	1	05/02/17 08:12	05/02/17 14:02	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**25.7**	mg/L	3.0	0.35	1		04/28/17 12:00	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.011	1		04/28/17 10:38		
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	**0.42**	mg/L	0.010	0.0020	1	05/03/17 14:33	05/03/17 19:20	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**17.7**	mg/L	10.0	1.0	1		04/28/17 15:31	14808-79-8	

Sample: MW-16-0417 **Lab ID: 30217235008** Collected: 04/26/17 13:00 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	04/28/17 11:00	05/01/17 09:31	7439-92-1	
Manganese	**522**	ug/L	5.0	0.71	1	04/28/17 11:00	05/01/17 09:31	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**3.0**	ug/L	0.097	0.026	1	05/02/17 14:39	05/03/17 19:26	83-32-9	
Acenaphthylene	**1.9**	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 19:26	208-96-8	
Anthracene	**0.37**	ug/L	0.097	0.044	1	05/02/17 14:39	05/03/17 19:26	120-12-7	
Benzo(a)anthracene	**0.11**	ug/L	0.097	0.047	1	05/02/17 14:39	05/03/17 19:26	56-55-3	
Benzo(a)pyrene	**0.11**	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 19:26	50-32-8	
Benzo(b)fluoranthene	**0.17**	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 19:26	205-99-2	ip
Benzo(g,h,i)perylene	ND	ug/L	0.097	0.037	1	05/02/17 14:39	05/03/17 19:26	191-24-2	
Benzo(k)fluoranthene	**0.15**	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 19:26	207-08-9	ip
Chrysene	**0.098**	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 19:26	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.097	0.030	1	05/02/17 14:39	05/03/17 19:26	53-70-3	
Fluoranthene	**0.41**	ug/L	0.097	0.060	1	05/02/17 14:39	05/03/17 19:26	206-44-0	
Fluorene	**1.1**	ug/L	0.097	0.025	1	05/02/17 14:39	05/03/17 19:26	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 19:26	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.097	0.056	1	05/02/17 14:39	05/03/17 19:26	91-57-6	
Naphthalene	**0.16**	ug/L	0.097	0.059	1	05/02/17 14:39	05/03/17 19:26	91-20-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-16-0417 **Lab ID: 30217235008** Collected: 04/26/17 13:00 Received: 04/27/17 10:30 Matrix: Water

Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Phenanthrene	**0.99**	ug/L	0.097	0.036	1	05/02/17 14:39	05/03/17 19:26	85-01-8	
Pyrene	**0.50**	ug/L	0.097	0.055	1	05/02/17 14:39	05/03/17 19:26	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	50	%	19-123		1	05/02/17 14:39	05/03/17 19:26	321-60-8	
Terphenyl-d14 (S)	69	%	58-130		1	05/02/17 14:39	05/03/17 19:26	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	**5.9**	ug/L	1.0	0.18	1		05/01/17 16:41	71-43-2	
Ethylbenzene	**3.1**	ug/L	1.0	0.20	1		05/01/17 16:41	100-41-4	
Toluene	ND	ug/L	1.0	0.11	1		05/01/17 16:41	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.77	1		05/01/17 16:41	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.49	1		05/01/17 16:41	179601-23-1	
o-Xylene	**1.6**	ug/L	1.0	0.28	1		05/01/17 16:41	95-47-6	
Surrogates									
Toluene-d8 (S)	89	%	84-115		1		05/01/17 16:41	2037-26-5	
4-Bromofluorobenzene (S)	102	%	81-119		1		05/01/17 16:41	460-00-4	
1,2-Dichloroethane-d4 (S)	113	%	77-126		1		05/01/17 16:41	17060-07-0	
Dibromofluoromethane (S)	106	%	70-130		1		05/01/17 16:41	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity,Total (CaCO3 pH4.5)	**706**	mg/L	10.0	1.7	1		05/03/17 19:01		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**1.2**	mg/L	0.10	0.012	1		04/27/17 16:00		H1,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		04/28/17 16:31	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**2.4**	mg/L	1.0	0.32	1	05/02/17 08:12	05/02/17 14:03	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**3.4**	mg/L	3.0	0.35	1		04/28/17 12:01	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**0.33**	mg/L	0.10	0.011	1		04/28/17 10:40		
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	**0.21**	mg/L	0.010	0.0020	1	05/03/17 14:33	05/03/17 19:21	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**37.8**	mg/L	10.0	1.0	1		04/28/17 15:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-13-Matrix Spike-0417 **Lab ID: 30217235009** Collected: 04/26/17 09:40 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	**512**	ug/L	5.0	4.0	1	04/28/17 11:00	05/01/17 09:09	7439-92-1	
Manganese	**534**	ug/L	5.0	0.71	1	04/28/17 11:00	05/01/17 09:09	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**1.8**	ug/L	0.097	0.026	1	05/02/17 14:39	05/03/17 19:43	83-32-9	
Acenaphthylene	**2.2**	ug/L	0.097	0.032	1	05/02/17 14:39	05/03/17 19:43	208-96-8	
Anthracene	**2.0**	ug/L	0.097	0.044	1	05/02/17 14:39	05/03/17 19:43	120-12-7	
Benzo(a)anthracene	**2.5**	ug/L	0.097	0.047	1	05/02/17 14:39	05/03/17 19:43	56-55-3	
Benzo(a)pyrene	**2.4**	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 19:43	50-32-8	
Benzo(b)fluoranthene	**2.3**	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 19:43	205-99-2	
Benzo(g,h,i)perylene	**1.8**	ug/L	0.097	0.037	1	05/02/17 14:39	05/03/17 19:43	191-24-2	
Benzo(k)fluoranthene	**1.8**	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 19:43	207-08-9	
Chrysene	**2.4**	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 19:43	218-01-9	
Dibenz(a,h)anthracene	**1.5**	ug/L	0.097	0.030	1	05/02/17 14:39	05/03/17 19:43	53-70-3	
Fluoranthene	**3.5**	ug/L	0.097	0.059	1	05/02/17 14:39	05/03/17 19:43	206-44-0	
Fluorene	**1.6**	ug/L	0.097	0.025	1	05/02/17 14:39	05/03/17 19:43	86-73-7	
Indeno(1,2,3-cd)pyrene	**1.8**	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 19:43	193-39-5	
2-Methylnaphthalene	**1.5**	ug/L	0.097	0.055	1	05/02/17 14:39	05/03/17 19:43	91-57-6	
Naphthalene	**1.8**	ug/L	0.097	0.059	1	05/02/17 14:39	05/03/17 19:43	91-20-3	
Phenanthrene	**2.6**	ug/L	0.097	0.036	1	05/02/17 14:39	05/03/17 19:43	85-01-8	
Pyrene	**3.6**	ug/L	0.097	0.054	1	05/02/17 14:39	05/03/17 19:43	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	50	%	19-123		1	05/02/17 14:39	05/03/17 19:43	321-60-8	
Terphenyl-d14 (S)	75	%	58-130		1	05/02/17 14:39	05/03/17 19:43	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	**116**	ug/L	5.0	0.89	5		05/01/17 20:29	71-43-2	
Ethylbenzene	**97.4**	ug/L	5.0	0.98	5		05/01/17 20:29	100-41-4	
Toluene	**103**	ug/L	5.0	0.55	5		05/01/17 20:29	108-88-3	
Xylene (Total)	**296**	ug/L	15.0	3.8	5		05/01/17 20:29	1330-20-7	
m&p-Xylene	**202**	ug/L	10.0	2.4	5		05/01/17 20:29	179601-23-1	
o-Xylene	**94.0**	ug/L	5.0	1.4	5		05/01/17 20:29	95-47-6	
Surrogates									
Toluene-d8 (S)	89	%	84-115		5		05/01/17 20:29	2037-26-5	
4-Bromofluorobenzene (S)	100	%	81-119		5		05/01/17 20:29	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	77-126		5		05/01/17 20:29	17060-07-0	
Dibromofluoromethane (S)	103	%	70-130		5		05/01/17 20:29	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity,Total (CaCO3 pH4.5)	**230**	mg/L	10.0	1.7	1		05/03/17 19:06		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**1.0**	mg/L	0.10	0.012	1		05/02/17 14:21		H3,H6

