nationalgrid

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

January 5, 2015

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 (October 2014)

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 October 13-14, 2014 groundwater monitoring results.

Please contact me at (315) 428-5652 or steven.stucker@us.ngrid.com if you have any questions regarding the report.

Sincerely,

Matthew D. Millias for SPS

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

Environmental Department, 300 Erie Boulevard West, Syracuse, New York 13202
T: (315) 428-5652 ■ F: (315) 460-9670 ■ steven.stucker@us.ngrid.com ■ www.nationalgrid.com

Cc: John Parkinson-National Grid
Nathan Freeman- NYSDOH
Matt Millias- CDM Smith

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

October 2014 Sampling Event

Prepared For:

nationalgrid

300 Erie Boulevard West
Syracuse, NY 13202

Prepared By:

CDM Smith
6800 Old Collamer Road Suite 3
East Syracuse, New York 13057

TABLE OF CONTENTS

1.0 INTRODUCTION

This Semi-Annual Groundwater Monitoring Report summarizes the results of October 2014 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 It was superseded by a new Order on Consent (Index Number A4-0473-0000), dated November 7, 2003.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 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 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 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 approval by NYSDEC is predicated on the pending filing of an environmental easement by National Grid. The SMP was approved by NYSDEC on 12/2/11 and included a Groundwater Monitoring Program.

SMP modifications were approved by NYSDEC in their 7/5/12 letter to National Grid which included:
1) The groundwater monitoring frequency has been reduced from quarterly to semi-annually (May & October);
2) MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16 will continue to be sampled. MW – 8 and MW-9 will be decommissioned in accordance with the Dept.'s CP-43 policy; and
3) RMW-1 will be monitored semi-annually and documented in the semi-annual report.

1.1 PURPOSE AND OBJECTIVE

The purpose of this Report is to summarize the 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 decrease, and continue to assess the effectiveness of monitored natural attenuation (MNA).

1.2 REPORT ORGANIZATION

This Report is organized in to the following six sections. Section 1.0 presents the purpose and objectives of this program. Section 2.0 provides the history, environmental setting and location of the Site. Section 3.0 provides a description of the approach used to collect and analyze groundwater samples at the Site. Section 4.0 presents the physical and chemical analytical data collected, and Section 5.0 presents the conclusions and recommended approach for further monitoring at the Site. References for the Report are located in Section 6.0.

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 approximately 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 goes 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). In 1861, the plant was improved with the addition of a coal shed and 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 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 western small gas holder (Holder #2) in the middle 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 then conducted at the Site in 1998, which was followed by a RI (January 2000) and subsequent remedial measures. Remedial measures are discussed separately below in 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 Report.

Remedial Measures Completed

Several interim remedial measures (IRMs) were performed to address the MGP impacts. In 2002 and 2003, the former holders and associated impacts 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 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 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 ground surface gradually slopes from south to north, becoming increasingly steep 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 underneath 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) range in thickness up to 13 ft. on the Site 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 soils consist 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) ranges, 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 gas holders. The groundwater flow is consistent with regional groundwater flow direction. This groundwater flow direction and hydraulic gradients calculated during this monitoring period are also generally consistent with 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: 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 two locations: SG-1 and SG-2.
- 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 NAPL.

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 October 2013 as well as previous events. Appendix A also presents the field documentation from the October 2013 water gauging event.

No product was present in RW-1 or the other nine groundwater monitoring wells.

A surface water level measurement was collected from the Cayadutta Creek using a water level probe (at the bridge; Gauging Point #1).

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). A 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, 9 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 matrix spike duplicate (MSD) 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.

Dissolved oxygen 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 dissolved oxygen (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 dissolved oxygen, 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 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, PAHs, lead, total cyanide, and 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 favorable to natural attenuation 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 DUSR

Groundwater analytical results were compared with levels specified in 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 from monitoring wells MW-10, MW-11, MW-13, MW-14, 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) since the June 2010 event. The highest concentrations were observed in the groundwater samples collected from MW-13, MW-15 and MW-16. MW-13

typically had the highest total BTEX concentrations. MW-15 is located generally downgradient of the former gas holders and of MW-13, while MW-16 is located southwest of the former gas holders and generally upgradient of both MW-13 and MW-15.

PAHs – No PAHs were detected in MW-4 or MW-7. PAH compounds were detected in groundwater samples collected from the other sampled monitoring wells. Naphthalene has consistently exhibited the highest concentration of any PAH.

Lead - Lead exhibited excedances above its respective NYSDEC WQ Value (25 µg/l) in three wells (MW-7, MW-10, and MW-13) since June 2010.

Cyanide - Concentrations of cyanide were detected above its NYSDEC WQ Value (0.2 mg/L) in groundwater samples collected from MW-7, MW-13, MW-14, MW-15, and MW16 since June 2010.

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 MNA/WQ analytical results for all 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 dissolved oxygen 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 dissolved oxygen 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 upgradient 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 during the since June 2010 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 June 2010. The resultant statistical trend analysis for individual monitoring wells suggests (with 80% and 90% confidence) that total BTEX compounds and 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	No trend	No trend	No trend	No trend	No trend
MW-7	No trend	No trend	No trend	No trend	No trend
MW-10[1]	No trend	No trend	No trend	No trend	No trend
MW-11[1]	Decreasing	Decreasing	Decreasing	Decreasing	No trend
MW-12	No trend	No trend	No trend	No trend	No trend
MW-13[1]	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing
MW-14[1]	No trend	Decreasing	No trend	Decreasing	Decreasing
MW-15[1]	No trend	Increasing	No trend	Decreasing	No trend
MW-16[1]	Decreasing	Decreasing	Decreasing	Decreasing	No trend

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

Isoconcentration 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

contours for total BTEX (as compared to the benzene WQ value of 1 µg/L) and naphthalene exceeding the NYSDEC WQ values. The sampling rounds depicted include June 2010, January 2011 and March 2012; which represent seasonality and a snapshot of time trends through that monitoring period. Evaluation of the isoconcentration figures suggests that the contaminant plumes are 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 MW-13, MW-15 and MW-16, while the naphthalene plume (concentrations above the WQ) has decreased to include only MW-13 and MW-15.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

Groundwater Levels

The groundwater elevation data indicates groundwater within the Site, south of the Creek, flows in a downgradient direction from the south to the north, toward Cayadutta Creek. The groundwater flow direction and hydraulic gradients have been consistent during previous gauging events and with data obtained prior to the ROD.

Flow on the north side of the Creek is to the south, towards the Creek. As such, Cayadutta Creek serves as the discharge location for the unconfined hydrostratigraphic unit, north and south of the Creek, and acts as a hydraulic boundary.

Site-Related Constituents

Concentrations of BTEX, PAHs, lead, and cyanide in groundwater samples have been detected at consistent well locations on the Site. The overall concentrations continue to show a slight decreasing trend as compared to historic levels. Based on historic sampling results (as depicted on Table 1 – Groundwater from the ROD), benzene and naphthalene were exhibited in groundwater at concentrations up to 2,600 µg/L and 7,300 µg/L pre-ROD, respectively; with the highest occurrences in the central portion of the Site. These levels are higher than concentrations exhibited during this monitoring period.

The concentrations of BTEX constituents and PAH compounds (and specifically naphthalene) appear to be relatively stable or decreasing as indicated by groundwater concentration trend analysis from on-site monitoring wells. Site institutional controls continue to be effective and will continue to be monitored semi-annually.

Concentrations of benzene are significantly higher than the concentrations of toluene, ethylbenzene, and xylenes at source area monitoring wells MW-13, MW-15 and MW-16. Higher concentrations of benzene relative to the other BTEX compounds may indicate the amount of DO in the subsurface may not be sufficient to completely biodegrade BTEX (Borden, et. al., 1995).

Natural Attenuation

Plume stability at the Site is in 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. Trend analysis data started with the June 2010 sampling event. Generally, the tests suggested that the plume and the related constituents were either stable or decreasing. Based on (1) trend analysis for BTEX and naphthalene and (2) MNA parameter assessment, it is evident that attenuation at the Site is likely geochemically dependent, the source is being removed, and the plume is not migrating or increasing.

4.2 RECOMMENDATIONS

Based on the results of the October 2014 event and previous events, the following recommendations are made:

1. Continue the long-term semi-annual groundwater monitoring program. The next event will be April 2015.

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	12/15/2011		3/15/2012		10/9/2012		4/18/2013		10/7/2013		4/9/2014		10/13/2014	
		Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater 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	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	14.61	644.47
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	14.98	642.61
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	13.71	643.58
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	15.65	644.43
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	15.53	649.36
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	15.02	648.89
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	17.55	644.30
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	10.24	655.33
RW-1						17.98		16.21		15.95		12.32		17.31	
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	20.01	639.96

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	09/29/10	01/04/11	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014
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
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
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
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
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
PAHs														
Acenaphthene	ug/l	20	0.19 U	0.19 U	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
Acenaphthylene	ug/l	NC	0.19 U	0.19 U	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
Anthracene	ug/l	50	0.19 U	0.19 U	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
Benzo(a)anthracene	ug/l	0.002	0.19 U	0.19 U	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
Benzo(a)pyrene	ug/l	0.000	0.19 U	0.19 U	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
Benzo(b)fluoranthene	ug/l	0.002	0.19 U	0.19 U	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
Benzo(g,h,i)perylene	ug/l	NC	0.19 U	0.19 U	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
Benzo(k)fluoranthene	ug/l	0.002	0.19 U	0.19 U	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
Chrysene	ug/l	0.002	0.19 U	0.19 U	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
Dibenzo(a,h)anthracene	ug/l	NC	0.19 U	0.19 U	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
Fluoranthene	ug/l	50	0.19 U	0.19 U	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
Fluorene	ug/l	50	0.19 U	0.19 U	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
Indeno(1,2,3-cd)pyrene	ug/l	0.002	0.19 U	0.19 U	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
Naphthalene	ug/l	10	0.27	0.19 U	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
Phenanthrene	ug/l	50	0.19 U	0.19 U	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
Pyrene	ug/l	50	0.19 U	0.19 U	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
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	5 U
Cyanide	mg/l	0.2	0.01 U	0.01 U	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

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

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

Sample Date / CONSTITUENT	UNITS	09/29/10	01/04/11	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014
MNA/WQ Parameters													
Alkalinity (as CaCO3)	mg/l	385	420	R	R	405 J	431 J	R	405	354	442	398	400
Chloride	mg/l	354	269	265	385 B	288 J	R	228	222	275	411	304	329
Ethane	ug/l	1 U	1 U	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
Ethene	ug/l	1 U	1 U	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
Ferrous Iron	mg/l	0.1 U	0.1 U	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
Manganese	mg/l	NA	10 U	0.64 J	0.45 J	3 U	3.4	3 U	0.0087	3 U	3 U	3 U	3 U
Methane	ug/l	2 U	2 U	1 U	1 U	1 U	1 U	1 U	4 U	4 U	4 U	4 U	4 U
Nitrate	mg/l	NA	2.5	2.7	2.9	2.4	3	3.1	2.2	2.4	3.5	3.6	2.7
Nitrogen	mg/l	0.22	0.25	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
Sulfate	mg/l	NA	49.2	56.7	74.2 B	R	R	56 B	62.2	64.7	74.7	70.7	50.8
Sulfide	mg/l	NA	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	09/29/10	01/04/11	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014
BTEX Compounds														
Benzene	ug/l	1	1 U	1 U	1 U	0.72 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
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
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
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
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
PAHs														
Acenaphthene	ug/l	20	0.075 J	0.19 U	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
Acenaphthylene	ug/l	NC	0.15 J	0.11 J	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
Anthracene	ug/l	50	0.19 U	0.19 U	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
Benzo(a)anthracene	ug/l	0.002	0.19 U	0.19 U	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
Benzo(a)pyrene	ug/l	0.000	0.19 U	0.19 U	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
Benzo(b)fluoranthene	ug/l	0.002	0.19 U	0.19 U	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
Benzo(g,h,i)perylene	ug/l	NC	0.19 U	0.19 U	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
Benzo(k)fluoranthene	ug/l	0.002	0.19 U	0.19 U	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
Chrysene	ug/l	0.002	0.19 U	0.19 U	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
Dibenzo(a,h)anthracene	ug/l	NC	0.19 U	0.19 U	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
Fluoranthene	ug/l	50	0.19 U	0.19 U	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
Fluorene	ug/l	50	0.19 U	0.057 J	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
Indeno(1,2,3-cd)pyrene	ug/l	0.002	0.19 U	0.19 U	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
Naphthalene	ug/l	10	0.43	0.19 U	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
Phenanthrene	ug/l	50	0.19 U	0.19 U	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
Pyrene	ug/l	50	0.19 U	0.038 J	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
Cyanide and Lead														
Lead	ug/l	25	5 U	5 U	5 U	3 U	19	12	3.2 J	19	**33**	7.1	7.1	0.010 U
Cyanide	mg/l	0.2	**0.333**	**0.217**	R	**0.68 J**	**0.986**	R	**0.22**	**5.9**	**1.4**	**0.4**	**0.16**	**0.13**

Notes:
BTEX - Benzene, Ethylbenzene, Toluene and Xylene
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

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

Sample Date		09/30/10	01/04/11	04/07/11	06/15/11	10/12/11	12/14/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014
CONSTITUENT	**UNITS**												
MNA/WQ Parameters													
Alkalinity (as CaCO3)	mg/l	321	330 J	R	R	327 J	370 J	R	310	324	367	375	392
Chloride	mg/l	108	104	122	93.8 B	111 J	R	91.2	101	114	84	79	62.8
Ethane	ug/l	5 U	5 U	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
Ethene	ug/l	5 U	5 U	1.5 U	150 U	1.5 U	75 U	75 U	7.0U	7.0U	7.0U	7.0U	7.0U
Ferrous Iron	mg/l	1.12	0.1 U	R	1.7 J	0.83 J	R	0.1 U	0.37	0.1 U	0.25	6.24	0.1 U
Manganese	mg/l	NA	0.54	0.67	0.62	0.66	0.94	0.51	0.96	1.1	1.1	0.564	0.49
Methane	ug/l	290 J	510	190	210	190	300	210	240	40	23	150	82
Nitrate	mg/l	NA	1 U	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
Nitrogen	mg/l	1.76	1.59	1.4	1.3	1.6	R	1.6	1.6	4.6	1.5	0.16	2
Sulfate	mg/l	NA	576	745 B	611 B	R	R	674 B	509	654	518	540	457
Sulfide	mg/l	NA	1.4 J	1 U	0.8 J	2.8	1 U	1 U	1.2	1.4	1.4	1.4	1

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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	09/29/10	01/04/11	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

Notes:
B - Present in Associated Blank Sample
BTEX - Benzene, Ethylbenzene, Toluene and Xylene
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

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

Sample Date / CONSTITUENT	UNITS	09/29/10	01/04/11	04/06/11	06/14/11	10/11/11	12/14/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014
MNA/WQ Parameters													
Alkalinity (as CaCO3)	mg/l	556	536 J	R	R	523 J	541 J	R	589	584	552	566	548
Chloride	mg/l	344	277	181 B	160 B	156 J	R	147	316	286	265	470	664
Ethane	ug/l	1 U	1 U	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
Ethene	ug/l	1 U	1 U	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
Ferrous Iron	mg/l	0.31	0.2 U	R	0.34 J	0.47	0.1 U	R	0.10 U	0.10 U	0.12	6.06	0.10 U
Manganese	mg/l	NA	1.14	1.2	0.95	0.88	0.58	0.83	1	1.2	0.75	1.07	1.3
Methane	ug/l	64 J	75	34	9.8	33	85	40	72	32	28	110	130
Nitrate	mg/l	NA	1 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
Nitrogen	mg/l	6.02	4.91	8.5	4.9	4.9	R	5.4	5.7	6.1	4.1	4.8	6.2
Sulfate	mg/l	NA	167	306	296 B	R	R	238 B	175	174	171	153	89.7
Sulfide	mg/l	NA	R	R	1 U J	0.8 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

B - Present in Associated Blank Sample
mg/l - Milligrams per liter
NA - Not analyzed
R - Rejected
U - Not Detected
ug/l - Micrograms per liter