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-13-Matrix Spike-0417 **Lab ID: 30217235009** Collected: 04/26/17 09:40 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		04/28/17 16:32	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**5.1**	mg/L	1.0	0.32	1	05/02/17 08:12	05/02/17 14:03	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**23.8**	mg/L	3.0	0.35	1		04/28/17 12:04	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.011	1		04/28/17 10:41		
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	**0.077**	mg/L	0.010	0.0020	1	05/03/17 14:33	05/03/17 19:24	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**15.2**	mg/L	10.0	1.0	1		04/28/17 15:33	14808-79-8	

Sample: MW-13-Duplicate Matrix Spike **Lab ID: 30217235010** Collected: 04/26/17 09:55 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	**484**	ug/L	5.0	4.0	1	04/28/17 11:00	05/01/17 09:11	7439-92-1	
Manganese	**510**	ug/L	5.0	0.71	1	04/28/17 11:00	05/01/17 09:11	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**1.4**	ug/L	0.097	0.026	1	05/02/17 14:39	05/03/17 20:01	83-32-9	
Acenaphthylene	**2.1**	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 20:01	208-96-8	
Anthracene	**2.0**	ug/L	0.097	0.044	1	05/02/17 14:39	05/03/17 20:01	120-12-7	
Benzo(a)anthracene	**2.4**	ug/L	0.097	0.047	1	05/02/17 14:39	05/03/17 20:01	56-55-3	
Benzo(a)pyrene	**2.2**	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 20:01	50-32-8	
Benzo(b)fluoranthene	**2.1**	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 20:01	205-99-2	
Benzo(g,h,i)perylene	**1.8**	ug/L	0.097	0.037	1	05/02/17 14:39	05/03/17 20:01	191-24-2	
Benzo(k)fluoranthene	**1.9**	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 20:01	207-08-9	
Chrysene	**2.2**	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 20:01	218-01-9	
Dibenz(a,h)anthracene	**1.6**	ug/L	0.097	0.030	1	05/02/17 14:39	05/03/17 20:01	53-70-3	
Fluoranthene	**3.0**	ug/L	0.097	0.060	1	05/02/17 14:39	05/03/17 20:01	206-44-0	
Fluorene	**1.6**	ug/L	0.097	0.025	1	05/02/17 14:39	05/03/17 20:01	86-73-7	
Indeno(1,2,3-cd)pyrene	**1.7**	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 20:01	193-39-5	
2-Methylnaphthalene	**1.6**	ug/L	0.097	0.056	1	05/02/17 14:39	05/03/17 20:01	91-57-6	
Naphthalene	**1.8**	ug/L	0.097	0.059	1	05/02/17 14:39	05/03/17 20:01	91-20-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: MW-13-Duplicate Matrix Spike **Lab ID: 30217235010** Collected: 04/26/17 09:55 Received: 04/27/17 10:30 Matrix: Water

Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Phenanthrene	**2.4**	ug/L	0.097	0.036	1	05/02/17 14:39	05/03/17 20:01	85-01-8	
Pyrene	**2.6**	ug/L	0.097	0.055	1	05/02/17 14:39	05/03/17 20:01	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	60	%	19-123		1	05/02/17 14:39	05/03/17 20:01	321-60-8	
Terphenyl-d14 (S)	82	%	58-130		1	05/02/17 14:39	05/03/17 20:01	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	**112**	ug/L	5.0	0.89	5		05/01/17 20:54	71-43-2	
Ethylbenzene	**96.2**	ug/L	5.0	0.98	5		05/01/17 20:54	100-41-4	
Toluene	**99.2**	ug/L	5.0	0.55	5		05/01/17 20:54	108-88-3	
Xylene (Total)	**295**	ug/L	15.0	3.8	5		05/01/17 20:54	1330-20-7	
m&p-Xylene	**198**	ug/L	10.0	2.4	5		05/01/17 20:54	179601-23-1	
o-Xylene	**97.0**	ug/L	5.0	1.4	5		05/01/17 20:54	95-47-6	
Surrogates									
Toluene-d8 (S)	90	%	84-115		5		05/01/17 20:54	2037-26-5	
4-Bromofluorobenzene (S)	104	%	81-119		5		05/01/17 20:54	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	77-126		5		05/01/17 20:54	17060-07-0	
Dibromofluoromethane (S)	104	%	70-130		5		05/01/17 20:54	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity,Total (CaCO3 pH4.5)	**237**	mg/L	10.0	1.7	1		05/03/17 19:10		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**1.0**	mg/L	0.10	0.012	1		05/02/17 14:21		H3,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		04/28/17 16:34	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**5.4**	mg/L	1.0	0.32	1	05/02/17 08:12	05/02/17 14:06	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**23.3**	mg/L	3.0	0.35	1		04/28/17 12:05	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.011	1		04/28/17 10:42		
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	**0.075**	mg/L	0.010	0.0020	1	05/03/17 14:33	05/03/17 19:25	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**15.9**	mg/L	10.0	1.0	1		04/28/17 15:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: Field Blank-0417 **Lab ID: 30217235011** Collected: 04/26/17 12:15 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	04/28/17 11:00	05/01/17 09:33	7439-92-1	
Manganese	**26.4**	ug/L	5.0	0.71	1	04/28/17 11:00	05/01/17 09:33	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	ND	ug/L	0.097	0.026	1	05/02/17 14:39	05/03/17 20:18	83-32-9	
Acenaphthylene	**0.32**	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 20:18	208-96-8	
Anthracene	**0.12**	ug/L	0.097	0.044	1	05/02/17 14:39	05/03/17 20:18	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.097	0.047	1	05/02/17 14:39	05/03/17 20:18	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.097	0.033	1	05/02/17 14:39	05/03/17 20:18	50-32-8	
Benzo(b)fluoranthene	**0.11**	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 20:18	205-99-2	ip
Benzo(g,h,i)perylene	ND	ug/L	0.097	0.037	1	05/02/17 14:39	05/03/17 20:18	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 20:18	207-08-9	ip
Chrysene	ND	ug/L	0.097	0.035	1	05/02/17 14:39	05/03/17 20:18	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.097	0.030	1	05/02/17 14:39	05/03/17 20:18	53-70-3	
Fluoranthene	ND	ug/L	0.097	0.060	1	05/02/17 14:39	05/03/17 20:18	206-44-0	
Fluorene	ND	ug/L	0.097	0.025	1	05/02/17 14:39	05/03/17 20:18	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.097	0.034	1	05/02/17 14:39	05/03/17 20:18	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.097	0.056	1	05/02/17 14:39	05/03/17 20:18	91-57-6	
Naphthalene	ND	ug/L	0.097	0.059	1	05/02/17 14:39	05/03/17 20:18	91-20-3	
Phenanthrene	ND	ug/L	0.097	0.036	1	05/02/17 14:39	05/03/17 20:18	85-01-8	
Pyrene	**0.14**	ug/L	0.097	0.055	1	05/02/17 14:39	05/03/17 20:18	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	53	%	19-123		1	05/02/17 14:39	05/03/17 20:18	321-60-8	
Terphenyl-d14 (S)	81	%	58-130		1	05/02/17 14:39	05/03/17 20:18	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	ND	ug/L	1.0	0.18	1		05/01/17 17:06	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.20	1		05/01/17 17:06	100-41-4	
Toluene	ND	ug/L	1.0	0.11	1		05/01/17 17:06	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.77	1		05/01/17 17:06	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.49	1		05/01/17 17:06	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.28	1		05/01/17 17:06	95-47-6	
Surrogates									
Toluene-d8 (S)	87	%	84-115		1		05/01/17 17:06	2037-26-5	
4-Bromofluorobenzene (S)	99	%	81-119		1		05/01/17 17:06	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	77-126		1		05/01/17 17:06	17060-07-0	
Dibromofluoromethane (S)	104	%	70-130		1		05/01/17 17:06	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity,Total (CaCO3 pH4.5)	**407**	mg/L	10.0	1.7	1		05/03/17 19:13		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**0.25**	mg/L	0.10	0.012	1		04/27/17 16:07		H1,H6