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

CONSTITUENT	UNITS	NYSDEC WQ Values	09/29/10	01/04/11	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014
BTEX Compounds														
Benzene	ug/l	1	**27**	**16**	**2.8**	**13**	**18**	**15**	**7.9**	**12**	**3.5**	**8.1**	**10**	**22**
Ethylbenzene	ug/l	5	**7.3**	**7.2**	1.9	**6.9**	**6.1**	**5.5**	3.5	1 U	1.2	3.8	**5.1**	**7.8**
m/p-Xylene	ug/l	5	3	3.9	2.2	**5.3**	2.4	2.1	1.4 J	2 U	2 U	2 U	2 U	2.1
o-Xylene	ug/l	5	2.6	2.7	1.1	3.1	2.0	2.0	1.2	1 U	1 U	1.6	2.1	2.6
Toluene	ug/l	5	1.3	1.3	1 U	1.4	0.97 J	0.99 J	0.69 J	1 U	1 U	1 U	1.1	1.9
PAHs														
Acenaphthene	ug/l	20	**150 D**	**140 D**	**150**	**110**	**120**	**130**	**100**	**140 E**	**97**	**110**	**120**	110
Acenaphthylene	ug/l	NC	280 JD	330 D	290	290	240 D	270 D	210	160 E	120	170	110	150
Anthracene	ug/l	50	21	18	**88**	19 B	19	17	11	23	13	28	13	16
Benzo(a)anthracene	ug/l	0.002	**2.2 J**	**2.2**	**35**	**6.2 B**	**2.7**	**3.0 B**	**5.2 B**	**3.8**	0.002U	**8.3**	**3.2**	4.8
Benzo(a)pyrene	ug/l	0.002	**1.7**	**2.2**	**34**	**5.7 B**	**2.8**	**2.5 B**	**2.3 J**	**2.7**	**3.3**	**8.5**	**2.8**	4.7
Benzo(b)fluoranthene	ug/l	0.002	**0.65 J**	**0.82 J**	**24**	**4.8 B**	**1.9**	**2.1**	**1.8 J**	**1.7**	0.002U	0.002U	0.002U	4.6
Benzo(g,h,i)perylene	ug/l	NC	0.90 J	1.2 J	20	4.0 B	1.4	1.7	1.3 J	1	1	3.4	0.002U	1.8
Benzo(k)fluoranthene	ug/l	0.002	**0.90 J**	**1.1 J**	**12**	**2.5 B**	**1**	**0.78**	**1.2 J**	**1.6**	0.002U	0.002U	0.002U	2.1
Chrysene	ug/l	0.002	**2.8**	**2.9**	**43**	**8.1 B**	**3.3**	**3.5 B**	5.1 U	**3.4**	**4.4**	**10**	**5.4**	7.6
Dibenzo(a,h)anthracene	ug/l	NC	1 U	2.1 U	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
Fluoranthene	ug/l	50	18	14	**96**	22 B	20	16	12	24	14	28	12	16
Fluorene	ug/l	50	**110 D**	**100 D**	**130**	**72**	**79**	**83**	**62**	**92**	**62**	**70**	31	44
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**0.65 J**	**2.1 U**	**13**	**2.8 B**	**0.96**	**1.0 B**	**0.69 J**	**1.6**	0.002U	0.002U	0.002U	1.2
Naphthalene	ug/l	10	**180 D**	**560 D**	**300**	**480**	**310 D**	**230 D**	**140**	**110**	**50**	**87**	10U	51
Phenanthrene	ug/l	50	**160 D**	**150 D**	**260**	**52 B**	**140 D**	**130**	**91**	**170**	**80**	**130**	5.8	62
Pyrene	ug/l	50	26 J	17	**150**	28 B	21	21	16	28	18	34	17	20
Cyanide and Lead														
Lead	ug/l	25	5 U	5 U	**40**	7.6	12	5 U	4.6 J	5 U	5 U	5.9	5U	0.014
Cyanide	mg/l	0.2	0.024	0.027	R	0.015 J	0.021	0.01 UJ	0.012	0.010 U	0.010 U	0.010 U	0.018	0.021

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

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

Sample Date / CONSTITUENT	UNITS	09/29/10	01/04/11	04/07/11	06/15/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014
MNA/WQ Parameters													
Alkalinity (as CaCO3)	mg/l	502	504	R	R	518 J	536 J	R	623	507	573	465	457
Chloride	mg/l	612	606	345	414 B	514 J	R	321	350	202	295	454	364
Ethane	ug/l	10 U	5 U	1.5 U	1.5 U	1.5 U	15 U	15 U	380 U	380 U	380 U	380 U	7.5 U
Ethene	ug/l	10 U	5 U	1.5 U	1.5 U	1.5 U	15 U	15 U	350 U	350 U	350 U	350 U	7.0 U
Ferrous Iron	mg/l	0.2 U	0.5 U	R	9.4 J	0.9 J	R	0.1 U	0.5	0.18	0.22	0.29	0.1U
Manganese	mg/l	NA	0.61	0.94	0.45	0.69	0.66	0.47	0.95	0.95	0.55	0.56	0.56
Methane	ug/l	730 J	420	4.8	68	190	360	160	520	12	25	120	180
Nitrate	mg/l	NA	1 U	0.13	0.05 U	0.05 U	0.05 U	0.092	0.050 U	0.79	0.32	0.32	0.059
Nitrogen	mg/l	1.76	1.36	1.3	0.59	1.3	R	1.3	1.4	0.58	0.64	0.57	1.2
Sulfate	mg/l	NA	46.3	126 B	65.1 B	R	R	8.5 B	16.9	112	94.1	58	44.3
Sulfide	mg/l	NA	1 U	0.8 J	0.8 J	1.6	1 U	1 U	1 U	1 U	1 U	1 U	1.8

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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014
BTEX Compounds											
Benzene	ug/l	1	1 U	1 U	1 U	1 U	**2.1**	1 U	1 U	1 U	1 U
Ethylbenzene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
m/p-Xylene	ug/l	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
o-Xylene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
PAHs											
Acenaphthene	ug/l	20	0.2 U	0.49 U	0.086 J	0.52 U	14	0.2 U	1.1	1.1	0.48 U
Acenaphthylene	ug/l	NC	0.09 J	0.49 U	0.25 J	0.18 J	100	0.2 U	0.2 U	0.2 U	0.63
Anthracene	ug/l	50	0.07 J	0.49 U	0.21 J	0.13 J	2.8	0.2 U	1.1	1.1	0.88
Benzo(a)anthracene	ug/l	0.002	**0.12 J**	0.49 U	0.64 B	**0.57 B**	**1.5**	**0.83**	**3**	**0.66**	1.5
Benzo(a)pyrene	ug/l	0.002	**0.2**	0.49 U	0.69 B	**0.35 J**	**1.5**	**1**	**3.6**	**0.92**	1.8
Benzo(b)fluoranthene	ug/l	0.002	**0.08 J**	0.49 U	0.56	**0.27 J**	**1.3**	**0.91**	**3.4**	**0.71**	2.1
Benzo(g,h,i)perylene	ug/l	NC	0.13 J	0.49 U	0.43 J	0.27 J	0.62	0.49 U	0.49 U	0.51	0.74
Benzo(k)fluoranthene	ug/l	0.002	**0.10 J**	0.49 U	0.49 U	**0.38 J**	**0.58**	0.49 U	**0.83**	0.49 U	0.74
Chrysene	ug/l	0.002	**0.13 J**	0.49 U	0.55 B	**0.60 B**	**1.1**	**1**	**3**	0.49 U	1.6
Dibenzo(a,h)anthracene	ug/l	NC	0.2 U	0.49 U	0.49 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.48 U
Fluoranthene	ug/l	50	0.2	0.49 U	0.73	0.41 J	3.4	1.4	4.3	0.87	2.00
Fluorene	ug/l	50	0.2 U	0.49 U	0.49 U	0.52 U	2.2	0.49 U	0.49 U	0.49 U	0.48 U
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**0.09 J**	0.49 U	0.49 U	**0.13 J**	**0.97**	0.49 U	**1.2**	0.49 U	0.51
Naphthalene	ug/l	10	0.2 U	0.49 U	0.68	0.52 U	160 E	2.5	0.99	0.52 U	1.6
Phenanthrene	ug/l	50	1.9 J	0.49 U	0.66	0.48 J	7.6	1.1	3.6	0.61	2
Pyrene	ug/l	50	0.23	0.49 U	0.95	0.59	4.2	2.4	5.8	1.3	2.8
Cyanide and Lead											
Lead	ug/l	25	5 U	3 U	5 U	5 U	5 U	5 U	**29**	5 U	0.018
Cyanide	mg/l	0.2	0.01	0.004 J	R	0.0062 J	0.010 U	0.010 U	0.010 U	0.010 U	0.013

Notes:

B - Present in Associated Blank Sample

J - Estimated Concentration

NC - No Criteria

U - Not Detected

BTEX - Benzene, Ethylbenzene, Toluene and Xylene

PAHs - Polycyclic Aromatic Hydrocarbons

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

CONSTITUENT	Sample Date / UNITS	01/04/11	10/12/11	12/14/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014
MNA/WQ Parameters										
Alkalinity (as CaCO3)	mg/l	502	455 J	478 J	R	434	391	415	329	414
Chloride	mg/l	488	165 J	R	129 B	468	123	662	150	493
Ethane	ug/l	1 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
Ethene	ug/l	1 U	1.5 U	1.5 U	1.5 U	7 U	7 U	7 U	7 U	7 U
Ferrous Iron	mg/l	0.1 U	R	0.1 U	0.1 U	0.44	0.1 U	0.1 U	0.1 U	0.1 U
Manganese	mg/l	0.084	0.096	0.16	0.12	0.52	0.19	2.1	0.36	1.2
Methane	ug/l	2 U	1 U	1.1	0.56 J	47	1 U	1 U	1 U	4 U
Nitrate	mg/l	4	6.6	6.2	3.2	0.05 U	2.5	4.8	1.4	3.7
Nitrogen	mg/l	0.48	0.2 U	R	0.19 J	0.29	0.24	2.4	0.44	0.61
Sulfate	mg/l	97.9	R	R	53.5 B	81.4	73.5	115	51.6	73.5
Sulfide	mg/l	1.1 J	0.8 J	1 U	1 U	1 U	1 U	1 U	1 U	1 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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	09/29/10	01/04/11	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014
BTEX Compounds														
Benzene	ug/l	1	**430**	**360**	**71**	**200**	**59**	**300**	**370**	**360**	**490**	**400**	**200**	**300**
Ethylbenzene	ug/l	5	**850**	**730**	**87**	**200**	**110**	**520**	**670**	**490**	**600**	**320**	**200**	**340**
m/p-Xylene	ug/l	5	**920**	**810**	**110**	**240**	**140**	**550**	**740**	**590**	**730**	**420**	**250**	**480**
o-Xylene	ug/l	5	**390**	**350**	**71**	**130**	**74**	**260**	**340**	**260**	**320**	**190**	**120**	**210**
Toluene	ug/l	5	**800**	**660**	**80**	**260**	**89**	**550**	**740**	**520 E**	**710**	**440**	**270**	**430**
PAHs														
Acenaphthene	ug/l	20	**120**	**140**	17	**46**	**60**	**76**	**82 J**	**170**	**130**	**77**	**71**	**130**
Acenaphthylene	ug/l	NC	260 JD	320 D	51	170	220 J	230 D	210	570	430	350	22	450
Anthracene	ug/l	50	12	15	3.6	12 B	15	15	97 U	47 U	47 U	47 U	6.9	14
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**
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**
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**
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
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**
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**
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
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
Fluorene	ug/l	50	**73**	**84**	18	48	**52 J**	**53**	37 J	**110**	**93**	**68**	30	**94 J**
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**
Naphthalene	ug/l	10	**6000 D**	**5600 D**	**250 D**	**1600 D**	**2900 D**	**5000 D**	**4100**	**8200**	**7100**	**3700**	10U	**4200**
Phenanthrene	ug/l	50	**58**	**68**	7.2	44 B	**60**	**55**	44 J	**76**	**73**	**61**	50U	**70**
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
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
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**

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

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

Sample Date / CONSTITUENT	UNITS	09/30/10	01/05/11	04/07/11	06/15/11	10/12/11	12/14/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014
MNA/WQ Parameters													
Alkalinity (as CaCO3)	mg/l	80	96.4	R	R	455 J	165 J	R	158	218	187	176	255
Chloride	mg/l	12.3	10.5	29.1	18.6 B	5.9 J	R	20.5	21.6	20.4	7.3	9.2	8.9
Ethane	ug/l	1.4 J	1.8	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
Ethene	ug/l	2.4	2.8	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
Ferrous Iron	mg/l	0.1 U	0.32	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
Manganese	mg/l	NA	0.84	0.12	0.077	0.83	0.16	0.096	0.092	0.11	0.088	0.14	0.14
Methane	ug/l	77 J	110 D	32	46	28 J	72	66	120	36	15	74	68
Nitrate	mg/l	NA	1 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
Nitrogen	mg/l	2.27	1.69	1.1	1.3	2 U	R	1.4	1.4	1.8	1.2	2.1	1.2
Sulfate	mg/l	NA	86.8	5 U	3.3 JB	R	R	52.1 J	139	82.3	15.5	15.5	30.8
Sulfide	mg/l	NA	3.3 J	1 U	3.2 J	1.2	R	R	1.2	1 U	1 U	1 U	1.4

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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	09/29/10	01/04/11	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014
BTEX Compounds														
Benzene	ug/l	1	**25**	**17**	1 U	**2.5**	**11**	**2.5**	**2.9**	1 U	1 U	**1.3**	1 U	**1.7**
Ethylbenzene	ug/l	5	**5.1**	**3.3**	1 U	1 U	1 U	1 U	1.3	1 U	1 U	1 U	1 U	1 U
m/p-Xylene	ug/l	5	**5.1**	**3.1**	2 U	2 U	2 U	2 U	2.4	2 U	2 U	2 U	2 U	2 U
o-Xylene	ug/l	5	**9.1**	**5.6**	1 U	1 U	1 U	1 U	2.2	1 U	1 U	1 U	1 U	1 U
Toluene	ug/l	5	1.8	0.88 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
PAHs														
Acenaphthene	ug/l	20	9.3	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
Acenaphthylene	ug/l	NC	17 JD	11	0.47 U	0.47 U	3	1.3	9	1.9	0.48 U	2.5	0.48 U	2.9
Anthracene	ug/l	50	1.8	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
Benzo(a)anthracene	ug/l	0.002	**0.42 J**	**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**
Benzo(a)pyrene	ug/l	0.002	**0.46**	**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**
Benzo(b)fluoranthene	ug/l	0.002	**0.27**	**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**
Benzo(g,h,i)perylene	ug/l	NC	0.28	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
Benzo(k)fluoranthene	ug/l	0.002	**0.3**	**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**
Chrysene	ug/l	0.002	**0.43**	**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**
Dibenzo(a,h)anthracene	ug/l	NC	0.20 J	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
Fluoranthene	ug/l	50	1.7	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
Fluorene	ug/l	50	3.8	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
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**0.21**	**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**
Naphthalene	ug/l	10	63 D	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
Phenanthrene	ug/l	50	9.1	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
Pyrene	ug/l	50	2.5 J	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
Cyanide and Lead														
Lead	ug/l	25	7.7	5 U	5 U	4.2 J	4.8 J	9.1	5.7	21	5 U	15	5 U	0.031
Cyanide	mg/l	0.2	**0.245**	**0.197**	R	0.11 J	0.114	R	**0.28**	**1.4**	0.1	**0.2**	**0.9**	0.2

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

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

CONSTITUENT	Sample Date / UNITS	06/30/10	01/04/11	04/07/11	06/15/11	10/12/11	12/14/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014
MNA/WQ Parameters													
Alkalinity (as CaCO3)	mg/l	528	450	R	R	410	453 J	R	494	417	456	483	438
Chloride	mg/l	9	10.8	6.1	9.7 B	5.1	R	12.8	40.4	2	7.6	28.5	8.9
Ethane	ug/l	1 U	1 U	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
Ethene	ug/l	1 U	1 U	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
Ferrous Iron	mg/l	0.29	0.1 U	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
Manganese	mg/l	NA	0.36	0.054	0.17	0.2	0.28	0.51	2	0.008	0.25	1	0.34
Methane	ug/l	9.1	120 D	1 U	6.2	46	15	70	140	1 U	8.6	140	100
Nitrate	mg/l	NA	1 U	0.71	0.19	0.086	0.023 J	0.05 U	0.05 U	0.8	0.05 U	0.05 U	0.061
Nitrogen	mg/l	0.81	0.77	0.85	0.32	0.36	R	0.86	2.5	0.54	0.68	1.5	2.2
Sulfate	mg/l	NA	53.3	5 U	19.6 B	5.6 JB	R	173 B	639	5 U	5 U	363	33.3
Sulfide	mg/l	NA	1.6	1 U	1 UJ	1 U	R	R	1 U	1 U	1 U	1 U	1 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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	09/29/10	01/04/11	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014
BTEX Compounds														
Benzene	ug/l	1	**1600 D**	**1200**	**940 D**	**1300 D**	**670**	**790 D**	**1500 D**	**1100 E**	**410**	**390**	**210**	**300**
Ethylbenzene	ug/l	5	**200**	**250**	**190 D**	**210 D**	**120**	**190 D**	**220**	**200**	**75**	**53**	**38**	**74**
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**
o-Xylene	ug/l	5	**39**	**39**	**44**	**48**	**37**	**38**	**27**	**23**	**19**	**16**	**8.5**	**28**
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**
PAHs														
Acenaphthene	ug/l	20	**44 J**	**49**	**47**	**32**	**47**	**50**	**47**	**57**	**42**	**23**	**18**	**24**
Acenaphthylene	ug/l	NC	19 J	23	24	17	22	19	12	16	11	6.5	3	3.9
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
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
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
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**
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
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
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
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
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
Fluorene	ug/l	50	12 J	13	13	8.7	14	13	10	17	13	6.1	4.3	5.2
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
Naphthalene	ug/l	10	**110 JD**	**89**	**560 D**	**450 D**	**570 D**	**140 D**	**51**	**27**	**94**	**13**	**29**	**210**
Phenanthrene	ug/l	50	8.3 J	11	8	6.7 B	13	11	8.8	12	10	5.1	3.4	3.7
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
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
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**

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

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

CONSTITUENT	Sample Date / UNITS	09/30/10	01/05/11	04/07/11	06/15/11	10/12/11	12/14/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014
MNA/WQ Parameters													
Alkalinity (as CaCO3)	mg/l	558	550	R	R	502 J	547 J	R	629	527	585	482	557
Chloride	mg/l	44.3	46.4	22.8	43.3 B	28.5 J	R	68.2	70.6	39.4	42	44.5	44.2
Ethane	ug/l	10 U	10 U	2.9	300 U	300 U	300 U	300 U	380 U	380 U	380 U	380 U	380 U
Ethene	ug/l	10 U	10 U	1.5 U	300 U	300 U	300 U	300 U	350 U	350 U	350 U	350 U	350 U
Ferrous Iron	mg/l	0.15	1.36	R	0.51 J	0.47 J	0.13 J	R	0.1 U	0.15	0.18	0.1U	0.1U
Manganese	mg/l	NA	0.74	0.89	0.67	0.79	0.77	0.61	0.61	1	1.1	0.68	1
Methane	ug/l	820	3400	680	360	720	1900	1600	1900	780	580	1100	2400
Nitrate	mg/l	NA	1 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
Nitrogen	mg/l	4.07	4.15	1.9	3.1	2.1	R	4.6	5.4	3	3.1	3.2	2.9
Sulfate	mg/l	NA	182	137 B	193 B	R	R	202 B	217	113	139	122	91.1
Sulfide	mg/l	NA	1.4	1 U	1 UJ	2.4	1 U	R	1 U	1 U	1 U	1 U	1 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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	09/29/10	01/04/11	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014
BTEX Compounds														
Benzene	ug/l	1	**140**	**170**	**150 D**	**100 D**	**17**	**140 D**	**150 D**	**180**	**200**	**150**	**8.7**	**59**
Ethylbenzene	ug/l	5	**70**	**110**	**92**	**51**	**5**	**78**	**66**	**100**	**150**	**92**	**6.2**	**41**
m/p-Xylene	ug/l	5	**31**	**55**	**47**	**27**	2.8	**29**	**26**	**14**	**41**	**23**	1U	10 U
o-Xylene	ug/l	5	**34**	**54**	**41**	**27**	3.6	**36**	**37**	**14**	**56**	**35**	1U	**17**
Toluene	ug/l	5	**17**	**36**	**33**	**15**	2	**21**	**11**	10 U	**14**	**9**	1U	**17**
PAHs														
Acenaphthene	ug/l	20	14 D	18	**21**	7	2.3	13	15	**30**	**30**	16	1U	**40**
Acenaphthylene	ug/l	NC	16 J	27 D	36	11	4.7	10	2.2	34	49	0.48 U	0.48 U	31
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
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
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
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
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
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
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
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
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
Fluorene	ug/l	50	10 D	11	16	4.7	1.3	8.8	13	17	21	9.1	0.48 U	**22**
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
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
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
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
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
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**

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

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

Sample Date / CONSTITUENT	UNITS	09/30/10	01/05/11	04/07/11	06/15/11	10/12/11	12/13/11	03/13/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014
MNA/WQ Parameters													
Alkalinity (as CaCO3)	mg/l	442	410	R	R	586 J	600 J	R	436	530	585	454	595
Chloride	mg/l	7.2	6.7	9.4	6.1 B	3.4 J	R	12.7	12.8	5.5	5.4	5	6.5
Ethane	ug/l	2.5 U	2.5 U	30 U	30 U	1.5 U	1.5 U	0.57 J	750 U	750 U	750 U	750 U	750 U
Ethene	ug/l	2.5 U	2.5 U	30 U	30 U	1.5 U	1.5 U	2.6	700 U	700 U	700 U	700 U	700 U
Ferrous Iron	mg/l	0.1 U	0.44	R	0.33 J	R	0.08	0.1 U	0.12	0.1 U	0.13	0.1 U	0.1 U
Manganese	mg/l	NA	0.7	0.59	0.9	0.17	0.61	0.88	1.1	0.63	0.7	0.22	0.63
Methane	ug/l	210 J	580 D	270	170	37	400 B	140	550	170	150	75	410
Nitrate	mg/l	NA	1 U	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
Nitrogen	mg/l	3.2	2.75	2.6	1.8	R	R	3.2	3.8	3.6	2.8	2.4	3.3
Sulfate	mg/l	NA	316	312 B	243 B	R	R	351 B	487	140	86	1U	107
Sulfide	mg/l	NA	2.7 J	1 U	1 UJ	0.8 J	1 U	R	1 U	1 U	1 U	1 U	1 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

FIGURES

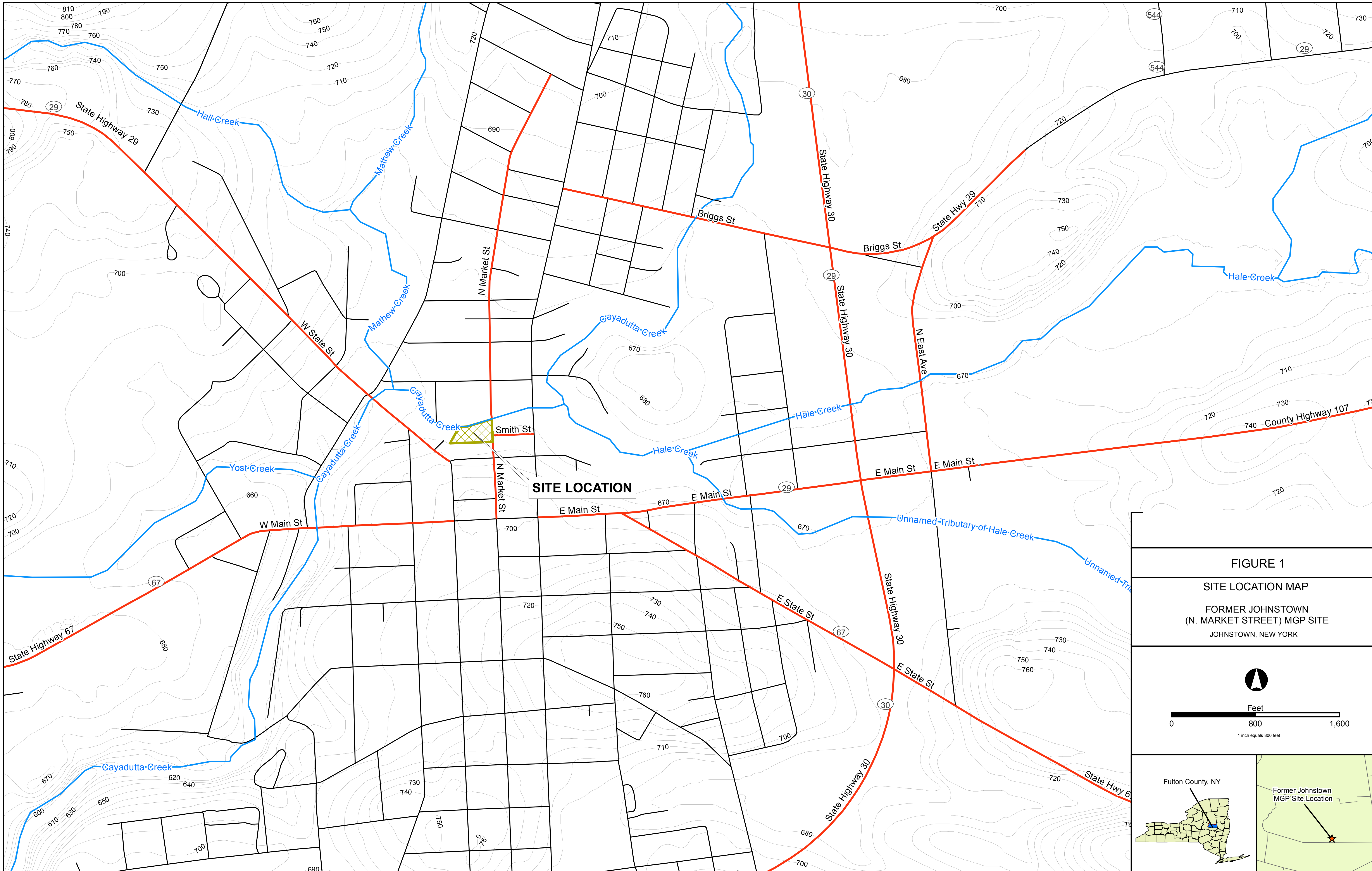


FIGURE 1

SITE LOCATION MAP

FORMER JOHNSTOWN (N. MARKET STREET) MGP SITE

JOHNSTOWN, NEW YORK

REPUTED OWNER

City of Johnstown

BK. 738 PG. 322

Decommissioned
October 9, 2013

MW-9

MW-8

Decommissioned
October 9, 2013

Top of Bank

CAYADUTTA CREEK

Concrete Wall

SG-1

Stream Gauge Not
Accessible

SG-2

MW-10

MW-7

Sheet Pile
left in place
after IRM
activities

REPUTED OWNER
PETER G.
RANERI
162.19-14-7

MW-15

MW-14

Holder #2
1887-1918

NMPC
162.20-14-7

MW-16

MW-13

Holder #3
1898-1948

Existing Natural
Gas Regulator Station

Approx. Property
Lines

Holder #1
1859- 1896

MW-4

Retaining Wall

REPUTED OWNER
CITY OF JOHNSTOWN
162.20-14-3
COLONIAL CEMETERY

JOHNSTOWN
162.19-14-8

2 STY

2 STY
GARAGE

Museum

PARKING

Edge of Pavement

NORTH MARKET STREET

Sidewalk

Edge of Pavement

MW-11

CAYADUTTA CREEK

MW-12

2 Story
House

SMITH ST.

Warehouse

N

LEGEND

MONITORING WELL

STREAM GAUGE

HISTORIC MGP FEATURE (REMOVED)

HISTORIC MGP FEATURE

0 40 80

Feet

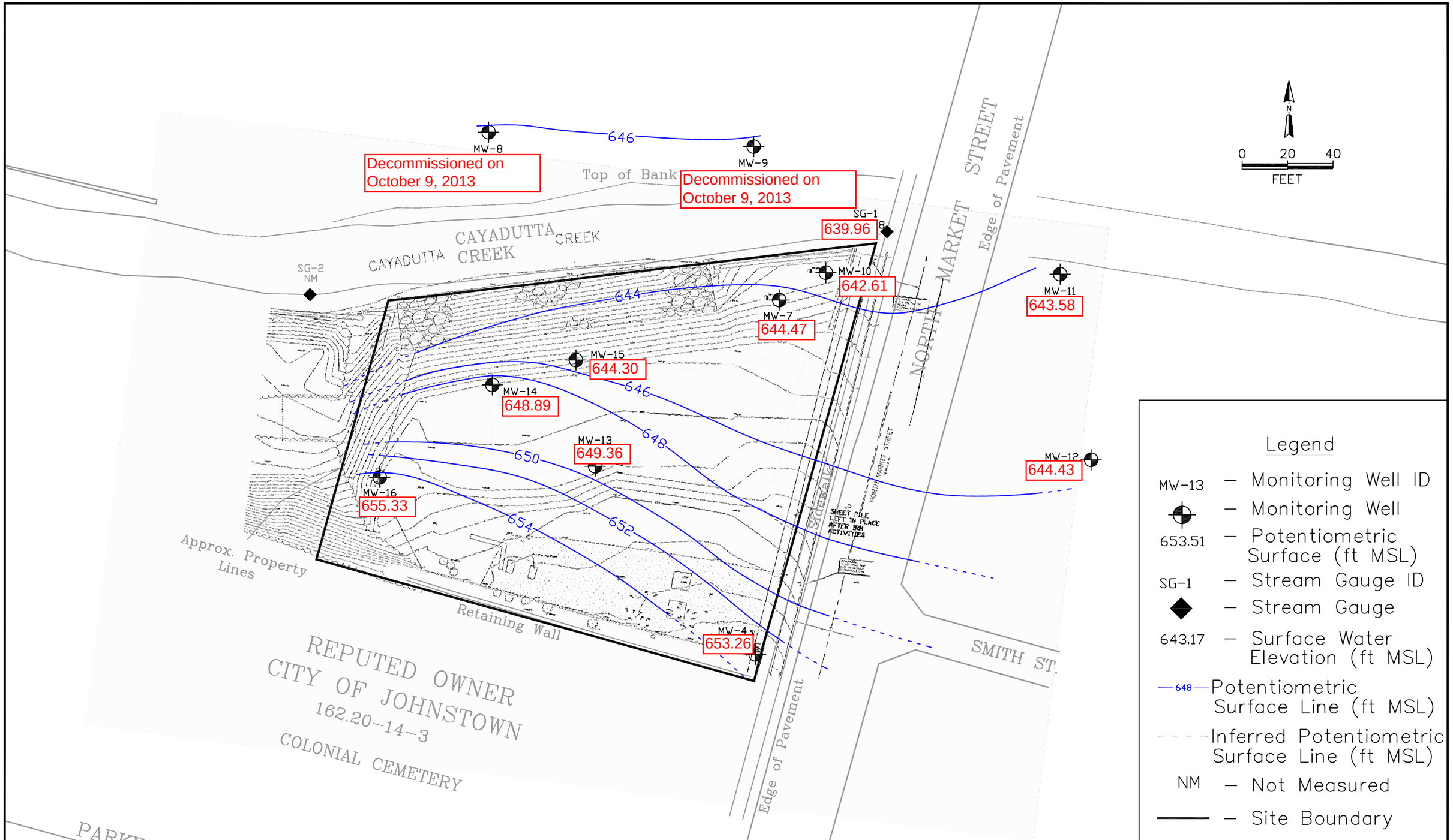
nationalgrid

SITE LOCATION PLAN
SHOWING MONITORING WELL LOCATIONS, HISTORIC MGP
FEATURES, AND SURROUNDING AREA

JOHNSTOWN (N. MARKET STREET) FORMER MGP SITE
JOHNSTOWN, NEW YORK

FIGURE 2

T:\GIS\National_Grid\JohnstownMXD\Feasibility_Study_2009\IRM_August_09\FIG_1_2_SITE_PLAN.mxd



nationalgrid

TITLE:
Potentiometric Surface Map
Johnstown MGP Site
North Market Street, Johnstown, NY

Figure 3 - Groundwater Elevations (October 2014)

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
Sample ID		MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
Sample Date		07/01/10	09/29/10	1/3/2011	4/6/2011	6/14/2011	10/11/11	12/13/11	03/13/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0	0.98	0.63	0.73	2.39	0.71
ORP*	mV	73	-20	76	7	92	-92	-3	-52
Ferrous Iron	mg/l	1 U	0.56	0.2 U	0.68 J	1.6 J	1.5	1.4	1.2*
Nitrate	mg/l	NA	NA	1 U	0.05 U	0.12	0.05 U	0.05 U	0.05 U
Sulfate	mg/l	NA	NA	31.8	19.9	4 JB	2.5 JB	R	26.2 B
Methane	ug/l	49	45	81	84	29	190 J	190 B	64

CONSTITUENT	UNITS	Round 1	Round 2	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9
Sample ID		MW-9	MW-9	MW-19	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9
Sample Date		07/01/10	09/29/10	09/29/10 Duplicate	1/3/2011	4/6/2011	06/14/11	10/11/11	12/13/11	03/13/12
MNA/WQ Parameters										
Dissolved Oxygen*	mg/l	0	0		0	0	0.82	0.59	0.71	0.52
ORP*	mV	-16	4		-27	-87	-57	-65	-44	-161
Ferrous Iron	mg/l	0.1 U	0.1 U	0.1 U	0.1 U	2*	0.1 UJ	0.1 U	0.1 U	0.1 U
Nitrate	mg/l	NA	NA	NA	1 U	4.1	3.6	0.95	0.063	0.28
Sulfate	mg/l	NA	NA	NA	51.1	61.4	73.2 B	84.3	R	47.7
Methane	ug/l	22	170 D	140 D	12	3.6	7.6	6	25	90

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10
Sample ID		MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10
Sample Date		07/01/10	09/29/10	1/4/2011	4/6/2011	6/14/2011	10/11/11	12/14/11	03/14/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0	5.83	6.83	5.6	0.76	0.49
ORP*	mV	-104	-55	30	-47	-145	-60	-93	-61
Ferrous Iron	mg/l	2.78	0.31	0.2 U	0.2*	0.34 J	0.47	0.1 U	1.9*
Nitrate	mg/l	NA	NA	1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Sulfate	mg/l	NA	NA	167	306	296 B	320 B	R	238 B
Methane	ug/l	75	64	75	34	9.8	33	85	40

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15
Sample ID		MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15
Sample Date		07/01/10	09/30/10	1/5/2011	4/7/2011	6/15/2011	10/12/11	12/14/11	03/14/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0	3.02	0.26	0.52	0.34	0.51
ORP*	mV	-110	-158	-168	-123	-48	-157	-106	-143
Ferrous Iron	mg/l	1 U	0.15	1.36	3.8*	0.51 J	0.47 J	0.13 J	0.9*
Nitrate	mg/l	NA	NA	1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Sulfate	mg/l	NA	NA	182	137 B	193 B	R	R	202 B
Methane	ug/l	1300	820	3400 D	680	360	720	1900	1600