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Sample: Field Blank-0417 **Lab ID: 30217235011** Collected: 04/26/17 12:15 Received: 04/27/17 10:30 Matrix: Water
Comments: • Trip blank not received with samples.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		04/28/17 16:34	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	1.0	0.32	1	05/02/17 08:12	05/02/17 14:07	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**3.4**	mg/L	3.0	0.35	1		04/28/17 12:05	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**0.25**	mg/L	0.10	0.011	1		04/28/17 10:44		
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	**0.082**	mg/L	0.010	0.0020	1	05/03/17 14:33	05/03/17 19:26	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**14.5**	mg/L	10.0	1.0	1		04/28/17 15:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

QC Batch: 256792 Analysis Method: EPA 6010C
QC Batch Method: EPA 3005A Analysis Description: 6010C MET
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

METHOD BLANK: 1264858 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Lead	ug/L	ND	5.0	4.0	05/01/17 08:56	
Manganese	ug/L	ND	5.0	0.71	05/01/17 08:56	

LABORATORY CONTROL SAMPLE: 1264859

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	497	99	80-120	
Manganese	ug/L	500	509	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1264861 1264862

Parameter	Units	30217235005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	500	500	512	484	102	96	75-125	6	20	
Manganese	ug/L	41.7	500	500	534	510	98	94	75-125	5	20	

SAMPLE DUPLICATE: 1264860

Parameter	Units	30217235005 Result	Dup Result	RPD	Max RPD	Qualifiers
Lead	ug/L	ND	ND		20	
Manganese	ug/L	41.7	40.2	4	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

QC Batch: 256945 Analysis Method: EPA 8260C
QC Batch Method: EPA 8260C Analysis Description: 8260C MSV UST-WATER
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

METHOD BLANK: 1265994 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.18	05/01/17 12:53	
Ethylbenzene	ug/L	ND	1.0	0.20	05/01/17 12:53	
m&p-Xylene	ug/L	ND	2.0	0.49	05/01/17 12:53	
o-Xylene	ug/L	ND	1.0	0.28	05/01/17 12:53	
Toluene	ug/L	ND	1.0	0.11	05/01/17 12:53	
Xylene (Total)	ug/L	ND	3.0	0.77	05/01/17 12:53	
1,2-Dichloroethane-d4 (S)	%	119	77-126		05/01/17 12:53	
4-Bromofluorobenzene (S)	%	102	81-119		05/01/17 12:53	
Dibromofluoromethane (S)	%	109	70-130		05/01/17 12:53	
Toluene-d8 (S)	%	89	84-115		05/01/17 12:53	

LABORATORY CONTROL SAMPLE: 1265995

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.4	92	69-115	
Ethylbenzene	ug/L	20	17.1	85	71-116	
m&p-Xylene	ug/L	40	32.9	82	74-118	
o-Xylene	ug/L	20	16.4	82	71-119	
Toluene	ug/L	20	17.6	88	70-115	
Xylene (Total)	ug/L	60	49.3	82	73-118	
1,2-Dichloroethane-d4 (S)	%			111	77-126	
4-Bromofluorobenzene (S)	%			104	81-119	
Dibromofluoromethane (S)	%			108	70-130	
Toluene-d8 (S)	%			91	84-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1265996 1265997

Parameter	Units	30217235005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	15.5	100	100	116	112	101	96	63-123	4	30	
Ethylbenzene	ug/L	7.4	100	100	97.4	96.2	90	89	70-120	1	30	
m&p-Xylene	ug/L	12.1	200	200	202	198	95	93	70-123	2	30	
o-Xylene	ug/L	8.4	100	100	94.0	97.0	86	89	68-122	3	30	
Toluene	ug/L	7.6	100	100	103	99.2	95	92	66-124	3	30	
Xylene (Total)	ug/L	20.4	300	300	296	295	92	92	68-123	0	30	
1,2-Dichloroethane-d4 (S)	%						110	108	77-126			
4-Bromofluorobenzene (S)	%						100	104	81-119			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1265996 1265997

Parameter	Units	30217235005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromofluoromethane (S)	%						103	104	70-130			
Toluene-d8 (S)	%						89	90	84-115			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

QC Batch: 257041 Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3510C Analysis Description: 8270D Water PAH by SIM MSSV
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

METHOD BLANK: 1266259 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	0.057	05/03/17 16:49	
Acenaphthene	ug/L	ND	0.10	0.027	05/03/17 16:49	
Acenaphthylene	ug/L	ND	0.10	0.034	05/03/17 16:49	
Anthracene	ug/L	ND	0.10	0.046	05/03/17 16:49	
Benzo(a)anthracene	ug/L	ND	0.10	0.048	05/03/17 16:49	
Benzo(a)pyrene	ug/L	ND	0.10	0.034	05/03/17 16:49	
Benzo(b)fluoranthene	ug/L	ND	0.10	0.035	05/03/17 16:49	
Benzo(g,h,i)perylene	ug/L	ND	0.10	0.038	05/03/17 16:49	
Benzo(k)fluoranthene	ug/L	ND	0.10	0.036	05/03/17 16:49	
Chrysene	ug/L	ND	0.10	0.036	05/03/17 16:49	
Dibenz(a,h)anthracene	ug/L	ND	0.10	0.031	05/03/17 16:49	
Fluoranthene	ug/L	ND	0.10	0.061	05/03/17 16:49	
Fluorene	ug/L	ND	0.10	0.026	05/03/17 16:49	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	0.035	05/03/17 16:49	
Naphthalene	ug/L	ND	0.10	0.061	05/03/17 16:49	
Phenanthrene	ug/L	ND	0.10	0.037	05/03/17 16:49	
Pyrene	ug/L	ND	0.10	0.056	05/03/17 16:49	
2-Fluorobiphenyl (S)	%	63	19-123		05/03/17 16:49	
Terphenyl-d14 (S)	%	81	58-130		05/03/17 16:49	

LABORATORY CONTROL SAMPLE: 1266260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	2	1.2	61	47-103	
Acenaphthene	ug/L	2	1.3	66	48-104	
Acenaphthylene	ug/L	2	1.4	70	44-109	
Anthracene	ug/L	2	1.5	77	49-112	
Benzo(a)anthracene	ug/L	2	1.8	92	63-109	
Benzo(a)pyrene	ug/L	2	1.7	84	51-98	
Benzo(b)fluoranthene	ug/L	2	1.9	97	41-139	
Benzo(g,h,i)perylene	ug/L	2	1.8	88	44-124	
Benzo(k)fluoranthene	ug/L	2	1.7	83	58-125	
Chrysene	ug/L	2	1.9	93	62-115	
Dibenz(a,h)anthracene	ug/L	2	1.8	88	55-124	
Fluoranthene	ug/L	2	1.8	88	65-112	
Fluorene	ug/L	2	1.5	73	49-108	
Indeno(1,2,3-cd)pyrene	ug/L	2	1.7	87	54-125	
Naphthalene	ug/L	2	1.2	58	42-107	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

LABORATORY CONTROL SAMPLE: 1266260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	2	1.6	79	50-109	
Pyrene	ug/L	2	1.8	89	64-109	
2-Fluorobiphenyl (S)	%			67	19-123	
Terphenyl-d14 (S)	%			88	58-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1266261 1266262

Parameter	Units	30217235005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Methylnaphthalene	ug/L	0.46	2	2	1.5	1.6	53	59	47-103	8	20	
Acenaphthene	ug/L	0.34	2	2	1.8	1.4	74	53	48-104	26	20	R1
Acenaphthylene	ug/L	1.2	2	2	2.3	2.1	52	45	44-109	6	20	
Anthracene	ug/L	0.55	2	2	2.1	2.1	77	76	49-112	1	20	
Benzo(a)anthracene	ug/L	0.93	2	2	2.6	2.5	85	77	63-109	7	20	
Benzo(a)pyrene	ug/L	1.0	2	2	2.5	2.2	73	62	51-98	10	20	
Benzo(b)fluoranthene	ug/L	1.2	2	2	2.4	2.2	55	45	41-139	9	20	
Benzo(g,h,i)perylene	ug/L	0.55	2	2	1.9	1.9	68	65	44-124	3	20	
Benzo(k)fluoranthene	ug/L	1.1	2	2	1.9	1.9	40	44	58-125	4	20	ML
Chrysene	ug/L	0.81	2	2	2.4	2.3	81	73	62-115	7	20	
Dibenz(a,h)anthracene	ug/L	0.13	2	2	1.5	1.6	69	76	55-124	9	20	
Fluoranthene	ug/L	1.9	2	2	3.6	3.1	82	57	65-112	15	20	ML
Fluorene	ug/L	0.46	2	2	1.7	1.6	60	59	49-108	1	20	
Indeno(1,2,3-cd)pyrene	ug/L	0.42	2	2	1.8	1.8	70	69	54-125	1	20	
Naphthalene	ug/L	0.96	2	2	1.9	1.8	46	44	42-107	3	20	
Phenanthrene	ug/L	1.5	2	2	2.6	2.5	55	46	50-109	7	20	ML
Pyrene	ug/L	1.7	2	2	3.7	2.7	101	52	64-109	31	20	ML,R1
2-Fluorobiphenyl (S)	%						50	60	19-123		20	
Terphenyl-d14 (S)	%						75	82	58-130		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

QC Batch: 257303 Analysis Method: SM2320B-97
QC Batch Method: SM2320B-97 Analysis Description: 2320B Alkalinity
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

METHOD BLANK: 1267332 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity,Total (CaCO3 pH4.5)	mg/L	ND	10.0	1.7	05/03/17 17:44	

LABORATORY CONTROL SAMPLE: 1267333

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity,Total (CaCO3 pH4.5)	mg/L	20	20.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1267609 1267610

Parameter	Units	30217235005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity,Total (CaCO3 pH4.5)	mg/L	234	50	50	272	256	76	44	85-115	6	20	ML

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

QC Batch: 256711 Analysis Method: SM3500-FeD-00
QC Batch Method: SM3500-FeD-00 Analysis Description: Iron, Ferrous
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235006, 30217235007, 30217235008, 30217235011

METHOD BLANK: 1264294 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235006, 30217235007, 30217235008, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	ND	0.10	0.012	04/27/17 15:48	H6

LABORATORY CONTROL SAMPLE: 1264295

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	1	1.0	101	85-115	H6

MATRIX SPIKE SAMPLE: 1264297

Parameter	Units	30217235010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	1.0		1.1			H3,H6

SAMPLE DUPLICATE: 1264296

Parameter	Units	30217235010 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	1.0	0.14		20	H3,H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

QC Batch: 257162 Analysis Method: SM3500-FeD-00
QC Batch Method: SM3500-FeD-00 Analysis Description: Iron, Ferrous
Associated Lab Samples: 30217235005, 30217235009, 30217235010

METHOD BLANK: 1266649 Matrix: Water
Associated Lab Samples: 30217235005, 30217235009, 30217235010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	ND	0.10	0.012	05/02/17 14:14	H6

LABORATORY CONTROL SAMPLE: 1266650

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	1	0.99	99	85-115	H6

MATRIX SPIKE SAMPLE: 1266664

Parameter	Units	30217235005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	ND	1	0.89	83	85-115	H3,H6,M1

MATRIX SPIKE SAMPLE: 1266665

Parameter	Units	30217235005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	ND	1	0.89	84	85-115	H3,H6,M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

QC Batch: 256834 Analysis Method: SM4500S2F-00
QC Batch Method: SM4500S2F-00 Analysis Description: 4500S2F Sulfide, Iodometric
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

METHOD BLANK: 1265100 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	1.0	0.31	04/28/17 16:15	

LABORATORY CONTROL SAMPLE: 1265101

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	5.7	5.8	102	85-115	

MATRIX SPIKE SAMPLE: 1265102

Parameter	Units	30217235009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	ND	5.7	5.0	88	85-115	

SAMPLE DUPLICATE: 1265105

Parameter	Units	30217235005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

QC Batch: 257087 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

METHOD BLANK: 1266397 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	1.0	0.32	05/02/17 13:52	

LABORATORY CONTROL SAMPLE: 1266398

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	4	4.3	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1266399 1266400

Parameter	Units	30217235005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	ND	4	4	5.1	5.4	112	119	90-110	6	20	MH

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1266401 1266402

Parameter	Units	30217214001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	16.0	4	4	19.2	19.0	81	75	90-110	1	20	ML

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

QC Batch: 256749 Analysis Method: SM4500ClE-97
QC Batch Method: SM4500ClE-97 Analysis Description: 4500 Chloride
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

METHOD BLANK: 1264657 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	0.35	04/28/17 11:49	

METHOD BLANK: 1264659 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	0.35	04/28/17 11:52	

METHOD BLANK: 1264880 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	0.35	04/28/17 11:52	

LABORATORY CONTROL SAMPLE: 1264658

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.1	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1264660 1264661

Parameter	Units	30217235005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.4	20	20	23.7	23.8	102	102	85-115	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

QC Batch: 256746 Analysis Method: SM4500NO3F-00
QC Batch Method: SM4500NO3F-00 Analysis Description: SM4500NO3-F, Nitrate, Preserved
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

METHOD BLANK: 1264649 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.011	04/28/17 10:17	

LABORATORY CONTROL SAMPLE: 1264650

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	4	3.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1264694 1264695

Parameter	Units	30217235005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	ND	5	5	4.7	4.9	95	98	90-110	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

QC Batch: 257286 Analysis Method: EPA 9012B
QC Batch Method: EPA 9012B Analysis Description: 9012B Cyanide, Total
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

METHOD BLANK: 1267260 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.010	0.0020	05/03/17 19:07	

LABORATORY CONTROL SAMPLE: 1267261

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.2	0.19	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1267262 1267263

Parameter	Units	30217235005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	0.070	.1	.1	0.072	0.073	2	3	90-110	1	20	ML

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

QC Batch: 256803 Analysis Method: ASTM D516-11
QC Batch Method: ASTM D516-11 Analysis Description: ASTM D516-90, 02 Sulfate Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

METHOD BLANK: 1264905 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	10.0	1.0	04/28/17 15:17	

METHOD BLANK: 1264906 Matrix: Water
Associated Lab Samples: 30217235001, 30217235002, 30217235003, 30217235004, 30217235005, 30217235006, 30217235007, 30217235008, 30217235009, 30217235010, 30217235011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	10.0	1.0	04/28/17 15:19	

LABORATORY CONTROL SAMPLE: 1264907

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	30	31.5	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1264908 1264909

Parameter	Units	30217235005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	16.0	20	20	29.5	31.0	67	75	85-115	5	20	ML

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA	Pace Analytical Services - Greensburg

WORKORDER QUALIFIERS

WO: 30217235

[1]	The samples were subcontracted to Pace Analytical Energy Services Inc., 220 William Pitt Way, Pittsburgh, PA 15238 for Methane, Ethane, Ethene, CO2, analysis. The results of this analysis are reported on the Microseeps, Inc. data tables attached