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11
Sample ID		MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11
Sample Date		07/01/10	09/29/10	1/4/2011	4/7/2011	6/15/2011	10/11/11	12/13/11	03/14/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0	7.65	0.40	0.40	0.38	4.95
ORP*	mV	-140	-158	-120	11	32	-113	-72	-69
Ferrous Iron	mg/l	3.64	0.2 U	0.5 U	4*	9.4 J	0.9 J	1.2*	0.1 U
Nitrate	mg/l	NA	NA	1 U	0.13	0.05 U	0.05 U	0.05 U	0.092
Sulfate	mg/l	NA	NA	46.3	126 B	65.1 B	12.4	R	8.5 B
Methane	ug/l	740 D	730	420	4.8	68	190	360	160

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14
Sample ID		MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Date		06/30/10	09/30/10	1/4/2011	4/7/2011	6/15/2011	10/12/11	12/14/11	03/14/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0	0	6.21	0.58	0.48	1.02
ORP*	mV	88	-76	-118	204	4	-1	-71	-150
Ferrous Iron	mg/l	0.29	0.15	0.1 U	U*	0.11 J	0.1 U	0.2*	0.1 U
Nitrate	mg/l	NA	NA	1 U	0.71	0.19	0.086	0.023 J	0.05 U
Sulfate	mg/l	NA	NA	53.3	5 U	19.6 B	5.6 JB	R	173 B
Methane	ug/l	9.1	94	120 D	1 U	6.2	46	15	70

CONSTITUENT	UNITS	Round 3	Round 6	Round 7	Round 8
Site ID		MW-12	MW-12	MW-12	MW-12
Sample ID		MW-12	MW-12	MW-12	MW-12
Sample Date		01/04/11	10/12/11	12/14/11	03/14/12
MNA/WQ Parameters					
Dissolved Oxygen*	mg/l	0	2.76	0.84	2.03
ORP*	mV	61	107	6	34
Ferrous Iron	mg/l	0.1 U	0.3*	0.1 U	0.1 U
Nitrate	mg/l	4	6.6	6.2	3.2
Sulfate	mg/l	97.9	240 B	R	53.5 B
Methane	ug/l	2 U	1 U	1.1	0.56 J

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7
Sample ID		MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7
Sample Date		07/01/10	09/30/10	1/4/2011	4/7/2011	6/15/2011	10/12/11	12/14/11	03/14/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0	0	6.56	0.66	0.83	0.65
ORP*	mV	-108	-89	-95	-80	-126	-170	-111	-87
Ferrous Iron	mg/l	3.66	1.12	0.1 U	3.2*	1.7 J	0.83 J	0.8*	0.1 U
Nitrate	mg/l	NA	NA	1 U	0.05 U	0.02 U	0.05 U	0.05 U	0.05 U
Sulfate	mg/l	NA	NA	576	745 B	611 B	R	R	674 B
Methane	ug/l	920 D	290	510	190	210	190	300	210

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16
Sample ID		MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16
Sample Date		06/30/10	09/30/10	1/5/2011	4/7/2011	6/15/2011	10/12/11	12/13/11	03/13/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0.11	0.79	0.26	1.2	0.9	1.15
ORP*	mV	-160	-110	-98	-27	57	33	-101	-122
Ferrous Iron	mg/l	0.29	0.1 U	0.44	2.2*	0.33 J	1.3*	0.08	0.1 U
Nitrate	mg/l	NA	NA	1 U	0.05 U	0.05 U	0.65	0.17	0.05 U
Sulfate	mg/l	NA	NA	316	312 B	243 B	R	R	351 B
Methane	ug/l	300	210	580 D	270	170	37	400 B	140

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4
Sample ID		MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4
Sample Date		06/30/10	09/29/10	1/4/2011	4/6/2011	6/14/2011	10/11/11	12/13/11	03/14/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	3.34	3.5	0.12	4.92	10.34	3.71	4.1	2.92
ORP*	mV	141	131	161	172	163	197	187	96
Ferrous Iron	mg/l	0.1 U	0.1 U	0.1 U	0.2*	0.1 U	0.1 U	0.1 U	0.1 U
Nitrate	mg/l	NA	NA	2.5	2.7	2.9	2.4	3	3.1
Sulfate	mg/l	NA	NA	49.2	56.7	74.2 B	52.9	R	56 B
Methane	ug/l	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U

CONSTITUENT	UNITS	Round 1		Round 2	Round 3		Round 4		Round 5		Round 6		Round 7		Round 8	
Site ID		MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13
Sample ID		MW-13	MW-93	MW-13	MW-13	MW-103	MW-13	FIELD DUP	MW-13	FIELD DUP	MW-13	FIELD DUP	MW-13	FIELD DUP	MW-13	FIELD DUP
Sample Date		7/1/2010	7/1/2010	09/30/10	1/5/2011	1/5/2011	4/7/2011	4/7/2011	6/15/2011	6/15/2011	10/12/2011	10/12/2011	12/14/2011	12/14/2011	3/14/2012	3/14/2012
			Duplicate			Duplicate		Duplicate		Duplicate		Duplicate		Duplicate		Duplicate
MNA/WQ Parameters																
Dissolved Oxygen*	mg/l	0		0	0		0		0.22		0.48		1.53		0.41	
ORP*	mV	-234		-210	-251		-170		-142		-86		-230		-215	
Ferrous Iron	mg/l	0.27	0.26	0.1 U	0.32	0.29	0.2*		0.1 UJ	0.1 UJ	3.1 J	3.5 J	0.08 J	0.1 U	0.1 U	0.1 U
Nitrate	mg/l	NA	NA	NA	1 U	1 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
Sulfate	mg/l	NA	NA	NA	86.8	87.9	5 U	5 U	3.3 JB	3.3 JB	R	R	R	R	52.1 J	78.9 J
Methane	ug/l	160	160	77	110 D	130 D	32	35	46	32	28 J	30 J	72	71	66	82

Historical Groundwater Data
(Rounds 1-8)

Legend

MW-11 – Monitoring Well ID

– Monitoring Well

– Site Boundary

* – From field reading at time of groundwater sampling
B – Present in associated blank
D – From a diluted sample
U – Not detected
J – Estimated
NA – Not analyzed
ug/L – Micrograms per liter
mg/L – Milligrams per liter
mV – Millivolts

0 20 40
FEET

nationalgrid

TITLE:
Monitored Natural Attenuation/Water Quality Parameter Map
Johnstown MGP Site
North Market Street, Johnstown, NY

Figure 4

MW-8
Not Sampled

MW-9
Not Sampled

Top of Bank

CAYADUTTA CREEK

CAYADUTTA CREEK

MW-10
ND

MW-7
ND

MW-15
407.8

MW-14
1.7

MW-13
1760

MW-16
134

MW-4
ND

MW-11
36.4

MW-12
ND

NORTH MARKET STREET

Edge of Pavement

NORTH MARKET STREET

SHEET PILE LEFT IN PLACE AFTER IRM ACTIVITIES

Sidewalk

Approx. Property Lines

Retaining Wall

REPUTED OWNER
CITY OF JOHNSTOWN
162.20-14-3

COLONIAL CEMETERY

SMITH ST.

Edge of Pavement

PARKIN

N

0 20 40
FEET

Legend

MW-11 – Monitoring Well ID

– Monitoring Well

31.1 – BTEX Concentration (in ug/L)

1 – 5 ug/L BTEX

5 – 100 ug/L BTEX

100 – 1,000 ug/L BTEX

>1,000 ug/L BTEX

– Site Boundary

BTEX – Benzene, Toluene, Ethylbenzene, Xylenes

ND – Not detected

New York State Department of Environmental Conservation Ambient Water Quality Standards are 1 ug/L for benzene and 5 ug/L for ethylbenzene, toluene, and xylenes.

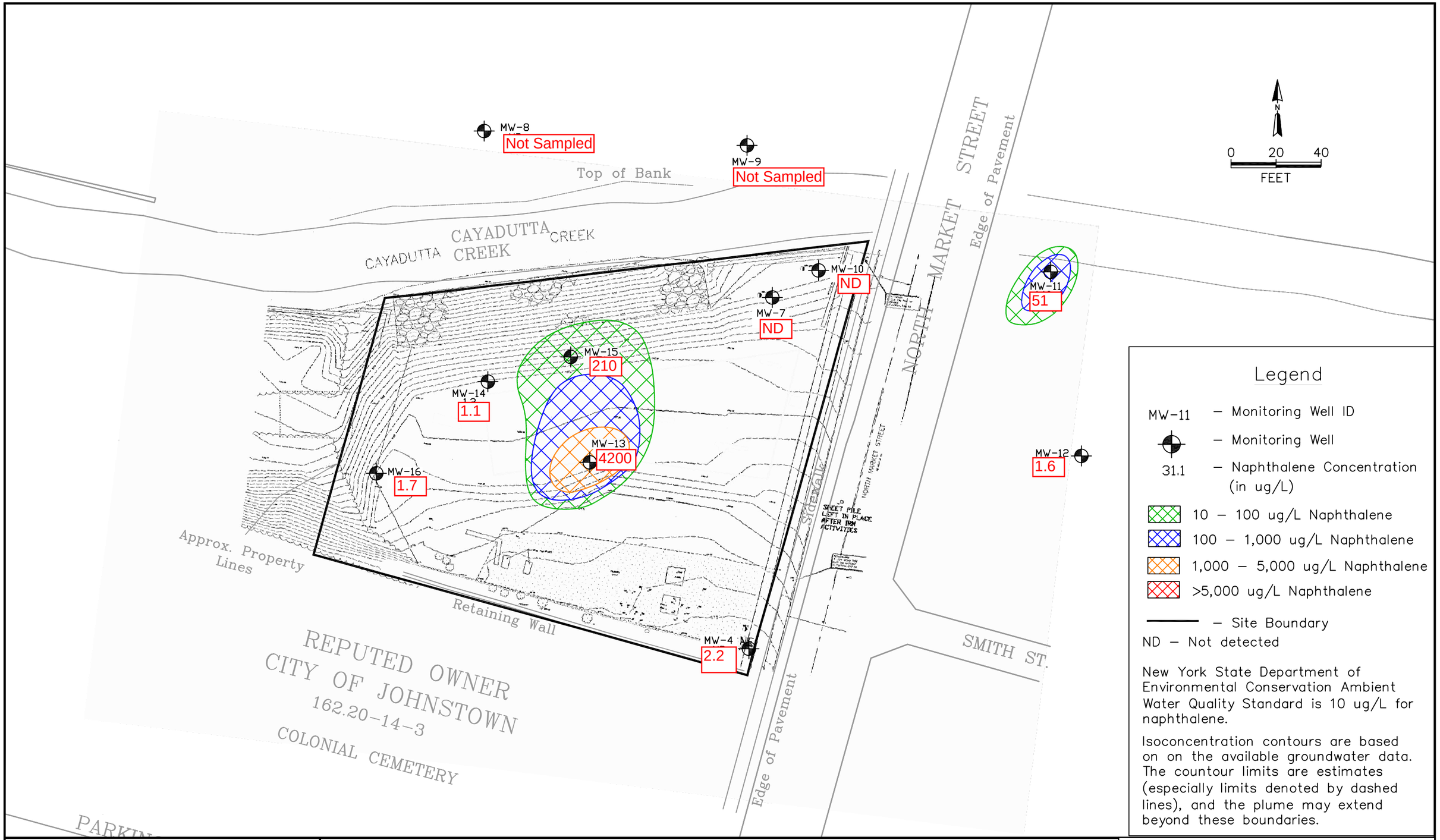
Isoconcentration contours are based on on the available groundwater data. The countour limits are estimates (especially limits denoted by dashed lines), and the plume may extend beyond these boundaries.

nationalgrid

TITLE:
BTEX Isoconcentration Contour
Johnstown MGP Site
North Market Street, Johnstown, NY

Figure 5

October 2014



Legend

MW-11 – Monitoring Well ID

– Monitoring Well

31.1 – Naphthalene Concentration (in ug/L)

10 – 100 ug/L Naphthalene

100 – 1,000 ug/L Naphthalene

1,000 – 5,000 ug/L Naphthalene

>5,000 ug/L Naphthalene

– Site Boundary

ND – Not detected

New York State Department of Environmental Conservation Ambient Water Quality Standard is 10 ug/L for naphthalene.

Isoconcentration contours are based on on the available groundwater data. The countour limits are estimates (especially limits denoted by dashed lines), and the plume may extend beyond these boundaries.

nationalgrid

TITLE:

Naphthalene Isoconcentration Contour
Johnstown MGP Site
North Market Street, Johnstown, NY

Figure 6

October 2014

APPENDIX A

FIELD DATA

National Grid
109 North Market Street, Former MGP Site
Johnstown, New York

Fall Semi-Annual Event
October 13-14, 2014

Well ID	Sample?	Well Size?	DTW	DTP	DTB	Comments
RW-1	No	2"	17.31		21.50	
MW-4	Yes	2"	23.28		27.32	
MW-7	Yes	2"	14.61		22.10	
MW-10	Yes	2"	14.98		22.05	
MW-11	Yes	2"	13.71		22.90	
MW-12	Yes	2"	15.65		22.24	
MW-13	Yes	2"	15.53		22.75	MS/MSD
MW-14	Yes	2"	15.02		23.55	FD-1014
MW-15	Yes	2"	17.55		23.00	
MW-16	Yes	2"	10.24		19.45	
Gauge-1 (bridge)	No		20.01			

DTW *-depth to water*
DTP *-depth to product*
DTB *-depth to bottom*
All from top of casing

Site Management Plan Inspection Form

109 North Market Street
Johnstown, New York

Date: 10/2/2014
Technician: Rosenzweig

Time: 1600
Weather: Overcast 70 °F

Vegetation Cap				
Condition of Grass	GOOD	FAIR	POOR	COMMENTS:
Condition of Site Trees	NONE	MINOR	SIGNIFICANT	COMMENTS:
Surface Erosion	NONE	MINOR	SIGNIFICANT	COMMENTS:
Has the site been maintained/mowed?	YES		NO	COMMENTS:

Sheet Pile Wall			
Has any construction occurred that may have impacted the sheet pile wall?	YES	NO	COMMENTS:

Site Wide			
Does the property continue to be used for commercial and/or industrial uses?	YES	NO	COMMENTS:
Does the use of groundwater for potable or process water continue to be restricted?	YES	NO	COMMENTS:
Are agricultural or vegetable gardens present on the property?	YES	NO	COMMENTS:
Do the Engineering Controls continue to perform as designed?	YES	NO	COMMENTS:
Do the Engineering Controls continue to be protective of human health and environment?	YES	NO	COMMENTS:
Are the requirements of the Site Management Plan being met?	YES	NO	COMMENTS:
Are the requirements of the Environmental Easement being met?	YES	NO	COMMENTS:
Since the last inspection has the groundwater been sampled in accordance with the SMP?	YES	NO	COMMENTS:
Since the last inspection have there been any changes to the remedial system?	YES	NO	COMMENTS:
Are there any needed changes?	YES	NO	COMMENTS:
Are the site records complete and up to date?	YES	NO	COMMENTS:

Miscellaneous				
Evidence of Trespassing	YES		NO	COMMENTS: Dog walking
Litter	NONE	MINOR	SIGNIFICANT	COMMENTS:

General Comments:

TestAmerica Albany
Kraft Road
Albany, NY 12205

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: E Rosenzweig	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-55819-10483.1
Client Contact: Timothy Beaumont	Phone: 203.727.6524	E-Mail: becky.mason@testamericainc.com		Page: Page 1 of 2
Company: CDM Smith, Inc.				Job #:
Address: 6800 Old Collamer Road Suite 3	Due Date Requested:			
City: East Syracuse	TAT Requested (days): Standard			
State, Zip: NY, 13057	PO #: 36380.99758			
Phone:	WO #:			
Email: beaumontj@cdmsmith.com				
Project Name: CDM Smith/ Event Desc: Johnstown (N. Market Street)	Project #: 48002647			
Site: New York	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175_CO2 - Carbon dioxide	8270C_LL_PAH - PAH low level Semivolatiles	351.2 - Total Kjeldahl Nitrogen	6010B - (MOD) TAL Metals ICP	8260B - BTEX - 8260	RSK_175 - (MOD) Local Method	SM4500_S2_F - Sulfide	9012A - Cyanide, Total	353.2, 353.2_Nitrite, D516, Nitrate_Calc, SM4500_Cl_E	2320B - Alkalinity, Total	3500_FE_D - Ferrous Iron	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	N	S	D	A	A	C	B	N	N	N	X	
MW-4-1014	10/13/14	1425	G	Water		MS	X	X	X	X	X	X	X	X	X	X	X		
MW-7-1014	10/14/14	955		Water															
MW-10-1014	10/14/14	835		Water															
MW-11-1014	10/14/14	1135		Water															
MW-12-1014	10/14/14	1150		Water															
MW-13-1014	10/13/14	950		Water		Y													
MW-13-1014 MS	10/13/14	950		Water		Y													
MW-13-1014 SD	10/13/14	950		Water		Y													
MW-14-1014	10/13/14	1240		Water															
MW-15-1014	10/13/14	1120		Water															
MW-16-1014	10/13/14	935	G	Water															