ANALYTE QUALIFIERS

H1	Analysis conducted outside the EPA method holding time.
H3	Sample was received or analysis requested beyond the recognized method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MH	Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.
ML	Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.
R1	RPD value was outside control limits.
ip	Benzo(b)fluoranthene and benzo(k)fluoranthene were separated in the check standard but did not meet the resolution criteria in SW846 Method 8270D. Whereas sample results included are reported as individual isomers, the lab and the customer must recognize them as an isomeric pair.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30217235001	**MW-4-0417**	EPA 3005A	256792	EPA 6010C	256865
30217235002	**MW-7-0417**	EPA 3005A	256792	EPA 6010C	256865
30217235003	**MW-10-0417**	EPA 3005A	256792	EPA 6010C	256865
30217235004	**MW-12-0417**	EPA 3005A	256792	EPA 6010C	256865
30217235005	**MW-13-0417**	EPA 3005A	256792	EPA 6010C	256865
30217235006	**MW-14-0417**	EPA 3005A	256792	EPA 6010C	256865
30217235007	**MW-15-0417**	EPA 3005A	256792	EPA 6010C	256865
30217235008	**MW-16-0417**	EPA 3005A	256792	EPA 6010C	256865
30217235009	**MW-13-Matrix Spike-0417**	EPA 3005A	256792	EPA 6010C	256865
30217235010	**MW-13-Duplicate Matrix Spike**	EPA 3005A	256792	EPA 6010C	256865
30217235011	**Field Blank-0417**	EPA 3005A	256792	EPA 6010C	256865
30217235001	**MW-4-0417**	EPA 3510C	257041	EPA 8270D by SIM	257226
30217235002	**MW-7-0417**	EPA 3510C	257041	EPA 8270D by SIM	257226
30217235003	**MW-10-0417**	EPA 3510C	257041	EPA 8270D by SIM	257226
30217235004	**MW-12-0417**	EPA 3510C	257041	EPA 8270D by SIM	257226
30217235005	**MW-13-0417**	EPA 3510C	257041	EPA 8270D by SIM	257226
30217235006	**MW-14-0417**	EPA 3510C	257041	EPA 8270D by SIM	257226
30217235007	**MW-15-0417**	EPA 3510C	257041	EPA 8270D by SIM	257226
30217235008	**MW-16-0417**	EPA 3510C	257041	EPA 8270D by SIM	257226
30217235009	**MW-13-Matrix Spike-0417**	EPA 3510C	257041	EPA 8270D by SIM	257226
30217235010	**MW-13-Duplicate Matrix Spike**	EPA 3510C	257041	EPA 8270D by SIM	257226
30217235011	**Field Blank-0417**	EPA 3510C	257041	EPA 8270D by SIM	257226
30217235001	**MW-4-0417**	EPA 8260C	256945		
30217235002	**MW-7-0417**	EPA 8260C	256945		
30217235003	**MW-10-0417**	EPA 8260C	256945		
30217235004	**MW-12-0417**	EPA 8260C	256945		
30217235005	**MW-13-0417**	EPA 8260C	256945		
30217235006	**MW-14-0417**	EPA 8260C	256945		
30217235007	**MW-15-0417**	EPA 8260C	256945		
30217235008	**MW-16-0417**	EPA 8260C	256945		
30217235009	**MW-13-Matrix Spike-0417**	EPA 8260C	256945		
30217235010	**MW-13-Duplicate Matrix Spike**	EPA 8260C	256945		
30217235011	**Field Blank-0417**	EPA 8260C	256945		
30217235001	**MW-4-0417**	SM2320B-97	257303		
30217235002	**MW-7-0417**	SM2320B-97	257303		
30217235003	**MW-10-0417**	SM2320B-97	257303		
30217235004	**MW-12-0417**	SM2320B-97	257303		
30217235005	**MW-13-0417**	SM2320B-97	257303		
30217235006	**MW-14-0417**	SM2320B-97	257303		
30217235007	**MW-15-0417**	SM2320B-97	257303		
30217235008	**MW-16-0417**	SM2320B-97	257303		
30217235009	**MW-13-Matrix Spike-0417**	SM2320B-97	257303		
30217235010	**MW-13-Duplicate Matrix Spike**	SM2320B-97	257303		
30217235011	**Field Blank-0417**	SM2320B-97	257303		
30217235001	**MW-4-0417**	SM3500-FeD-00	256711		
30217235002	**MW-7-0417**	SM3500-FeD-00	256711		
30217235003	**MW-10-0417**	SM3500-FeD-00	256711		

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30217235004	**MW-12-0417**	SM3500-FeD-00	256711		
30217235005	**MW-13-0417**	SM3500-FeD-00	257162		
30217235006	**MW-14-0417**	SM3500-FeD-00	256711		
30217235007	**MW-15-0417**	SM3500-FeD-00	256711		
30217235008	**MW-16-0417**	SM3500-FeD-00	256711		
30217235009	**MW-13-Matrix Spike-0417**	SM3500-FeD-00	257162		
30217235010	**MW-13-Duplicate Matrix Spike**	SM3500-FeD-00	257162		
30217235011	**Field Blank-0417**	SM3500-FeD-00	256711		
30217235001	**MW-4-0417**	SM4500S2F-00	256834		
30217235002	**MW-7-0417**	SM4500S2F-00	256834		
30217235003	**MW-10-0417**	SM4500S2F-00	256834		
30217235004	**MW-12-0417**	SM4500S2F-00	256834		
30217235005	**MW-13-0417**	SM4500S2F-00	256834		
30217235006	**MW-14-0417**	SM4500S2F-00	256834		
30217235007	**MW-15-0417**	SM4500S2F-00	256834		
30217235008	**MW-16-0417**	SM4500S2F-00	256834		
30217235009	**MW-13-Matrix Spike-0417**	SM4500S2F-00	256834		
30217235010	**MW-13-Duplicate Matrix Spike**	SM4500S2F-00	256834		
30217235011	**Field Blank-0417**	SM4500S2F-00	256834		
30217235001	**MW-4-0417**	EPA 351.2	257087	EPA 351.2	257164
30217235002	**MW-7-0417**	EPA 351.2	257087	EPA 351.2	257164
30217235003	**MW-10-0417**	EPA 351.2	257087	EPA 351.2	257164
30217235004	**MW-12-0417**	EPA 351.2	257087	EPA 351.2	257164
30217235005	**MW-13-0417**	EPA 351.2	257087	EPA 351.2	257164
30217235006	**MW-14-0417**	EPA 351.2	257087	EPA 351.2	257164
30217235007	**MW-15-0417**	EPA 351.2	257087	EPA 351.2	257164
30217235008	**MW-16-0417**	EPA 351.2	257087	EPA 351.2	257164
30217235009	**MW-13-Matrix Spike-0417**	EPA 351.2	257087	EPA 351.2	257164
30217235010	**MW-13-Duplicate Matrix Spike**	EPA 351.2	257087	EPA 351.2	257164
30217235011	**Field Blank-0417**	EPA 351.2	257087	EPA 351.2	257164
30217235001	**MW-4-0417**	SM4500ClE-97	256749		
30217235002	**MW-7-0417**	SM4500ClE-97	256749		
30217235003	**MW-10-0417**	SM4500ClE-97	256749		
30217235004	**MW-12-0417**	SM4500ClE-97	256749		
30217235005	**MW-13-0417**	SM4500ClE-97	256749		
30217235006	**MW-14-0417**	SM4500ClE-97	256749		
30217235007	**MW-15-0417**	SM4500ClE-97	256749		
30217235008	**MW-16-0417**	SM4500ClE-97	256749		
30217235009	**MW-13-Matrix Spike-0417**	SM4500ClE-97	256749		
30217235010	**MW-13-Duplicate Matrix Spike**	SM4500ClE-97	256749		
30217235011	**Field Blank-0417**	SM4500ClE-97	256749		
30217235001	**MW-4-0417**	SM4500NO3F-00	256746		
30217235002	**MW-7-0417**	SM4500NO3F-00	256746		
30217235003	**MW-10-0417**	SM4500NO3F-00	256746		
30217235004	**MW-12-0417**	SM4500NO3F-00	256746		

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: National Grid-Johnstown, NY
Pace Project No.: 30217235