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
E Rosenzweig	10/14/14/1440	CDMS		10-14-14 14:40	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Albany
25 Kraft Road
Albany, NY 12205

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: E Rozenzweig	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-55819-10463.2
Client Contact: Timothy Beaumont	Phone: 203.727.6524	E-Mail: becky.mason@testamericainc.com		Page: Page 2 of 2
Company: CDM Smith, Inc.				Job #:
Address: 6800 Old Collamer Road Suite 3	Due Date Requested:	Analysis Requested		Preservation Codes: A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2SO3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - ph 4-5; Z - other (specify); Other:
City: East Syracuse	TAT Requested (days): Standard			
State, Zip: NY, 13057	PO #: 36380.99758			
Phone:	WO #:			
Email: beaumonttj@cdmsmith.com	Project #: 48002647			
Project Name: CDM Smith/ Event Desc: Johnstown (N. Market Street)	SSOW#:			
Site: New York				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Oil/waste, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_176_CO2 - Carbon dioxide	8270C_LL_PAH - PAH low level Semivolatiles	351.2 - Total Kjeldahl Nitrogen	6010B - (MOD) TAL Metals ICP	8260B - BTEX - 8260	RSK_175 - (MOD) Local Method	SM4500_S2_F - Sulfide	9012A - Cyanide, Total	353.2, 353.2_Nitrite, D516, Nitrate_Calc, SM4500_Cl_E	2320B - Alkalinity, Total	3500_FE_D - Ferrous Iron	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N	N	A	A	C	B	N	N	N		
FD-1014	10/13/14	—	G	Water	N	N	X	X	X	X	X	X	X	X	X	X	X		
Trip Blank	10/13/14	—	G	W	N	N					X								

10-14-14

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: E Rozenzweig	Date/Time: 10/14/14 1440	Company: CDMS	Received by:	Date/Time: 10-14-14 14:40	Company: TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: 3075	Cooler Temperature(s) °C and Other Remarks:

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-4**

Date: 10/13/14
Weather: Overcast ≈ 60°
Time In: 1350 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	23.25	
Depth to Bottom:	(feet)	27.32	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	4.07	
Volume of Water in Well:	(gal)	0.65	
Three Well Volumes:	(gal)	1.94	

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: Clear No Sheen/Odor

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)	1500				
Duration of Pumping: (min)	30				
Total Volume Removed: (gal)	1	Did well go dry?	Yes ☐	No ☒	

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	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1355	Top of Pump	12.74	7.91	110	1.55	39.2	5.32	0.995
1400		12.36	7.84	119	1.73	44.3	5.61	1.01
1405		12.16	7.73	116	1.84	55.0	4.31	1.18
1410		11.67	7.67	116	1.87	54.0	4.05	1.20
1415		11.62	7.66	118	1.88	26.2	4.15	1.20
1420		11.55	7.66	121	1.90	13.8	4.27	1.24

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	2 - 250 ml amber	Yes ☒ No ☐
EPA SW-846 Method 8260	VOC's BTEX	3 - 40 ml vials	Yes ☒ No ☐
EPA Method 610B	LEAD	1 - 250 ml plastic	Yes ☒ No ☐
	MANGANESE		
EPA Method 9012A	TOTAL CYANIDE	1 - 250 ml plastic	Yes ☒ No ☐
RSK_175_CO2	DISSOLVED CARBON DIOXIDE	3 - 40 ml vials	Yes ☒ No ☐
EPA Method 2320B	TOTAL ALKALINITY	1 - 125 ml plastic	Yes ☒ No ☐
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	1 - 250 ml plastic	Yes ☒ No ☐
SM 4500_S2_F	SULFIDE	1 - 250 ml plastic	Yes ☒ No ☐
SM_3500_FE_D	FERROUS IRON	1 - 125 ml plastic	Yes ☒ No ☐
RSK_175	METHANE/ETHENE/ETHANE	3 - 40 ml vials	Yes ☒ No ☐
D516	SULFATE	2 - 125 ml plastic	Yes ☒ No ☐
EPA Method 353.2	NITRATE		
SM_4500_CI_E	CHLORIDE		

Shipped: Drop-off Albany Service Center ☐

Sample ID: DMW-4-1014 Duplicate? Yes ☐ No ☒
Sample Time: 1425 MS/MSD? Yes ☐ No ☒

Laboratory: Test America
Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-7**

Date: 10/14/14
Weather: Overcast ≈70°
Time In: 920 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	14.61	
Depth to Bottom:	(feet)	22.10	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	7.49	
Volume of Water in Well:	(gal)	1.20	
Three Well Volumes:	(gal)	3.60	

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: Clear No Sheen / Odor

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)	~500			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	4	Did well go dry?	Yes ☐	No ☒

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	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
925	14.81	15.58	7.80	-5	1.93	14.0	5.34	1.27
930	15.23	15.68	7.75	146	1.79	15.9	5.31	1.19
935	15.55	15.75	7.69	109	1.66	26.1	2.41	1.06
940	15.93	15.76	7.72	62	1.58	14.9	1.18	1.01
945	16.22	15.72	7.78	40	1.54	33.2	0.98	0.980
950	16.61	15.70	7.75	31	1.53	27.0	0.82	0.975

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	2 - 250 ml amber	Yes ☒	No ☐
EPA SW-846 Method 8260	VOC's BTEX	3 - 40 ml vials	Yes ☒	No ☐
EPA Method 610B	LEAD	1 - 250 ml plastic	Yes ☒	No ☐
	MANGANESE			
EPA Method 9012A	TOTAL CYANIDE	1 - 250 ml plastic	Yes ☒	No ☐
RSK_175_CO2	DISSOLVED CARBON DIOXIDE	3 - 40 ml vials	Yes ☒	No ☐
EPA Method 2320B	TOTAL ALKALINITY	1 - 125 ml plastic	Yes ☒	No ☐
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	1 - 250 ml plastic	Yes ☒	No ☐
SM 4500_S2_F	SULFIDE	1 - 250 ml plastic	Yes ☒	No ☐
SM_3500_FE_D	FERROUS IRON	1 - 125 ml plastic	Yes ☒	No ☐
RSK_175	METHANE/ETHENE/ETHANE	3 - 40 ml vials	Yes ☒	No ☐
D516	SULFATE	2 - 125 ml plastic	Yes ☒	No ☐
EPA Method 353.2	NITRATE			
SM_4500_Cl_E	CHLORIDE			

Sample ID: DUP-10/14 Duplicate? Yes ☐ No ☒
Sample Time: 955 MS/MSD? Yes ☐ No ☒

Shipped: Drop-off Albany Service Center ☐

Laboratory: Test America
Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-10**

Date: 10/14/14
Weather: Overcast ≈ 70°
Time In: 0800 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	14.98	
Depth to Bottom:	(feet)	22.05	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	7.07	
Volume of Water in Well:	(gal)	1.13	
Three Well Volumes:	(gal)	3.39	

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: Clear No Sheen/Odor

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)	500				
Duration of Pumping: (min)	30				
Total Volume Removed: (gal)	4	Did well go dry?	Yes ☐	No ☒	

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	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
805	15.38	15.44	7.58	85	2.53	25.4	0.86	1.62
810	15.59	15.51	7.66	2	2.78	20.5	2.71	1.78
815	15.86	15.49	7.62	-33	2.84	60.8	1.43	1.80
820	15.90	15.41	7.62	-40	2.84	60.4	1.43	1.82
825	15.94	15.53	7.64	-46	2.86	72.5	1.35	1.83
830	16.01	15.58	7.62	-45	2.87	71.5	1.04	1.84

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's		2 - 250 ml amber	Yes ☒ No ☐
EPA SW-846 Method 8260	VOC's BTEX		3 - 40 ml vials	Yes ☒ No ☐
EPA Method 610B	LEAD	☐	1 - 250 ml plastic	Yes ☒ No ☐
	MANGANESE			
EPA Method 9012A	TOTAL CYANIDE		1 - 250 ml plastic	Yes ☒ No ☐
RSK_175_CO2	DISSOLVED CARBON DIOXIDE		3 - 40 ml vials	Yes ☒ No ☐
EPA Method 2320B	TOTAL ALKALINITY		1 - 125 ml plastic	Yes ☒ No ☐
EPA Method 351.2	TOTAL KJELDAHL NITROGEN		1 - 250 ml plastic	Yes ☒ No ☐
SM 4500_S2_F	SULFIDE		1 - 250 ml plastic	Yes ☒ No ☐
SM_3500_FE_D	FERROUS IRON		1 - 125 ml plastic	Yes ☒ No ☐
RSK_175	METHANE/ETHENE/ETHANE		3 - 40 ml vials	Yes ☒ No ☐
D516	SULFATE	☐	2 - 125 ml plastic	Yes ☒ No ☐
EPA Method 353.2	NITRATE			
SM_4500_Cl_E	CHLORIDE			

Shipped: Drop-off Albany Service Center ☐

Sample ID: LTMW-10-1014
Sample Time: 835
Duplicate? Yes ☐ No ☒
MS/MSD? Yes ☐ No ☒

Laboratory: Test America
Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel:	Eric Rosenzweig	Date:	10/14/14
Job Number:	36380.105370	Weather:	Clear ~ 75°
Well Id.	**MW-11**	Time In:	1100 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	13.71	
Depth to Bottom:	(feet)	22.90	
Depth to Product:	(feet)	~	
Length of Water Column:	(feet)	9.19	
Volume of Water in Well:	(gal)	1.47	
Three Well Volumes:	(gal)	4.41	

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: Clear No Sheen/Odor

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)	500			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	4	Did well go dry?	Yes [ ]	No [X]

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	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1105	14.03	19.35	7.70	81	1.80	251	9.21	1.19
1110	14.41	18.73	7.84	-13	2.11	761	2.01	1.35
1115	14.74	17.61	7.83	-27	2.15	482	1.25	1.37
1120	14.88	17.37	7.81	-33	2.14	388	0.90	1.37
1125	14.96	17.32	7.80	-36	2.15	294	0.74	1.37
1130	15.12	17.09	7.80	-37	2.15	227	0.74	1.38

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's		2 - 250 ml amber	Yes [X] No [ ]
EPA SW-846 Method 8260	VOC's BTEX		3 - 40 ml vials	Yes [X] No [ ]
EPA Method 610B	LEAD		1 - 250 ml plastic	Yes [X] No [ ]
	MANGANESE			
EPA Method 9012A	TOTAL CYANIDE		1 - 250 ml plastic	Yes [X] No [ ]
RSK_175_CO2	DISSOLVED CARBON DIOXIDE		3 - 40 ml vials	Yes [X] No [ ]
EPA Method 2320B	TOTAL ALKALINITY		1 - 125 ml plastic	Yes [X] No [ ]
EPA Method 351.2	TOTAL KJELDAHL NITROGEN		1 - 250 ml plastic	Yes [X] No [ ]
SM 4500_S2_F	SULFIDE		1 - 250 ml plastic	Yes [X] No [ ]
SM_3500_FE_D	FERROUS IRON		1 - 125 ml plastic	Yes [X] No [ ]
RSK_175	METHANE/ETHENE/ETHANE		3 - 40 ml vials	Yes [X] No [ ]
D516	SULFATE		2 - 125 ml plastic	Yes [X] No [ ]
EPA Method 353.2	NITRATE			
SM_4500_Cl_E	CHLORIDE			

Shipped: Drop-off Albany Service Center [ ]

Sample ID: LTMW-11-101014 Duplicate? Yes [ ] No [X]
Sample Time: 1135 MS/MSD? Yes [ ] No [X]

Laboratory: Test America Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-12**

Date: 10/14/14
Weather: Clear 75
Time In: 10[illegible] Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	15.65	
Depth to Bottom:	(feet)	22.24	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	6.59	
Volume of Water in Well:	(gal)	1.05	
Three Well Volumes:	(gal)	3.15	

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: Clear No Sheen Odor

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)	500				
Duration of Pumping: (min)	30				
Total Volume Removed: (gal)	1	Did well go dry?	Yes [ ]	No [ ]	

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	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1020	19.81	16.14	8.08	45	1.77	94.6	6.56	0.870
1025	16.16	16.29	7.76	79	1.46	98.6	5.34	0.953
1030	16.63	15.96	7.56	121	2.21	94.3	12.31	1.43
1035	Top of	16.00	7.56	136	2.35	68.8	3.13	1.51
1040	Pump	16.06	7.60	143	2.38	49.5	2.60	1.52
1045		16.08	7.63	141	2.37	54.6	2.49	1.52

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	2 - 250 ml amber	Yes [X]	No [ ]
EPA SW-846 Method 8260	VOC's BTEX	3 - 40 ml vials	Yes [X]	No [ ]
EPA Method 610B	LEAD	1 - 250 ml plastic	Yes [X]	No [ ]
	MANGANESE			
EPA Method 9012A	TOTAL CYANIDE	1 - 250 ml plastic	Yes [X]	No [ ]
RSK_175_CO2	DISSOLVED CARBON DIOXIDE	3 - 40 ml vials	Yes [X]	No [ ]
EPA Method 2320B	TOTAL ALKALINITY	1 - 125 ml plastic	Yes [X]	No [ ]
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	1 - 250 ml plastic	Yes [X]	No [ ]
SM 4500_S2_F	SULFIDE	1 - 250 ml plastic	Yes [X]	No [ ]
SM_3500_FE_D	FERROUS IRON	1 - 125 ml plastic	Yes [X]	No [ ]
RSK_175	METHANE/ETHENE/ETHANE	3 - 40 ml vials	Yes [X]	No [ ]
D516	SULFATE	2 - 125 ml plastic	Yes [X]	No [ ]
EPA Method 353.2	NITRATE			
SM_4500_CI_E	CHLORIDE			

Shipped: Drop-off Albany Service Center [ ]

Sample ID: ETMW-12-1014 Duplicate? Yes [ ] No [X]
Sample Time: 1050 MS/MSD? Yes [ ] No [X]

Laboratory: Test America
Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig	Date: 10/18/17
Job Number: 36380.105370	Weather: Overcast 36°
Well Id. **MW-13**	Time In: 915 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	15.63	
Depth to Bottom:	(feet)	22.75	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	7.12	
Volume of Water in Well:	(gal)	1.14	
Three Well Volumes:	(gal)	3.47	

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: Clear No Sheen/Odor

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)	500				
Duration of Pumping: (min)	30				
Total Volume Removed: (gal)	4	Did well go dry?	Yes [ ]	No [X]	

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	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
920	15.71	11.62	8.56	17	0.581	10.4	5.95	0.370
925	15.87	11.85	8.39	24	0.576	5.8	5.44	0.369
930	15.98	11.76	8.60	45	0.569	47.5	5.72	0.364
935	16.08	11.79	8.78	49	0.553	96.5	1.13	0.364
940	16.17	11.82	8.85	42	0.548	16.7	1.00	0.351
945	16.21	11.82	8.87	34	0.552	5.9	0.97	0.353

Sampling Information:

EPA SW-846 Method 8270	SVOC_PAH's		6 - 250 ml amber	Yes [X] No [ ]
EPA SW-846 Method 8260	VOC's_BTEX		9 - 40 ml vials	Yes [X] No [ ]
EPA Method 610B	LEAD		3 - 250 ml plastic	Yes [X] No [ ]
	MANGANESE			
EPA Method 9012A	TOTAL CYANIDE		3 - 250 ml plastic	Yes [X] No [ ]
RSK_175_CO2	DISSOLVED CARBON DIOXIDE		9 - 40 ml vials	Yes [X] No [ ]
EPA Method 2320B	TOTAL ALKALINITY		3 - 125 ml plastic	Yes [X] No [ ]
EPA Method 351.2	TOTAL KJELDAHL NITROGEN		3 - 250 ml plastic	Yes [X] No [ ]
SM 4500_S2_F	SULFIDE		3 - 250 ml plastic	Yes [X] No [ ]
SM_3500_FE_D	FERROUS IRON		3 - 125 ml plastic	Yes [X] No [ ]
RSK_175	METHANE/ETHENE/ETHANE		9 - 40 ml vials	Yes [X] No [ ]
D516	SULFATE		6 - 125 ml plastic	Yes [X] No [ ]
EPA Method 353.2	NITRATE			
SM_4500_Cl_E	CHLORIDE			

Shipped: Drop-off Albany Service Center [ ]

Sample ID: ETMW-13-1014 Duplicate? Yes [ ] No [X]
Sample Time: 955 MS/MSD? Yes [X] No [ ]

Laboratory: Test America Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig	Date: 10/13/14
Job Number: 36380.105370	Weather: Overcast 50's
Well Id. **MW-14**	Time In: 1225 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	15.02	
Depth to Bottom:	(feet)	23.55	
Depth to Product:	(feet)	-	
Length of Water Column:	(feet)	8.53	
Volume of Water in Well:	(gal)	1.36	
Three Well Volumes:	(gal)	4.09	

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: Clear No Sheen/Odor

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)	150			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	4	Did well go dry?	Yes [ ]	No [ ]

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	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1210	15.18	12.58	8.11	-119	1.18	701	9.01	0.751
1215	15.21	12.50	8.28	-96	1.14	388	3.54	0.722
1220	15.32	12.16	8.22	-56	0.912	147	1.41	0.582
1225	15.45	12.03	8.25	-47	0.870	70.8	0.92	0.556
1230	15.57	12.11	8.22	-60	0.858	33.3	0.79	0.529
1235	15.68	12.09	8.19	-64	0.854	17.5	0.76	0.546