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30217235005	**MW-13-0417**	SM4500NO3F-00	256746		
30217235006	**MW-14-0417**	SM4500NO3F-00	256746		
30217235007	**MW-15-0417**	SM4500NO3F-00	256746		
30217235008	**MW-16-0417**	SM4500NO3F-00	256746		
30217235009	**MW-13-Matrix Spike-0417**	SM4500NO3F-00	256746		
30217235010	**MW-13-Duplicate Matrix Spike**	SM4500NO3F-00	256746		
30217235011	**Field Blank-0417**	SM4500NO3F-00	256746		
30217235001	**MW-4-0417**	EPA 9012B	257286	EPA 9012B	257363
30217235002	**MW-7-0417**	EPA 9012B	257286	EPA 9012B	257363
30217235003	**MW-10-0417**	EPA 9012B	257286	EPA 9012B	257363
30217235004	**MW-12-0417**	EPA 9012B	257286	EPA 9012B	257363
30217235005	**MW-13-0417**	EPA 9012B	257286	EPA 9012B	257363
30217235006	**MW-14-0417**	EPA 9012B	257286	EPA 9012B	257363
30217235007	**MW-15-0417**	EPA 9012B	257286	EPA 9012B	257363
30217235008	**MW-16-0417**	EPA 9012B	257286	EPA 9012B	257363
30217235009	**MW-13-Matrix Spike-0417**	EPA 9012B	257286	EPA 9012B	257363
30217235010	**MW-13-Duplicate Matrix Spike**	EPA 9012B	257286	EPA 9012B	257363
30217235011	**Field Blank-0417**	EPA 9012B	257286	EPA 9012B	257363
30217235001	**MW-4-0417**	ASTM D516-11	256803		
30217235002	**MW-7-0417**	ASTM D516-11	256803		
30217235003	**MW-10-0417**	ASTM D516-11	256803		
30217235004	**MW-12-0417**	ASTM D516-11	256803		
30217235005	**MW-13-0417**	ASTM D516-11	256803		
30217235006	**MW-14-0417**	ASTM D516-11	256803		
30217235007	**MW-15-0417**	ASTM D516-11	256803		
30217235008	**MW-16-0417**	ASTM D516-11	256803		
30217235009	**MW-13-Matrix Spike-0417**	ASTM D516-11	256803		
30217235010	**MW-13-Duplicate Matrix Spike**	ASTM D516-11	256803		
30217235011	**Field Blank-0417**	ASTM D516-11	256803		

Pace Analytical
www.pacelabs.com

WO#: 30217235

Document
leted accurately.

Section A
Required Client Information:

Company: GES - Syracuse	
Address: 5 Technology Place, Suite 4	
East Syracuse, New York 13057	
Email To: mboorady@gesonline.com	
Phone: 800.220.3069 x4065	Fax: None
Requested Due Date/TAT: Standard	

Section B
Required Project Information:

Report To: Mark Boorady (GES) mboorady@gesonline.com	
Purchase Order No.:	
Project Name: National Grid - 109 North Market Street, Johnstown NY	
Project Number: 06-02882-120950-160-1106	

Section C
Invoice Information:

Attention: Accounts Payable via email at [illegible]s-invoices@g[illegible]online.com	
Company Name: Groundwater & Environmental Services, Inc.	
Address: 5 Technology Place, Suite 4, East Syracuse, NY 13057	
Pace Quote Reference:	
Pace Project Manager: Rachel Christner	
Pace Profile #:	

Page: 1 of 1

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER_____

SITE LOCATION: GA IL IN MI NC OH SC WI OTHER____

Section D **Required** Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Samples IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G+GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED GRAB DATE	COLLECTED GRAB TIME	SAMPLE TEMP AT COLLECTION	#OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	NaOH and Zn Acetate	Benzylkonium Chloride	Methane/Ethane/Ethene/Carbon Dioxide by RSK-175	SVOC's PAH's by Method 8270	Total Kjeldahl Nitrogen by EPA Method 351.2 (Low Level)	Metals (Lead and Manganese) by EPA Method 6010	VOC's BTEX by Method 8260C	Ferrous Iron by SM 3500 Fe D. Chloride by SM 4500 Cl E	Total Alkalinity by EPA Method 310.2	Total Cyanide by EPA Method 9012B	Nitrate and Nitrite by EPA Method 353.2, Sulfide by EPA Method 376.1, and Sulfate by EPA Method 375.4	Pace Project Number Lab I.D.
1	MW-4-0417	WT	G			4/26/17	09:40		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		001
2	MW-7-0417	WT	G				13:30		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		002
3	MW-10-0417	WT	G				12:20		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		003
4	MW-11-0417	WT	G						12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		
5	MW-12-0417	WT	G				11:40		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		004
6	MW-13-0417	WT	G				09:25		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		005
6	MW-14-0417	WT	G				12:00		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		006
7	MW-15-0417	WT	G				11:40		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		007
8	MW-16-0417	WT	G				13:00		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		008
9	MW-13-Matrix Spike- 0417	WT	G				09:40		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		009
10	MW-13-Duplicate Matrix Spike - 0417	WT	G				09:55		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		010
11	Field Duplicate - 0417	WT	G				12:15		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		011
12	Trip Blank	WT	Lab						3				3									3					BM 4-27-17 012

Requested Analysis:

Additional Comments:

SAMPLES WILL ARRIVE IN [#] COOLERS.

Please send reports to: rsickler@gesonline.com, Syracuselabs@gesonline.com, ges@equisonline.com

SPECIFIC EDD NAME:

NGJohnstown-labnumber.28351.EQEDD.zip

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	4/26/17			4-26-17	14:28
	4-26-17	1535	J. Butler (PACE)	4/26/17	15:35
J. Butler (PACE)	4/26/17	16:20	[illegible]	4/27/17	1030

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: [illegible]

SIGNATURE of SAMPLER: [illegible] DATE Signed (MM / DD / YY): 4/26/17

SAMPLE CONDITIONS

Temp in °C	Received on Ice Y/N	Custody Sealed Cooler Y/N	Samples Intact Y/N
	Y/N	Y/N	Y/N
<6	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
SCUR	Y/N	Y/N	Y/N

Sample Condition Upon Receipt Pittsburgh

Pace Analytical

Client Name: GES Project # 30217235

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 714547719005

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no

Thermometer Used Q Type of Ice: (Wet) Blue None

Cooler Temperature Observed Temp 1.5, 1.1, 2.2, 2.3, 1.9 °C Correction Factor: +0.0 °C Final Temp: 1.5, 1.1, 2.2, 2.3, 1.9 °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: JRA 4/27/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:	✓			4.
Sample Labels match COC: -Includes date/time/ID Matrix: WT	✓			5.
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):	✓			7.
Rush Turn Around Time Requested:	✓	X BM		8. 4-27-17
Sufficient Volume:	✓			9.
Correct Containers Used: -Pace Containers Used:	✓ ✓			10.
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Organic Samples checked for dechlorination:	✓			13.
Filtered volume received for Dissolved tests			✓	14.
All containers have been checked for preservation. All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, Phenolics	✓ ✓			15. Initial when completed: JRA Date/time of preservation: Lot # of added preservative:
Headspace in VOA Vials (>6mm):		✓		16.
Trip Blank Present:		✓		17.
Trip Blank Custody Seals Present			✓	
Rad Aqueous Samples Screened > 0.5 mrem/hr			✓	Initial when completed: Date:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: No TB received

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

May 11, 2017

Rachel Christner
Pace Analytical Services, Inc.
1638 Roseytown Road
Suites 2,3,4
Greensburg, PA 15601
USA

RE: **30217235**

Pace Workorder: 22475

Dear Rachel Christner:

Enclosed are the analytical results for sample(s) received by the laboratory on Monday, May 01, 2017. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Ruth Welsh 05/11/2017
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 25

CERTIFICATE OF ANALYSIS

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 22475 30217235

Lab ID	Sample ID	Matrix	Date Collected	Date Received
224750001	30217235001	Water	4/26/2017 09:40	5/1/2017 14:10
224750002	30217235002	Water	4/26/2017 13:30	5/1/2017 14:10
224750003	30217235003	Water	4/26/2017 12:20	5/1/2017 14:10
224750004	30217235004	Water	4/26/2017 11:00	5/1/2017 14:10
224750005	30217235005	Water	4/26/2017 09:25	5/1/2017 14:10
224750006	30217235006	Water	4/26/2017 12:00	5/1/2017 14:10
224750007	30217235007	Water	4/26/2017 11:00	5/1/2017 14:10
224750008	30217235008	Water	4/26/2017 13:00	5/1/2017 14:10
224750009	30217235009	Water	4/26/2017 09:40	5/1/2017 14:10
224750010	30217235010	Water	4/26/2017 09:55	5/1/2017 14:10
224750011	30217235011	Water	4/26/2017 12:15	5/1/2017 14:10

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 22475 30217235

Workorder Comments

The samples 22475 (0001-0011) were collected in an alternate container type, than that assigned to PAES method RSK175. Sample container was BAK preserved.

Only one vial was provided for analysis of method RSK175. In order to assure accurate reporting of all analytes, the equilibrated headspace was transferred to a headspace vial. Results reported at dilution for samples 22475 (0001-0011).

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 22475 30217235

Lab ID: **224750001** Date Received: 5/1/2017 14:10 Matrix: Water

Sample ID: **30217235001** Date Collected: 4/26/2017 09:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Carbon Dioxide	**48**	mg/l	5.0	0.45	1	5/9/2017 08:12	BW	n
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	**0.47J**	ug/l	2.5	0.095	5	5/3/2017 10:35	AK	d
Ethane	**0.025U**	ug/l	1.0	0.025	5	5/3/2017 10:35	AK	d
Ethene	**0.035U**	ug/l	1.0	0.035	5	5/3/2017 10:35	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 22475 30217235

Lab ID: **224750002** Date Received: 5/1/2017 14:10 Matrix: Water

Sample ID: **30217235002** Date Collected: 4/26/2017 13:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Carbon Dioxide	**43**	mg/l	5.0	0.45	1	5/9/2017 08:22	BW	n
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	**240**	ug/l	2.5	0.095	5	5/3/2017 10:46	AK	d
Ethane	**0.86J**	ug/l	1.0	0.025	5	5/3/2017 10:46	AK	d
Ethene	**0.090J**	ug/l	1.0	0.035	5	5/3/2017 10:46	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 22475 30217235

Lab ID: **224750003** Date Received: 5/1/2017 14:10 Matrix: Water

Sample ID: **30217235003** Date Collected: 4/26/2017 12:20

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Carbon Dioxide	**56**	mg/l	5.0	0.45	1	5/9/2017 08:32	BW	n
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	**300**	ug/l	2.5	0.095	5	5/3/2017 10:56	AK	d
Ethane	**0.33J**	ug/l	1.0	0.025	5	5/3/2017 10:56	AK	d
Ethene	**0.12J**	ug/l	1.0	0.035	5	5/3/2017 10:56	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 22475 30217235

Lab ID: **224750004** Date Received: 5/1/2017 14:10 Matrix: Water

Sample ID: **30217235004** Date Collected: 4/26/2017 11:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Carbon Dioxide	**74**	mg/l	5.0	0.45	1	5/9/2017 08:45	BW	n
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	**0.24J**	ug/l	2.5	0.095	5	5/3/2017 11:33	AK	d
Ethane	**0.025U**	ug/l	1.0	0.025	5	5/3/2017 11:33	AK	d
Ethene	**0.035U**	ug/l	1.0	0.035	5	5/3/2017 11:33	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 22475 30217235

Lab ID: **224750005** Date Received: 5/1/2017 14:10 Matrix: Water

Sample ID: **30217235005** Date Collected: 4/26/2017 09:25

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Carbon Dioxide	**6.1**	mg/l	5.0	0.45	1	5/9/2017 08:55	BW	n
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	**0.34J**	ug/l	2.5	0.095	5	5/3/2017 11:44	AK	d
Ethane	**0.025U**	ug/l	1.0	0.025	5	5/3/2017 11:44	AK	d
Ethene	**0.035U**	ug/l	1.0	0.035	5	5/3/2017 11:44	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 22475 30217235

Lab ID: **224750006** Date Received: 5/1/2017 14:10 Matrix: Water

Sample ID: **30217235006** Date Collected: 4/26/2017 12:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Carbon Dioxide	**15**	mg/l	5.0	0.45	1	5/9/2017 09:12	BW	n
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	**19**	ug/l	2.5	0.095	5	5/3/2017 11:55	AK	d
Ethane	**0.025U**	ug/l	1.0	0.025	5	5/3/2017 11:55	AK	d
Ethene	**0.035U**	ug/l	1.0	0.035	5	5/3/2017 11:55	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 22475 30217235

Lab ID: **224750007** Date Received: 5/1/2017 14:10 Matrix: Water

Sample ID: **30217235007** Date Collected: 4/26/2017 11:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Carbon Dioxide	**79**	mg/l	5.0	0.45	1	5/9/2017 09:23	BW	n
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	**1900**	ug/l	10	0.38	20	5/10/2017 09:54	AK	d,B
Ethane	**3.2**	ug/l	1.0	0.025	5	5/3/2017 12:05	AK	d
Ethene	**0.037J**	ug/l	1.0	0.035	5	5/3/2017 12:05	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 22475 30217235

Lab ID: **224750008** Date Received: 5/1/2017 14:10 Matrix: Water

Sample ID: **30217235008** Date Collected: 4/26/2017 13:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Carbon Dioxide	**45**	mg/l	5.0	0.45	1	5/9/2017 09:34	BW	n
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	**180**	ug/l	2.5	0.095	5	5/3/2017 12:15	AK	d
Ethane	**0.15J**	ug/l	1.0	0.025	5	5/3/2017 12:15	AK	d
Ethene	**0.036J**	ug/l	1.0	0.035	5	5/3/2017 12:15	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 22475 30217235

Lab ID: **224750009** Date Received: 5/1/2017 14:10 Matrix: Water

Sample ID: **30217235009** Date Collected: 4/26/2017 09:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Carbon Dioxide	**6.3**	mg/l	5.0	0.45	1	5/9/2017 09:44	BW	n
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	**18**	ug/l	2.5	0.095	5	5/3/2017 12:25	AK	d
Ethane	**0.068J**	ug/l	1.0	0.025	5	5/3/2017 12:25	AK	d
Ethene	**0.084J**	ug/l	1.0	0.035	5	5/3/2017 12:25	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 22475 30217235

Lab ID: **224750010** Date Received: 5/1/2017 14:10 Matrix: Water

Sample ID: **30217235010** Date Collected: 4/26/2017 09:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Carbon Dioxide	**6.4**	mg/l	5.0	0.45	1	5/9/2017 09:54	BW	n
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	**16**	ug/l	2.5	0.095	5	5/3/2017 12:43	AK	d
Ethane	**0.088J**	ug/l	1.0	0.025	5	5/3/2017 12:43	AK	d
Ethene	**0.074J**	ug/l	1.0	0.035	5	5/3/2017 12:43	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 22475 30217235

Lab ID: **224750011** Date Received: 5/1/2017 14:10 Matrix: Water

Sample ID: **30217235011** Date Collected: 4/26/2017 12:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Carbon Dioxide	**13**	mg/l	5.0	0.45	1	5/9/2017 10:08	BW	n
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	**17**	ug/l	2.5	0.095	5	5/3/2017 12:53	AK	d
Ethane	**0.025U**	ug/l	1.0	0.025	5	5/3/2017 12:53	AK	d
Ethene	**0.035U**	ug/l	1.0	0.035	5	5/3/2017 12:53	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 22475 30217235

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.
B	The analyte was detected in the associated blank.
d	The analyte concentration was determined from a dilution.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 22475 30217235

QC Batch: DISG/6086 Analysis Method: EPA RSK175

QC Batch Method: EPA RSK175

Associated Lab Samples: 224750001, 224750002, 224750003, 224750004, 224750005, 224750006, 224750007, 224750008, 224750009, 224750010, 224750011

METHOD BLANK: 48543

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	0.019U	0.019	
Ethane	ug/l	0.0050U	0.0050	
Ethene	ug/l	0.0070U	0.0070	