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's		4 - 250 ml amber	Yes [X] No [ ]
EPA SW-846 Method 8260	VOC's BTEX		6 - 40 ml vials	Yes [X] No [ ]
EPA Method 610B	LEAD		2 - 250 ml plastic	Yes [X] No [ ]
	MANGANESE			
EPA Method 9012A	TOTAL CYANIDE		2 - 250 ml plastic	Yes [X] No [ ]
RSK_175_CO2	DISSOLVED CARBON DIOXIDE		6 - 40 ml vials	Yes [X] No [ ]
EPA Method 2320B	TOTAL ALKALINITY		2 - 125 ml plastic	Yes [X] No [ ]
EPA Method 351.2	TOTAL KJELDAHL NITROGEN		2 - 250 ml plastic	Yes [X] No [ ]
SM 4500_S2_F	SULFIDE		2 - 250 ml plastic	Yes [X] No [ ]
SM_3500_FE_D	FERROUS IRON		2 - 125 ml plastic	Yes [X] No [ ]
RSK_175	METHANE/ETHENE/ETHANE		6 - 40 ml vials	Yes [X] No [ ]
D516	SULFATE		4 - 125 ml plastic	Yes [X] No [ ]
EPA Method 353.2	NITRATE			
SM_4500_Cl_E	CHLORIDE			

Shipped: Drop-off Albany Service Center [ ]

Sample ID: LTMW-14-1014 Duplicate? Yes [X] No [ ] **FD-1014**
Sample Time: 1240 MS/MSD? Yes [ ] No [X]

Laboratory: Test America Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel:	Eric Rosenzweig	Date:	10/13/14
Job Number:	36380.105370	Weather:	Clear 60's
Well Id.	**MW-15**	Time In:	1045 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	17.55	
Depth to Bottom:	(feet)	23.00	
Depth to Product:	(feet)		
Length of Water Column:	(feet)	5.45	
Volume of Water in Well:	(gal)	0.87	
Three Well Volumes:	(gal)	2.62	

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: Clear No Sheen/Odor

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)	500			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	4	Did well go dry?	Yes [ ]	No [X]

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	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
10:50	17.71	11.60	8.40	-3	0.970	20.5	4.75	0.625
1055	17.86	11.51	8.13	-28	1.03	14.5	4.90	0.677
1100	18.01	11.74	7.98	-39	1.14	17.2	3.28	0.731
1105	18.17	11.62	8.04	-67	1.11	10.6	0.96	0.711
1110	Top of Pump	11.66	7.97	-72	1.11	9.5	0.82	0.711
1115		11.69	7.92	-83	1.13	9.7	0.70	0.724

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's		2 - 250 ml amber	Yes [X] No [ ]
EPA SW-846 Method 8260	VOC's BTEX		3 - 40 ml vials	Yes [X] No [ ]
EPA Method 610B	LEAD		1 - 250 ml plastic	Yes [X] No [ ]
	MANGANESE			
EPA Method 9012A	TOTAL CYANIDE		1 - 250 ml plastic	Yes [X] No [ ]
RSK_175_CO2	DISSOLVED CARBON DIOXIDE		3 - 40 ml vials	Yes [X] No [ ]
EPA Method 2320B	TOTAL ALKALINITY		1 - 125 ml plastic	Yes [X] No [ ]
EPA Method 351.2	TOTAL KJELDAHL NITROGEN		1 - 250 ml plastic	Yes [X] No [ ]
SM 4500_S2_F	SULFIDE		1 - 250 ml plastic	Yes [X] No [ ]
SM_3500_FE_D	FERROUS IRON		1 - 125 ml plastic	Yes [X] No [ ]
RSK_175	METHANE/ETHENE/ETHANE		3 - 40 ml vials	Yes [X] No [ ]
D516	SULFATE		2 - 125 ml plastic	Yes [X] No [ ]
EPA Method 353.2	NITRATE			
SM_4500_Cl_E	CHLORIDE			

Shipped: Drop-off Albany Service Center [ ]

Sample ID: GMW-15-1014 Duplicate? Yes [ ] No [X]
Sample Time: 1120 MS/MSD? Yes [ ] No [X]

Laboratory: Test America Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel:	Eric Rosenzweig	Date:	10/13
Job Number:	36380.105370	Weather:	Overcast ± 50°
Well Id.	**MW-16**	Time In:	800 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	10.24	
Depth to Bottom:	(feet)	19.45	
Depth to Product:	(feet)		
Length of Water Column:	(feet)	9.21	
Volume of Water in Well:	(gal)	1.47	
Three Well Volumes:	(gal)	4.42	

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: Clear No Sheen/Odor

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)	500			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	4	Did well go dry?	Yes [ ]	No [X]

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	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
805	12.59	10.71	8.60	3	0.480	8.8	7.35	0.316
810	10.96	10.61	8.25	-85	1.17	9.9	1.87	0.752
815	11.18	10.78	8.35	-117	1.19	8.1	1.39	0.759
820	11.45	11.01	8.17	-86	1.17	2.6	1.23	0.757
825	11.84	11.08	8.12	-81	1.17	1.6	1.15	0.754
830	12.16	11.19	8.10	-80	1.18	1.4	1.07	0.752

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	2 - 250 ml amber	Yes [X]	No [ ]
EPA SW-846 Method 8260	VOC's BTEX	3 - 40 ml vials	Yes [X]	No [ ]
EPA Method 610B	LEAD	1 - 250 ml plastic	Yes [X]	No [ ]
	MANGANESE			
EPA Method 9012A	TOTAL CYANIDE	1 - 250 ml plastic	Yes [X]	No [ ]
RSK_175_CO2	DISSOLVED CARBON DIOXIDE	3 - 40 ml vials	Yes [X]	No [ ]
EPA Method 2320B	TOTAL ALKALINITY	1 - 125 ml plastic	Yes [X]	No [ ]
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	1 - 250 ml plastic	Yes [X]	No [ ]
SM 4500_S2_F	SULFIDE	1 - 250 ml plastic	Yes [X]	No [ ]
SM_3500_FE_D	FERROUS IRON	1 - 125 ml plastic	Yes [X]	No [ ]
RSK_175	METHANE/ETHENE/ETHANE	3 - 40 ml vials	Yes [X]	No [ ]
D516	SULFATE	2 - 125 ml plastic	Yes [X]	No [ ]
EPA Method 353.2	NITRATE			
SM_4500_Cl_E	CHLORIDE			

Shipped: Drop-off Albany Service Center [ ]

Sample ID: ETM4-10-2014 Duplicate? Yes [ ] No [X]
Sample Time: 835 MS/MSD? Yes [ ] No [X]

Laboratory: Test America Amherst, New York

APPENDIX B

DATA USABILITY SUMMARY REPORT

Data Validation Services

120 Cobble Creek Road P.O. Box 208
North Creek, NY 12853

Phone 518-251-4429
harry@frontiernet.net

December 6, 2014

Matthew Millias
CDM Smith
One General Motors Dr. Suite 2
Syracuse, NY 13206

RE: **D**ata **U**sability **S**ummary **R**eport for National Grid- Johnstown Landfill Site Data Package
TAL-Buffalo Job No. 480-69237-1

Dear Mr. Millias:

Review has been completed for the data package generated by TestAmerica Laboratories, Inc. that pertains to samples collected 10/13/14 and 10/14/14 at the National Grid Johnstown site. Nine aqueous samples and a field duplicate were analyzed for BTEX, low level PAHs, three dissolved gases, carbon disulfide, lead, manganese, and eight wet chemistry parameters. Methodologies utilized are those of the USEPA SW846 methods 6010B/8260B/8270C/9012, and ASTM, with additional QC requirements of the NYSDEC ASP.

The data packages submitted contain full deliverables for validation, but this usability report is generated from review of the summary form information, with review of sample raw data, and limited review of associated QC raw data. The reported summary forms have been reviewed for application of validation qualifiers, using guidance from the NMPC generic QAPP, USEPA Region 2 validation SOPs, the USEPA National Functional Guidelines for Data Review, and professional judgment, as affects the usability of the data. The following items were reviewed:

* Laboratory Narrative Discussion
* Custody Documentation
* Holding Times
* Surrogate and Internal Standard Recoveries
* Matrix Spike Recoveries/Duplicate Correlations
* Field Duplicate Correlations
* Laboratory Control Sample(LCS)
* Preparation/Calibration Blanks
* Control Spike/Laboratory Control Samples
* Calibration/Low Level Standard Responses
* Instrumental Tunes
* ICP Serial Dilution Correlations
* Instrument IDLs
* 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.

In summary, most sample results are usable either as reported, or with minor qualification.

Copies of the laboratory case narrative 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 recommended qualifications applied thereupon.

The login form generated at sample receipt notes that some vials were received broken with insufficient volume for testing. No further information about this issue is provided in the data package, including sample ID or affected analytes. The laboratory case narrative states all were received in good condition, and all required analyses are reported.

BTEX by EPA8260B/NYSDEC ASP

Sample holding times were met and instrumental tune fragmentations are within acceptance ranges. Surrogate and internal standard recoveries are within required limits. Blanks show no contamination.

Calibrations standards show acceptable responses within analytical protocol and validation action limits.

The matrix spikes of MW-13-1014 show acceptable recoveries and correlations.

The blind field duplicate correlations of MW-14-1014 fall within guidance limits.

Some samples were processed only at dilution due to high concentrations of target analytes or initial foaming. This results in elevated reporting limits for undetected analytes.

PAHs by EPA8270C/NYSDEC ASP

Surrogate and internal standard recoveries are within required limits, unless diluted beyond an applicable evaluation.

Results for analytes initially reported with the laboratory "E" flag have been derived from the dilution analysis, thus reflecting responses within the established linear range of the instrument. The exception is that the results for fluorene and phenathrene in MW-13-1014 are derived from the initial analysis due to dilution beyond detection in the reanalysis. Those values are then qualified as estimated.

Due to an outlying calibration standard responses (26%D an 34%D), the detected results for benzo(g,h,i)perylene in all samples have been qualified as estimated, with a possible high bias.

The matrix spike recoveries and duplicate correlations of MW-13-1014 show acceptable recoveries and correlations, with the exception of two slightly elevated correlations for analytes that produced acceptable recoveries; no qualification is indicated.

Six of the target analytes show outlying correlations in the blind field duplicate evaluations of MW-14-1014. Four other of the analytes have correlations exactly at the limits of acceptance. The results for benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, chrysene, fluoranthene, and phenathrene in the parent sample and its duplicate have been qualified as estimated in value.

Some samples were processed only at dilution due to high concentrations of target analytes. This results in elevated reporting limits for undetected analytes.

Methane, Ethane, Ethene, and CO2 by RSK-175

The matrix spikes of MW-13-1014 show acceptable recoveries and correlations.

The blind field duplicate correlations of MW-14-1014 fall within guidance limits.

Instrument performance is compliant, blanks show no contamination, and reported results are substantiated by raw data.

Some samples were processed only at dilution due to high concentrations of target analytes. This results in elevated reporting limits for undetected analytes.

Lead and Manganese by EPA 6010B/NYSDEC ASP

The matrix spikes of MW-13-1014 acceptable accuracy and precision.

The blind field duplicate correlation of lead in MW-14-1014 falls outside guidance limits (>±CRDL). The results for that element in the parent sample and its duplicate have been qualified as estimated.

The ICP Serial Dilution evaluation of MW-13-1014 is acceptable.

Instrument performance is compliant, blanks show no contamination affecting reported results, and reported results are substantiated by the raw data.

Some of the entries on the low level standard forms incorrectly state "ND." Recoveries on those forms are correct.

Wet Chemistry—Chloride, Sulfide, Sulfate, Nitrate, TKN, Alkalinity, Ferrous Iron, and Total Cyanide

Due to the very short holding time from sample collection (15 minutes), all ferrous ion analyses were conducted beyond the holding time, and those results have been qualified as estimated in value, with a likely low bias.

Due to delays in shipments, results for nitrate in MW-13-1014, MW-16-1014, and FD-1014 are qualified as estimated, with a low bias.

Calibration standard responses are compliant. Blanks show no detections that above the reporting limits, with the exception of s TKN detection. Associated sample results are sufficiently elevated as to not be considered contamination.

Matrix spikes/laboratory duplicates of MW-13-1014 show acceptable recoveries/correlations, with the exception of the recovery for TKN (88%). The result for that analyte in the parent sample is qualified as estimated.

The following additional duplicate correlations were performed:

- TKN and total cyanide in MW-7-1014
- Total cyanide in M W-4-1014
- Ferrous ion in MW-16-1014
- Sulfide in MW-11-1014

One cyanide duplicate correlation is slightly elevated; no qualification is indicated.

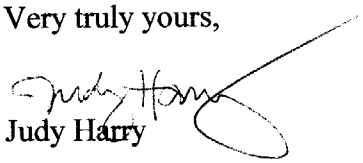
The blind field duplicate correlations of MW-14-1014 fall within guidance limits.

Data Package Completeness

Although some of the specific NYSDEC Category B deliverables were not 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.

Very truly yours,



Judy Harry

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.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

CLIENT and LABORATORY SAMPLE IDs and CASE NARRATIVE

SAMPLE SUMMARY

Client: CDM Smith, Inc.

Job Number: 480-70183-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
480-70183-1FD	EW-1-1014	Water	10/27/2014 0745	10/28/2014 0200
480-70183-2FD	FD-1014	Water	10/20/2014 0000	10/28/2014 0200
480-70183-3	MW-2-1014	Water	10/27/2014 0850	10/28/2014 0200
480-70183-4	MW-3-1014	Water	10/20/2014 1435	10/28/2014 0200
480-70183-5	MW-7-1014	Water	10/20/2014 1050	10/28/2014 0200
480-70183-5MS	MW-7-1014	Water	10/20/2014 1050	10/28/2014 0200
480-70183-5MSD	MW-7-1014	Water	10/20/2014 1050	10/28/2014 0200
480-70183-6	MW-8-1014	Water	10/20/2014 1210	10/28/2014 0200
480-70183-7	MW-9-1014	Water	10/20/2014 1310	10/28/2014 0200
480-70183-8	MW-10-0414	Water	10/20/2014 0935	10/28/2014 0200
480-70183-9	MW-12-0414	Water	10/27/2014 1000	10/28/2014 0200
480-70183-10	Trip Blank	Water	10/27/2014 0000	10/28/2014 0200

Job Narrative
480-70183-1

Receipt
The samples were received on 10/28/2014 2:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.6° C, 3.2° C and 4.0° C.

Except:

The following samples were received outside of holding time for 8270: FD-1014 (480-70183-2), MW-10-0414 (480-70183-8), MW-3-1014 (480-70183-4), MW-7-1014 (480-70183-5), MW-7-1014 (480-70183-5 MS), MW-7-1014 (480-70183-5 MSD), MW-8-1014 (480-70183-6), MW-9-1014 (480-70183-7). Per client/pm instruction testing lab was instructed to process samples.

GC/MS VOA
Method(s) 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: EW-1-1014 (480-70183-1). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The following volatile sample was analyzed with significant headspace in the sample vial: EW-1-1014 DL (480-70183-1 DL). Significant headspace is defined as a bubble greater than 6 mm in diameter.

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

GC/MS Semi VOA
Method(s) 8270D LL: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 210528 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 8270D LL: Surrogate recovery for the following sample was outside control limits: MW-7-1014 (480-70183-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8270D LL: The following sample(s) was diluted due to the nature of the sample matrix: MW-7-1014 (480-70183-5). Elevated reporting limits (RLs) are provided.

Method(s) 8270D LL: The following sample(s) was diluted due to the nature of the sample matrix: EW-1-1014 (480-70183-1), MW-10-0414 (480-70183-8), MW-12-0414 (480-70183-9). Elevated reporting limits (RLs) are provided.

Method(s) 8270D LL: Surrogate recovery for the following sample(s) was outside control limits: MW-7-1014 DL (480-70183-5 DL). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

Organic Prep
Method(s) 3510C: The following samples was prepared outside of preparation holding time due to the samples being received by the lab after the method holding time had expired: FD-1014 (480-70183-2), MW-10-0414 (480-70183-8), MW-3-1014 (480-70183-4), MW-7-1014 (480-70183-5), MW-7-1014 (480-70183-5 MS), MW-7-1014 (480-70183-5 MSD), MW-8-1014 (480-70183-6), MW-9-1014 (480-70183-7).