LABORATORY CONTROL SAMPLE & LCSD: 48544 48545

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	44	43	43	97	98	85-115	1	20	
Ethane	ug/l	83	81	81	97	97	85-115	0	20	
Ethene	ug/l	78	76	77	98	99	85-115	1	20	

SAMPLE DUPLICATE: 48553 Original: 224600001

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK						
Methane	ug/l	1.1	1.2	10	20	
Ethane	ug/l	0	0	0	20	
Ethene	ug/l	0	0	0	20	

SAMPLE DUPLICATE: 48554 Original: 224590001

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK						
Methane	ug/l	0.16	0.15	2.9	20	d
Ethane	ug/l	0	0	0	20	d
Ethene	ug/l	0	0	0	20	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 22475 30217235

QC Batch: DISG/6094 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 224750001, 224750002, 224750003, 224750004, 224750005, 224750006, 224750007, 224750008, 224750009, 224750010, 224750011

METHOD BLANK: 48638

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	0.45U	0.45	n

LABORATORY CONTROL SAMPLE & LCSD: 48640 48642

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	110	110	96	96	80-120	0	20	n

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 22475 30217235

QC Batch: DISG/6100 Analysis Method: EPA RSK175

QC Batch Method: EPA RSK175

Associated Lab Samples: 224750007

METHOD BLANK: 48690

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	0.020J	0.019	B

LABORATORY CONTROL SAMPLE & LCSD: 48691 48692

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	44	47	47	105	106	85-115	0.95	20	B

SAMPLE DUPLICATE: 48693 Original: 224620003

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK						
Methane	ug/l	1700	1800	7	20	d,B

SAMPLE DUPLICATE: 48694 Original: 224840004

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK						
Methane	ug/l	540	560	4.7	20	d,B

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 22475 30217235

QUALITY CONTROL PARAMETER QUALIFIERS

B	The analyte was detected in the associated blank.
d	The analyte concentration was determined from a dilution.
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 22475 30217235

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
224750001	30217235001			EPA RSK175	DISG/6086
224750002	30217235002			EPA RSK175	DISG/6086
224750003	30217235003			EPA RSK175	DISG/6086
224750004	30217235004			EPA RSK175	DISG/6086
224750005	30217235005			EPA RSK175	DISG/6086
224750006	30217235006			EPA RSK175	DISG/6086
224750007	30217235007			EPA RSK175	DISG/6086
224750008	30217235008			EPA RSK175	DISG/6086
224750009	30217235009			EPA RSK175	DISG/6086
224750010	30217235010			EPA RSK175	DISG/6086
224750011	30217235011			EPA RSK175	DISG/6086
224750001	30217235001			AM20GAX	DISG/6094
224750002	30217235002			AM20GAX	DISG/6094
224750003	30217235003			AM20GAX	DISG/6094
224750004	30217235004			AM20GAX	DISG/6094
224750005	30217235005			AM20GAX	DISG/6094
224750006	30217235006			AM20GAX	DISG/6094
224750007	30217235007			AM20GAX	DISG/6094
224750008	30217235008			AM20GAX	DISG/6094
224750009	30217235009			AM20GAX	DISG/6094
224750010	30217235010			AM20GAX	DISG/6094
224750011	30217235011			AM20GAX	DISG/6094
224750007	30217235007			EPA RSK175	DISG/6100

Chain of Custody

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Road
Suites 2,3, & 4
Greensburg, PA 15601
Phone: (724) 850-5600
FAX: (724) 850-5601

Sample Condition upon Receipt: (Please record the following information)		
Temp in C		
Received on Ice	Yes	No
Sealed Cooler	Yes	No
Samples Intact	Yes	No

Subcontractor Project No.: 22475
P.O. No: ASR- 30217235

Request Date: 4/28/17 Analysis Due Date: 5/4/2017
Shipped By: Courier

Certification Required: NY

Pace Project No.: 30217235
Report/Invoice to: RACHEL CHRISTNER

	Pace Sample ID:	Matrix:	Collection Date:	Time:	Analysis Requested:	Analytical Method:	Preservative Type:
1	30217235001	WT	4/26/17	9:40	Methane, Ethane, Ethene, CO2 NY L-2 PKG	RSK 175	BAK
2	30217235002	WT	4/26/17	13:30	Methane, Ethane, Ethene, CO2 NY L-2 PKG	RSK 175	BAK
3	30217235003	WT	4/26/17	12:20	Methane, Ethane, Ethene, CO2 NY L-2 PKG	RSK 175	BAK
4	30217235004	WT	4/26/17	11:00	Methane, Ethane, Ethene, CO2 NY L-2 PKG	RSK 175	BAK
5	30217235005	WT	4/26/17	9:25	Methane, Ethane, Ethene, CO2 NY L-2 PKG	RSK 175	BAK
6	30217235006	WT	4/26/17	12:00	Methane, Ethane, Ethene, CO2 NY L-2 PKG	RSK 175	BAK
7	30217235007	WT	4/26/17	11:00	Methane, Ethane, Ethene, CO2 NY L-2 PKG	RSK 175	BAK
8	30217235008	WT	4/26/17	13:00	Methane, Ethane, Ethene, CO2 NY L-2 PKG	RSK 175	BAK
9	30217235009	WT	4/26/17	9:40	Methane, Ethane, Ethene, CO2 NY L-2 PKG	RSK 175	BAK
10	30217235010	WT	4/26/17	9:55	Methane, Ethane, Ethene, CO2 NY L-2 PKG	RSK 175	BAK
11	30217235011	WT	4/26/17	12:15	Methane, Ethane, Ethene, CO2 NY L-2 PKG	RSK 175	BAK
12							

Special Requirements:

****Please supply a method blank and LCS QC information on the final report****
*****NY Level 2 PKG

Subcontract Lab: Pace Analytical Energy Services PA (Microsee
Address: 220 William Pitt Way
Pittsburgh, PA 15238
Phone: 412-826-5245

Analysis Authorized By: Rachel D Christner Project Manager
Pace Agent Name Title

Acceptance of Terms By:
Subcontract Lab Agent Title

Relinquished By:
(Signature & Affiliation) (Date) (Time)

Relinquished By:
(Signature & Affiliation) (Date) (Time)

Received By: KDR PAES 5.1.17 1410
(Signature & Affiliation) (Date) (Time)

Received By:
(Signature & Affiliation) (Date) (Time)

Comments:

In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

C:\Scanfiles\30217235 ASR PAES.xls]

Cooler Receipt Form

Client Name: Pace - G Project: 30217235 Lab Work Order: 22475

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS (Client) Other:_____ Air bill Present: Yes No

Tracking Number:_____

Custody Seal on Cooler/Box Present: Yes (No) Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam (Other)_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 1.1°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓	✓		
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)		✓		
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: LS Date: 5.1.17

Project Manager Review: JEM Date: 5/1/17

Sub Lab : Pace - Energy.
Pace Courier

Pace Analytical Services, LLC– Pittsburgh Laboratory

Subcontracting Directions

22475

Project Number: 30217235

Project Manager: Rachel.

Date : 4/28

Sample ID	Matrix	Send Whole Jar (size/type)	Split / Pour Off from this jar:	Volume to Send (if split off)
001	WT	2x D69B → BAK vials.		
↓	↓	↓		
011	↓	↓		

Received By: Lauren McGrath Date & Time: 5/1/17

PM Review: Rachel Christner Date: 4/28/17

NON-CONFORMANCE FORM

PAES Work Order #: 22475

Date: 5.1.17 Time of Receipt: 14:10 Receiver: CS

Client: Pace

REASON FOR NON-CONFORMANCE:

1. Requested RSK175 on CO_2 also Samples were in BAK vials for MEE RSK175
2. COC was not relinquished by the Client.

ACTION TAKEN:

Client name: Pace Date: 5/1/17 Time: 15:48

Approved to continue with analyses

Customer Service Initials: JEM Date: 5/1/17

F-PAE-Q-014-rev.00, 20 Nov2014