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

QUALIFIED SAMPLE RESULTS FORMS

Client: CDM Smith, Inc.
Project/Site: Johnstown (N.Market Street)

TestAmerica Job ID: 480-69237-1

Client Sample ID: MW-4-1014
Date Collected: 10/13/14 14:25
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-1
Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/21/14 00:36	1
Toluene	ND		1.0		ug/L			10/21/14 00:36	1
Ethylbenzene	ND		1.0		ug/L			10/21/14 00:36	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/21/14 00:36	1
o-Xylene	ND		1.0		ug/L			10/21/14 00:36	1
Xylenes, Total	ND		2.0		ug/L			10/21/14 00:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*66 - 137*		*10/21/14 00:36*	*1*
Toluene-d8 (Surr)	*98*		*71 - 126*		*10/21/14 00:36*	*1*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*10/21/14 00:36*	*1*
Dibromofluoromethane (Surr)	*102*		*60 - 140*		*10/21/14 00:36*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Acenaphthylene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Anthracene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Benzo(a)anthracene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Benzo(a)pyrene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Benzo(b)fluoranthene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Benzo(g,h,i)perylene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Benzo(k)fluoranthene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Chrysene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Dibenz(a,h)anthracene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Fluoranthene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Fluorene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Indeno(1,2,3-cd)pyrene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Naphthalene	**2.2**		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Phenanthrene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1
Pyrene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*78*		*48 - 120*	*10/16/14 05:53*	*10/20/14 20:08*	*1*
Nitrobenzene-d5	*75*		*46 - 120*	*10/16/14 05:53*	*10/20/14 20:08*	*1*
p-Terphenyl-d14	*101*		*24 - 136*	*10/16/14 05:53*	*10/20/14 20:08*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	ND		7.5		ug/L			10/15/14 12:44	1
Ethene	ND		7.0		ug/L			10/15/14 12:44	1
Methane	ND		4.0		ug/L			10/15/14 12:44	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	**19000**		1000		ug/L			10/20/14 10:35	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.010		mg/L		10/17/14 12:15	10/20/14 18:43	1
Manganese	ND		0.0030		mg/L		10/17/14 12:15	10/20/14 18:43	1

Client Sample ID: MW-4-1014

Date Collected: 10/13/14 14:25
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-1
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		0.20		mg/L		10/23/14 07:31	10/23/14 12:36	1
Nitrate as N	**2.7**		0.050		mg/L			10/15/14 09:11	1
Cyanide, Total	ND		0.010		mg/L		10/21/14 09:58	10/21/14 22:36	1
Sulfate	**50.8**		10.0		mg/L			10/22/14 12:33	2
Ferrous Iron	ND	HF UJ	0.10		mg/L			10/15/14 12:37	1
Chloride	**329**		10.0		mg/L			10/27/14 13:45	2
Sulfide	ND		1.0		mg/L			10/20/14 06:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**400**		5.0		mg/L			10/21/14 11:22	1

Client Sample ID: MW-7-1014

Date Collected: 10/14/14 09:55
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-2
Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/21/14 01:00	1
Toluene	ND		1.0		ug/L			10/21/14 01:00	1
Ethylbenzene	ND		1.0		ug/L			10/21/14 01:00	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/21/14 01:00	1
o-Xylene	ND		1.0		ug/L			10/21/14 01:00	1
Xylenes, Total	ND		2.0		ug/L			10/21/14 01:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*66 - 137*		*10/21/14 01:00*	*1*
Toluene-d8 (Surr)	*97*		*71 - 126*		*10/21/14 01:00*	*1*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*10/21/14 01:00*	*1*
Dibromofluoromethane (Surr)	*96*		*60 - 140*		*10/21/14 01:00*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Acenaphthylene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Anthracene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Benzo(a)anthracene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Benzo(a)pyrene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Benzo(b)fluoranthene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Benzo(g,h,i)perylene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Benzo(k)fluoranthene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Chrysene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Dibenz(a,h)anthracene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Fluoranthene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Fluorene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Indeno(1,2,3-cd)pyrene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Naphthalene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Phenanthrene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1
Pyrene	ND		0.46		ug/L		10/16/14 05:53	10/20/14 20:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*93*		*48 - 120*	*10/16/14 05:53*	*10/20/14 20:36*	*1*

Client Sample ID: MW-7-1014

Date Collected: 10/14/14 09:55
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-2
Matrix: Ground Water

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*98*		*46 - 120*	*10/16/14 05:53*	*10/20/14 20:36*	*1*
p-Terphenyl-d14	*106*		*24 - 136*	*10/16/14 05:53*	*10/20/14 20:36*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	ND		7.5		ug/L			10/15/14 10:52	1
Ethene	ND		7.0		ug/L			10/15/14 10:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	**13000**		1000		ug/L			10/20/14 10:46	1

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**82**		20		ug/L			10/15/14 11:53	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.010		mg/L		10/17/14 12:15	10/20/14 18:46	1
Manganese	**0.49**		0.0030		mg/L		10/17/14 12:15	10/20/14 18:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	**2.0**		0.20		mg/L		10/23/14 13:01	10/23/14 20:08	1
Nitrate as N	ND		0.050		mg/L			10/15/14 10:12	1
Cyanide, Total	**0.13**		0.010		mg/L		10/21/14 15:22	10/21/14 23:24	1
Sulfate	**457**		100		mg/L			10/22/14 12:33	20
Ferrous Iron	ND	HF UJ	0.10		mg/L			10/15/14 12:37	1
Chloride	**62.8**		5.0		mg/L			10/27/14 13:05	1
Sulfide	ND		1.0		mg/L			10/20/14 06:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**392**		5.0		mg/L			10/21/14 11:33	1

Client Sample ID: MW-10-1014

Date Collected: 10/14/14 08:35
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-3
Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/21/14 01:24	1
Toluene	ND		1.0		ug/L			10/21/14 01:24	1
Ethylbenzene	ND		1.0		ug/L			10/21/14 01:24	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/21/14 01:24	1
o-Xylene	ND		1.0		ug/L			10/21/14 01:24	1
Xylenes, Total	ND		2.0		ug/L			10/21/14 01:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*66 - 137*		*10/21/14 01:24*	*1*
Toluene-d8 (Surr)	*96*		*71 - 126*		*10/21/14 01:24*	*1*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*10/21/14 01:24*	*1*
Dibromofluoromethane (Surr)	*100*		*60 - 140*		*10/21/14 01:24*	*1*

Client: CDM Smith, Inc.
Project/Site: Johnstown (N.Market Street)

TestAmerica Job ID: 480-69237-1

Client Sample ID: MW-10-1014
Date Collected: 10/14/14 08:35
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-3
Matrix: Ground Water

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Acenaphthylene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Anthracene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Benzo(a)anthracene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Benzo(a)pyrene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Benzo(b)fluoranthene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Benzo(g,h,i)perylene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Benzo(k)fluoranthene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Chrysene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Dibenz(a,h)anthracene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Fluoranthene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Fluorene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Indeno(1,2,3-cd)pyrene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Naphthalene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Phenanthrene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1
Pyrene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*76*		*48 - 120*	*10/16/14 05:53*	*10/20/14 21:04*	*1*
Nitrobenzene-d5	*75*		*46 - 120*	*10/16/14 05:53*	*10/20/14 21:04*	*1*
p-Terphenyl-d14	*99*		*24 - 136*	*10/16/14 05:53*	*10/20/14 21:04*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	ND		7.5		ug/L			10/15/14 11:09	1
Ethene	ND		7.0		ug/L			10/15/14 11:09	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	**25000**		1000		ug/L			10/20/14 10:59	1

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**130**		20		ug/L			10/15/14 12:10	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.010		mg/L		10/17/14 12:15	10/21/14 11:40	1
Manganese	**1.3**		0.0030		mg/L		10/17/14 12:15	10/20/14 18:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	**6.2**		0.40		mg/L		10/23/14 13:01	10/23/14 20:48	2
Nitrate as N	ND		0.050		mg/L			10/15/14 10:11	1
Cyanide, Total	**0.10**		0.010		mg/L		10/21/14 15:22	10/21/14 23:26	1
Sulfate	**89.7**		50.0		mg/L			10/22/14 12:33	10
Ferrous Iron	ND	HF UJ	0.10		mg/L			10/15/14 12:37	1
Chloride	**664**		20.0		mg/L			10/27/14 14:29	4
Sulfide	ND		1.0		mg/L			10/20/14 06:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**548**		5.0		mg/L			10/21/14 11:43	1

Client Sample ID: MW-11-1014
Date Collected: 10/14/14 11:35
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-4
Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	22		1.0		ug/L			10/21/14 01:48	1
Toluene	1.9		1.0		ug/L			10/21/14 01:48	1
Ethylbenzene	7.8		1.0		ug/L			10/21/14 01:48	1
m-Xylene & p-Xylene	2.1		2.0		ug/L			10/21/14 01:48	1
o-Xylene	2.6		1.0		ug/L			10/21/14 01:48	1
Xylenes, Total	4.7		2.0		ug/L			10/21/14 01:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*66 - 137*		*10/21/14 01:48*	*1*
Toluene-d8 (Surr)	*98*		*71 - 126*		*10/21/14 01:48*	*1*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*10/21/14 01:48*	*1*
Dibromofluoromethane (Surr)	*101*		*60 - 140*		*10/21/14 01:48*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	~~100~~	~~E~~ 110	0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Acenaphthylene	~~140~~	~~E~~ 150	0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Anthracene	16		0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Benzo(a)anthracene	4.8		0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Benzo(a)pyrene	4.7		0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Benzo(b)fluoranthene	4.6		0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Benzo(g,h,i)perylene	1.8	J+	0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Benzo(k)fluoranthene	2.1		0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Chrysene	7.6		0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Dibenz(a,h)anthracene	ND		0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Fluoranthene	16		0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Fluorene	44		0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Indeno(1,2,3-cd)pyrene	1.2		0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Naphthalene	~~50~~	~~E~~ 51	0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Phenanthrene	~~60~~	~~E~~ 62	0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1
Pyrene	20		0.47		ug/L		10/16/14 05:53	10/20/14 21:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*82*		*48 - 120*	*10/16/14 05:53*	*10/20/14 21:32*	*1*
Nitrobenzene-d5	*82*		*46 - 120*	*10/16/14 05:53*	*10/20/14 21:32*	*1*
p-Terphenyl-d14	*100*		*24 - 136*	*10/16/14 05:53*	*10/20/14 21:32*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
~~Acenaphthene~~	~~110~~		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
~~Acenaphthylene~~	~~150~~		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
~~Anthracene~~	~~17~~		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
~~Benzo(a)anthracene~~	~~5.0~~		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
~~Benzo(a)pyrene~~	~~2.5~~		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
~~Benzo(b)fluoranthene~~	~~5.8~~		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
~~Benzo(g,h,i)perylene~~	~~3.5~~		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
~~Benzo(k)fluoranthene~~	~~ND~~		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
~~Chrysene~~	~~8.5~~		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
~~Dibenz(a,h)anthracene~~	~~ND~~		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
~~Fluoranthene~~	~~17~~		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5

Client: CDM Smith, Inc.
Project/Site: Johnstown (N.Market Street)

TestAmerica Job ID: 480-69237-1

Client Sample ID: MW-11-1014

Lab Sample ID: 480-69237-4

Date Collected: 10/14/14 11:35

Matrix: Ground Water

Date Received: 10/15/14 01:30

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	43		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
Indeno(1,2,3-cd)pyrene	ND		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
Naphthalene	51		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
Phenanthrene	62		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5
Pyrene	22		2.3		ug/L		10/16/14 05:53	10/21/14 15:04	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*87*		*48 - 120*	*10/16/14 05:53*	*10/21/14 15:04*	*5*
Nitrobenzene-d5	*81*		*46 - 120*	*10/16/14 05:53*	*10/21/14 15:04*	*5*
p-Terphenyl-d14	*104*		*24 - 136*	*10/16/14 05:53*	*10/21/14 15:04*	*5*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	ND		75		ug/L			10/15/14 11:26	10
Ethene	ND		70		ug/L			10/15/14 11:26	10
Methane	180		40		ug/L			10/15/14 11:26	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	20000		1000		ug/L			10/20/14 11:14	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.014		0.010		mg/L		10/17/14 12:15	10/21/14 11:43	1
Manganese	0.56		0.0030		mg/L		10/17/14 12:15	10/20/14 19:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	1.2		0.20		mg/L		10/27/14 16:10	10/28/14 09:59	1
Nitrate as N	0.059		0.050		mg/L			10/15/14 11:23	1
Cyanide, Total	0.021		0.010		mg/L		10/21/14 15:22	10/21/14 23:32	1
Sulfate	44.3		10.0		mg/L			10/22/14 12:33	2
Ferrous Iron	ND	HF UJ	0.10		mg/L			10/15/14 12:37	1
Chloride	364		10.0		mg/L			10/27/14 13:45	2
Sulfide	1.8		1.0		mg/L			10/20/14 06:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	457		5.0		mg/L			10/21/14 11:54	1

Client Sample ID: MW-12-1014

Lab Sample ID: 480-69237-5

Date Collected: 10/14/14 10:50

Matrix: Ground Water

Date Received: 10/15/14 01:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/21/14 02:12	1
Toluene	ND		1.0		ug/L			10/21/14 02:12	1
Ethylbenzene	ND		1.0		ug/L			10/21/14 02:12	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/21/14 02:12	1
o-Xylene	ND		1.0		ug/L			10/21/14 02:12	1
Xylenes, Total	ND		2.0		ug/L			10/21/14 02:12	1

Client: CDM Smith, Inc.
Project/Site: Johnstown (N.Market Street)

TestAmerica Job ID: 480-69237-1

Client Sample ID: MW-12-1014
Date Collected: 10/14/14 10:50
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-5
Matrix: Ground Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		66 - 137		10/21/14 02:12	1
Toluene-d8 (Surr)	100		71 - 126		10/21/14 02:12	1
4-Bromofluorobenzene (Surr)	103		73 - 120		10/21/14 02:12	1
Dibromofluoromethane (Surr)	99		60 - 140		10/21/14 02:12	1

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Acenaphthylene	**0.63**		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Anthracene	**0.88**		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Benzo(a)anthracene	**1.5**		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Benzo(a)pyrene	**1.8**		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Benzo(b)fluoranthene	**2.1**		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Benzo(g,h,i)perylene	**0.74**	J+	0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Benzo(k)fluoranthene	**0.74**		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Chrysene	**1.6**		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Dibenz(a,h)anthracene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Fluoranthene	**2.0**		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Fluorene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Indeno(1,2,3-cd)pyrene	**0.51**		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Naphthalene	**1.6**		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Phenanthrene	**2.0**		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1
Pyrene	**2.8**		0.48		ug/L		10/16/14 05:53	10/20/14 21:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	91		48 - 120	10/16/14 05:53	10/20/14 21:59	1
Nitrobenzene-d5	95		46 - 120	10/16/14 05:53	10/20/14 21:59	1
p-Terphenyl-d14	113		24 - 136	10/16/14 05:53	10/20/14 21:59	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	ND		7.5		ug/L			10/15/14 12:27	1
Ethene	ND		7.0		ug/L			10/15/14 12:27	1
Methane	ND		4.0		ug/L			10/15/14 12:27	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	**21000**		1000		ug/L			10/20/14 11:25	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.018**		0.010		mg/L		10/17/14 12:15	10/21/14 11:46	1
Manganese	**1.2**		0.0030		mg/L		10/17/14 12:15	10/20/14 19:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	**0.61**		0.20		mg/L		10/27/14 16:10	10/28/14 09:59	1
Nitrate as N	**3.7**		0.050		mg/L			10/15/14 11:17	1
Cyanide, Total	**0.013**		0.010		mg/L		10/23/14 12:13	10/23/14 17:21	1
Sulfate	**73.5**		25.0		mg/L			10/22/14 12:35	5
Ferrous Iron	ND	HF UJ	0.10		mg/L			10/15/14 12:37	1
Chloride	**493**		20.0		mg/L			10/27/14 14:29	4
Sulfide	ND		1.0		mg/L			10/20/14 06:30	1

Client Sample ID: MW-12-1014

Lab Sample ID: 480-69237-5

Date Collected: 10/14/14 10:50

Matrix: Ground Water

Date Received: 10/15/14 01:30

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	414		5.0		mg/L			10/21/14 12:03	1

Client Sample ID: MW-13-1014

Lab Sample ID: 480-69237-6

Date Collected: 10/13/14 09:50

Matrix: Ground Water

Date Received: 10/15/14 01:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	300		10		ug/L			10/21/14 02:36	10
Toluene	430		10		ug/L			10/21/14 02:36	10
Ethylbenzene	340		10		ug/L			10/21/14 02:36	10
m-Xylene & p-Xylene	480		20		ug/L			10/21/14 02:36	10
o-Xylene	210		10		ug/L			10/21/14 02:36	10
Xylenes, Total	690		20		ug/L			10/21/14 02:36	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*66 - 137*		*10/21/14 02:36*	*10*
Toluene-d8 (Surr)	*98*		*71 - 126*		*10/21/14 02:36*	*10*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*10/21/14 02:36*	*10*
Dibromofluoromethane (Surr)	*99*		*60 - 140*		*10/21/14 02:36*	*10*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	~~170~~	~~E~~ 130	0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Acenaphthylene	~~380~~	~~E~~ 450	0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Anthracene	14		0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Benzo(a)anthracene	1.9		0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Benzo(a)pyrene	1.6		0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Benzo(b)fluoranthene	2.8		0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Benzo(g,h,i)perylene	0.60	J+	0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Benzo(k)fluoranthene	0.53		0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Chrysene	1.8		0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Dibenz(a,h)anthracene	ND		0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Fluoranthene	8.2		0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Fluorene	94	E J	0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Indeno(1,2,3-cd)pyrene	0.48		0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Naphthalene	~~920~~	~~E~~ 4200	0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Phenanthrene	70	E J	0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1
Pyrene	9.7		0.47		ug/L		10/16/14 05:53	10/20/14 22:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*85*		*48 - 120*	*10/16/14 05:53*	*10/20/14 22:27*	*1*
Nitrobenzene-d5	*38*	*X*	*46 - 120*	*10/16/14 05:53*	*10/20/14 22:27*	*1*
p-Terphenyl-d14	*111*		*24 - 136*	*10/16/14 05:53*	*10/20/14 22:27*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
~~Acenaphthene~~	~~130~~		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
~~Acenaphthylene~~	~~450~~		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
~~Anthracene~~	~~ND~~		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
~~Benzo(a)anthracene~~	~~ND~~		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
~~Benzo(a)pyrene~~	~~ND~~		93		ug/L		10/16/14 05:53	10/23/14 19:24	200

Client Sample ID: MW-13-1014

Date Collected: 10/13/14 09:50
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-6
Matrix: Ground Water

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo(b)fluoranthene	ND		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
Benzo(g,h,i)perylene	ND		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
Benzo(k)fluoranthene	ND		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
Chrysene	ND		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
Dibenz(a,h)anthracene	ND		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
Fluoranthene	ND		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
Fluorene	ND		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
Indeno(1,2,3-cd)pyrene	ND		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
Naphthalene	4200		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
Phenanthrene	ND		93		ug/L		10/16/14 05:53	10/23/14 19:24	200
Pyrene	ND		93		ug/L		10/16/14 05:53	10/23/14 19:24	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*75*		*48 - 120*	*10/16/14 05:53*	*10/23/14 19:24*	*200*
Nitrobenzene-d5	*65*		*46 - 120*	*10/16/14 05:53*	*10/23/14 19:24*	*200*
p-Terphenyl-d14	*94*		*24 - 136*	*10/16/14 05:53*	*10/23/14 19:24*	*200*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	ND		7.5		ug/L			10/15/14 14:36	1
Ethene	ND		7.0		ug/L			10/15/14 14:36	1
Methane	68		4.0		ug/L			10/15/14 14:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	2000		1000		ug/L			10/20/14 11:33	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.010		mg/L		10/17/14 12:15	10/21/14 11:49	1
Manganese	0.16		0.0030		mg/L		10/17/14 12:15	10/20/14 19:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	1.2	J-	0.20		mg/L		10/27/14 16:10	10/28/14 09:50	1
Nitrate as N	ND	UJ	0.050		mg/L			10/15/14 09:05	1
Cyanide, Total	0.24		0.010		mg/L		10/21/14 09:58	10/21/14 22:27	1
Sulfate	30.8		5.0		mg/L			10/22/14 12:10	1
Ferrous Iron	ND	HF UJ	0.10		mg/L			10/15/14 12:37	1
Chloride	8.9		5.0		mg/L			10/27/14 13:08	1
Sulfide	1.4		1.0		mg/L			10/20/14 06:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	255		5.0		mg/L			10/21/14 11:06	1

Client Sample ID: MW-14-1014

Date Collected: 10/13/14 12:40
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-7
Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.7		1.0		ug/L			10/21/14 03:00	1
Toluene	ND		1.0		ug/L			10/21/14 03:00	1

Client: CDM Smith, Inc.
Project/Site: Johnstown (N.Market Street)

TestAmerica Job ID: 480-69237-1

Client Sample ID: MW-14-1014
Date Collected: 10/13/14 12:40
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-7
Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0		ug/L			10/21/14 03:00	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/21/14 03:00	1
o-Xylene	ND		1.0		ug/L			10/21/14 03:00	1
Xylenes, Total	ND		2.0		ug/L			10/21/14 03:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*66 - 137*		*10/21/14 03:00*	*1*
Toluene-d8 (Surr)	*98*		*71 - 126*		*10/21/14 03:00*	*1*
4-Bromofluorobenzene (Surr)	*105*		*73 - 120*		*10/21/14 03:00*	*1*
Dibromofluoromethane (Surr)	*101*		*60 - 140*		*10/21/14 03:00*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**2.0**		0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Acenaphthylene	**2.9**		0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Anthracene	**0.49**		0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Benzo(a)anthracene	**1.9**	J	0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Benzo(a)pyrene	**2.4**	J	0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Benzo(b)fluoranthene	**3.8**		0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Benzo(g,h,i)perylene	**1.3**	J+	0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Benzo(k)fluoranthene	**1.1**	J	0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Chrysene	**2.1**	J	0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Dibenz(a,h)anthracene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Fluoranthene	**3.2**	J	0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Fluorene	ND		0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Indeno(1,2,3-cd)pyrene	**0.95**		0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Naphthalene	**1.1**		0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Phenanthrene	**1.4**	J	0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1
Pyrene	**5.0**		0.49		ug/L		10/16/14 05:53	10/20/14 22:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*86*		*48 - 120*	*10/16/14 05:53*	*10/20/14 22:55*	*1*
Nitrobenzene-d5	*90*		*46 - 120*	*10/16/14 05:53*	*10/20/14 22:55*	*1*
p-Terphenyl-d14	*104*		*24 - 136*	*10/16/14 05:53*	*10/20/14 22:55*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	ND		7.5		ug/L			10/15/14 14:18	1
Ethene	ND		7.0		ug/L			10/15/14 14:18	1
Methane	**100**		4.0		ug/L			10/15/14 14:18	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	**7500**		1000		ug/L			10/20/14 13:23	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.031**	J	0.010		mg/L		10/17/14 12:15	10/21/14 12:03	1
Manganese	**0.34**		0.0030		mg/L		10/17/14 12:15	10/20/14 19:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	**2.2**		0.20		mg/L		10/23/14 13:01	10/23/14 20:08	1

Client Sample ID: MW-14-1014

Lab Sample ID: 480-69237-7

Date Collected: 10/13/14 12:40

Matrix: Ground Water

Date Received: 10/15/14 01:30

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.061**		0.050		mg/L			10/15/14 09:09	1
Cyanide, Total	**0.20**		0.010		mg/L		10/22/14 09:12	10/22/14 20:48	1
Sulfate	**33.3**		5.0		mg/L			10/22/14 12:12	1
Ferrous Iron	ND	HF UJ	0.10		mg/L			10/15/14 12:37	1
Chloride	**8.9**		5.0		mg/L			10/27/14 13:08	1
Sulfide	ND		1.0		mg/L			10/20/14 06:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**438**		5.0		mg/L			10/21/14 12:12	1

Client Sample ID: MW-15-1014

Lab Sample ID: 480-69237-8

Date Collected: 10/13/14 11:20

Matrix: Ground Water

Date Received: 10/15/14 01:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**300**		5.0		ug/L			10/21/14 03:24	5
Toluene	**5.8**		5.0		ug/L			10/21/14 03:24	5
Ethylbenzene	**74**		5.0		ug/L			10/21/14 03:24	5
m-Xylene & p-Xylene	ND		10		ug/L			10/21/14 03:24	5
o-Xylene	**28**		5.0		ug/L			10/21/14 03:24	5
Xylenes, Total	**28**		10		ug/L			10/21/14 03:24	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*66 - 137*		*10/21/14 03:24*	*5*
Toluene-d8 (Surr)	*95*		*71 - 126*		*10/21/14 03:24*	*5*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*10/21/14 03:24*	*5*
Dibromofluoromethane (Surr)	*101*		*60 - 140*		*10/21/14 03:24*	*5*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**24**		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Acenaphthylene	**3.9**		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Anthracene	**0.81**		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Benzo(a)anthracene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Benzo(a)pyrene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Benzo(b)fluoranthene	**0.72**		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Benzo(g,h,i)perylene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Benzo(k)fluoranthene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Chrysene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Dibenz(a,h)anthracene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Fluoranthene	**0.93**		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Fluorene	**5.2**		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Indeno(1,2,3-cd)pyrene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Naphthalene	~~170~~ E	210	0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Phenanthrene	**3.7**		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1
Pyrene	**1.1**		0.48		ug/L		10/16/14 05:53	10/20/14 23:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*95*		*48 - 120*	*10/16/14 05:53*	*10/20/14 23:23*	*1*
Nitrobenzene-d5	*100*		*46 - 120*	*10/16/14 05:53*	*10/20/14 23:23*	*1*

Client Sample ID: MW-15-1014

Date Collected: 10/13/14 11:20
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-8

Matrix: Ground Water

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl-d14	*113*		*24 - 136*	*10/16/14 05:53*	*10/20/14 23:23*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	27		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Acenaphthylene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Anthracene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Benzo(a)anthracene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Benzo(a)pyrene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Benzo(b)fluoranthene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Benzo(g,h,i)perylene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Benzo(k)fluoranthene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Chrysene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Dibenz(a,h)anthracene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Fluoranthene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Fluorene	5.7		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Indeno(1,2,3-cd)pyrene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Naphthalene	210		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Phenanthrene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10
Pyrene	ND		4.8		ug/L		10/16/14 05:53	10/21/14 16:00	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	*102*		*48 - 120*	*10/16/14 05:53*	*10/21/14 16:00*	*10*
Nitrobenzene-d5	*112*		*46 - 120*	*10/16/14 05:53*	*10/21/14 16:00*	*10*
p-Terphenyl-d14	*128*		*24 - 136*	*10/16/14 05:53*	*10/21/14 16:00*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	ND		380		ug/L			10/15/14 15:41	50
Ethene	ND		350		ug/L			10/15/14 15:41	50
Methane	2400		200		ug/L			10/15/14 15:41	50

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	25000		1000		ug/L			10/20/14 13:31	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.010		mg/L		10/17/14 12:15	10/21/14 12:14	1
Manganese	1.0		0.0030		mg/L		10/17/14 12:15	10/20/14 19:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	2.9		0.20		mg/L		10/23/14 13:01	10/23/14 20:08	1
Nitrate as N	ND		0.050		mg/L			10/15/14 08:41	1
Cyanide, Total	0.58		0.020		mg/L		10/21/14 15:22	10/21/14 23:45	2
Sulfate	91.1		50.0		mg/L			10/22/14 12:35	10
Ferrous Iron	ND	HF UJ	0.10		mg/L			10/15/14 12:37	1
Chloride	44.2		5.0		mg/L			10/27/14 13:08	1
Sulfide	ND		1.0		mg/L			10/20/14 06:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	557		5.0		mg/L			10/21/14 12:24	1

Client Sample ID: MW-16-1014
Date Collected: 10/13/14 08:35
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-9
Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**59**		5.0		ug/L			10/21/14 03:48	5
Toluene	ND		5.0		ug/L			10/21/14 03:48	5
Ethylbenzene	**41**		5.0		ug/L			10/21/14 03:48	5
m-Xylene & p-Xylene	ND		10		ug/L			10/21/14 03:48	5
o-Xylene	**17**		5.0		ug/L			10/21/14 03:48	5
Xylenes, Total	**17**		10		ug/L			10/21/14 03:48	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*66 - 137*		*10/21/14 03:48*	*5*
Toluene-d8 (Surr)	*96*		*71 - 126*		*10/21/14 03:48*	*5*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*10/21/14 03:48*	*5*
Dibromofluoromethane (Surr)	*100*		*60 - 140*		*10/21/14 03:48*	*5*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**40**		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Acenaphthylene	**31**		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Anthracene	**2.8**		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Benzo(a)anthracene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Benzo(a)pyrene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Benzo(b)fluoranthene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Benzo(g,h,i)perylene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Benzo(k)fluoranthene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Chrysene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Dibenz(a,h)anthracene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Fluoranthene	**2.7**		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Fluorene	**22**		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Indeno(1,2,3-cd)pyrene	ND		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Naphthalene	**1.7**		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Phenanthrene	**18**		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1
Pyrene	**3.0**		0.48		ug/L		10/16/14 05:53	10/20/14 23:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*94*		*48 - 120*	*10/16/14 05:53*	*10/20/14 23:51*	*1*
Nitrobenzene-d5	*102*		*46 - 120*	*10/16/14 05:53*	*10/20/14 23:51*	*1*
p-Terphenyl-d14	*105*		*24 - 136*	*10/16/14 05:53*	*10/20/14 23:51*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	ND		750		ug/L			10/15/14 16:30	100
Ethene	ND		700		ug/L			10/15/14 16:30	100
Methane	**410**		400		ug/L			10/15/14 16:30	100

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	**15000**		1000		ug/L			10/20/14 13:49	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.010		mg/L		10/17/14 12:15	10/21/14 12:17	1
Manganese	**0.63**		0.0030		mg/L		10/17/14 12:15	10/20/14 19:34	1

Client Sample ID: MW-16-1014

Lab Sample ID: 480-69237-9

Date Collected: 10/13/14 08:35

Matrix: Ground Water

Date Received: 10/15/14 01:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	**3.3**	**B**	0.20		mg/L		10/24/14 08:21	10/24/14 22:57	1
Nitrate as N	ND	H UJ	0.050		mg/L			10/15/14 08:36	1
Cyanide, Total	**0.25**		0.010		mg/L		10/21/14 19:55	10/22/14 19:15	1
Sulfate	**107**		50.0		mg/L			10/22/14 12:35	10
Ferrous Iron	ND	HF UJ	0.10		mg/L			10/15/14 12:37	1
Chloride	**6.5**		5.0		mg/L			10/27/14 13:08	1
Sulfide	ND		1.0		mg/L			10/20/14 06:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**595**		5.0		mg/L			10/21/14 12:36	1

Client Sample ID: FD-1014

Lab Sample ID: 480-69237-10

Date Collected: 10/13/14 00:00

Matrix: Ground Water

Date Received: 10/15/14 01:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.7**		1.0		ug/L			10/21/14 04:12	1
Toluene	ND		1.0		ug/L			10/21/14 04:12	1
Ethylbenzene	ND		1.0		ug/L			10/21/14 04:12	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/21/14 04:12	1
o-Xylene	ND		1.0		ug/L			10/21/14 04:12	1
Xylenes, Total	ND		2.0		ug/L			10/21/14 04:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*66 - 137*		*10/21/14 04:12*	*1*
Toluene-d8 (Surr)	*98*		*71 - 126*		*10/21/14 04:12*	*1*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*10/21/14 04:12*	*1*
Dibromofluoromethane (Surr)	*98*		*60 - 140*		*10/21/14 04:12*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.97**		0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Acenaphthylene	**1.9**		0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Anthracene	**0.68**		0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Benzo(a)anthracene	**3.3**	J	0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Benzo(a)pyrene	**3.7**	J	0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Benzo(b)fluoranthene	**4.8**		0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Benzo(g,h,i)perylene	**1.9**	J+	0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Benzo(k)fluoranthene	**2.7**	J	0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Chrysene	**3.4**	J	0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Dibenz(a,h)anthracene	ND		0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Fluoranthene	**5.3**	J	0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Fluorene	ND		0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Indeno(1,2,3-cd)pyrene	**1.4**		0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Naphthalene	**1.8**		0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Phenanthrene	**2.8**	J	0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1
Pyrene	**8.3**		0.54		ug/L		10/16/14 05:53	10/21/14 00:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*81*		*48 - 120*	*10/16/14 05:53*	*10/21/14 00:19*	*1*

Client Sample ID: FD-1014

Date Collected: 10/13/14 00:00
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-10

Matrix: Ground Water

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*86*		*46 - 120*	*10/16/14 05:53*	*10/21/14 00:19*	*1*
p-Terphenyl-d14	*91*		*24 - 136*	*10/16/14 05:53*	*10/21/14 00:19*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	ND		7.5		ug/L			10/15/14 15:58	1
Ethene	ND		7.0		ug/L			10/15/14 15:58	1
Methane	**100**		4.0		ug/L			10/15/14 15:58	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	**8300**		1000		ug/L			10/20/14 14:06	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND	UJ	0.010		mg/L		10/17/14 12:15	10/21/14 12:20	1
Manganese	**0.23**		0.0030		mg/L		10/17/14 12:15	10/20/14 19:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	**2.2**		0.20		mg/L		10/28/14 10:28	10/28/14 22:05	1
Nitrate as N	ND	H UJ	0.050		mg/L			10/15/14 10:07	1
Cyanide, Total	**0.18**		0.010		mg/L		10/21/14 15:22	10/21/14 23:39	1
Sulfate	**32.3**		5.0		mg/L			10/22/14 12:12	1
Ferrous Iron	ND	HF UJ	0.10		mg/L			10/15/14 12:37	1
Chloride	**9.4**		5.0		mg/L			10/27/14 13:09	1
Sulfide	ND		1.0		mg/L			10/20/14 06:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**441**		5.0		mg/L			10/21/14 12:45	1

Client Sample ID: Trip Blank

Date Collected: 10/13/14 00:00
Date Received: 10/15/14 01:30

Lab Sample ID: 480-69237-11

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/21/14 04:36	1
Toluene	ND		1.0		ug/L			10/21/14 04:36	1
Ethylbenzene	ND		1.0		ug/L			10/21/14 04:36	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/21/14 04:36	1
o-Xylene	ND		1.0		ug/L			10/21/14 04:36	1
Xylenes, Total	ND		2.0		ug/L			10/21/14 04:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*66 - 137*		*10/21/14 04:36*	*1*
Toluene-d8 (Surr)	*96*		*71 - 126*		*10/21/14 04:36*	*1*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*10/21/14 04:36*	*1*
Dibromofluoromethane (Surr)	*97*		*60 - 140*		*10/21/14 04:36*	*1*