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December 10, 2018

Mr. Michael Squire  
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 (December 2018)

Dear Mr. Squire:

Enclosed is the Semi-Annual Groundwater Monitoring Report through December 2018 for the Johnstown (N. Market St.) MGP Site located in Johnstown, New York. The report includes the groundwater monitoring results from October 16, 2018.

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

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

Sincerely,

for SPS

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

Cc: Carolyn Rooney -National Grid  
Nathan Freeman- NYSDOH

National Grid

# December 2018 Semi-Annual Groundwater Monitoring Report



National Grid  
109 North Market Street  
Johnstown, NY 12095

December 2018

Version 1





## **December 2018 Semi-Annual Groundwater Monitoring Report**

National Grid Johnstown Site  
109 North Market Street  
Johnstown, NY 12095

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## Acronyms

|         |   |        |   |
|---------|---|--------|---|
| bgs     | Below ground surface                              | NYSDEC | New York State Department of Environmental Conservation |
| BTEX    | Benzene, Toluene, Ethylbenzene, and Total Xylenes | ORP    | Oxidation-Reduction Potential                           |
| COCs    | Constituents of Concern                           | PAHs   | Polycyclic Aromatic Hydrocarbons                        |
| cu. ft. | Cubic feet  | PSA    | Preliminary Site Assessment                             |
| DO      | Dissolved Oxygen                                  | QA/QC  | Quality Assurance / Quality Control                     |
| DTB     | Depth to Bottom                                   | RI     | Remedial Investigation                                  |
| DTP     | Depth to Product                                  | ROD    | Record of Decision                                      |
| DTW     | Depth to Water                                    | SMP    | Site Management Plan                                    |
| DUSR    | Data Usability Summary Report                     | SU     | Standard Units  |
| FS      | Feasibility Study                                 | SVOCs  | Semi-Volatile Organic Compounds                         |
| GES     | Groundwater & Environmental Services, Inc.        | USEPA  | United States Environmental Protection Agency           |
| IRMs    | Interim Remedial Measures                         | VOCs   | Volatile Organic Compounds                              |
| mg/L    | Milligrams per Liter                              | µg/L   | Micrograms per Liter                                    |
| MGP     | Manufactured Gas Plant                            | WQ     | Water Quality   |
| MNA     | Monitored Natural Attenuation                     |        |   |



# 1 Introduction

## 1.1 Overview

This Semi-Annual Groundwater Monitoring Report (the Report) summarizes the results of the October 2018 groundwater sampling event at the Johnstown, New York (N. Market Street) Former Manufactured Gas Plant (MGP) Site (the Site). This Report was developed as part of the long-term groundwater monitoring program on behalf of National Grid.

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

A Record of Decision (ROD) was issued by the NYSDEC, dated March 2010, in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, 6 NYCRR Part 375. Based upon the results of the remedial investigation/feasibility study (RI/FS) for the Site, the interim remedial measures (IRMs) previously completed, and the ROD, the draft Final Engineering Report and Site Management Plan (SMP) were developed and submitted to the NYSDEC in June 2010. The Final Engineering Report, the Final SMP, and the Final Environmental Easement were approved by the NYSDEC in their June 2016 Fact Sheet.

The Final SMP includes:

1. Semi-annual (April & October) site inspection and groundwater level measurements at monitoring wells MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, RMW-1, and the creek surface gauging station (bridge);
2. Semi-annual groundwater sampling/analysis [Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Heavy Metals, and Natural Attenuation Parameters] for monitoring wells MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16 (RMW-1 will not be sampled); and
3. Semi-annual reporting to NYSDEC.

## 1.2 Purpose and Objective

The purpose of this Report is to summarize the groundwater sampling activities and results of the latest event, and to compare the results to previous events. As described in the December 2008 Supplemental RI Report and the subsequent ROD, one of the primary goals is to evaluate whether



or not the groundwater constituents of concern (COCs) concentrations have decreased, in addition to continued assessment of the effectiveness of monitored natural attenuation.

## 2 Background

### 2.1 Site Description

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

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

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

### 2.2 Site History

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

In 1887, the Site consisted of a tool shop, an office, a coal gasometer, a lime house, a purifier room, a retort house, and a coal shed. Between 1887 and 1918, Holder #2 was located in the western-central part of the Site (exact size unknown). In 1892, a steam generator was constructed adjacent to the coal shed for the Lowe water gas process, and Holder #1 was decommissioned in 1896. In 1898, a 72,000 cu. ft. gas holder (Holder #3) was constructed on the Site. Between 1912 and 1918, the small gas holder (Holder #2) in the western-central area of the Site was removed. In 1929, a gas pipeline from an 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.

### **2.2.1 Site Assessment and Investigations**

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

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

### **2.2.2 Interim Remedial Measures Completed**

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

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

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

## **2.3 Environmental Setting**

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



### 2.3.1 Site Geology

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

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

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

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

### 2.3.2 Site Hydrogeology

Groundwater depths on-site are typically in the 10- to 20-foot below ground surface (bgs) range, generally in the glacial deposits below the bottom of the fill material. Groundwater flow is consistently northward through the Site area toward Cayadutta Creek, with the steepest gradient from the center of the Site proximal to former gas holders #2 and #3 to the southern Creek bank (about 0.09 ft./ft.). In comparison, the average hydraulic gradient decreases to a value of approximately 0.05 ft./ft. on the east and west sides of the Site away from the former gas holders. The local groundwater flow is consistent with regional groundwater flow direction. The groundwater flow direction and hydraulic gradients calculated during this monitoring period are also generally consistent with historic data obtained prior to the issuance of the ROD.

### 3 Monitoring Activities

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

- Semi-Annual Site Inspection including the creek bank protection, vegetative cover, monitoring wells, and security fence.
- Semi-Annual Groundwater Well Gauging of the following wells: RW-1, MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15 and MW-16 (Figure 2 presents the well locations). The creek surface water level is also gauged at one location: SG-1.
- Semi-Annual Groundwater Sampling and Analysis of the following: MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15 and MW-16. Note that recovery well RW-1 is not sampled as part of the program but is inspected for the presence of non-aqueous phase liquids (NAPL). Note: Monitoring well MW-11 was not gauged or sampled during the April 2018 sampling round due to concrete/metal and wood debris at this off-site well location.

#### 3.1 Groundwater Gauging and Sampling Procedures

##### 3.1.1 Gauging

Long-term groundwater monitoring includes water level 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 2** for a summary of the water level measurements from October 2018 as well as previous events. **Appendix A** also presents the field documentation from the October 2018 water gauging event.

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

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

##### 3.1.2 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 ( $\pm 0.1$  Standard Unit (SU) for pH,  $\pm 3\%$  for specific conductivity,  $\pm 10$  millivolts (mV) for ORP, and  $\pm 10\%$  for DO) and turbidity was less than 50 Nephelometric Turbidity Units (NTU). Refer to **Attachment A** for the field data.

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

### 3.1.3 Natural Attenuation Parameters

The ORP of groundwater may be used as a general indicator of the dominant attenuation processes and the relative tendency of the biological processes to accept or transfer electrons. ORP is dependent on and influences rates of biodegradation. Lower ORP readings indicate reduced conditions and are indicative of anaerobic biologic degradation 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 are most active with pH values ranging from 6 to 8 SU.

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

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

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

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



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

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

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

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

### **3.2 Groundwater Analytical Results**

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

- Refer to Table 3 for the analytical results summary.
- Refer to Appendix A for field data.
- Refer to Appendix B for the data usability summary report (DUSR).

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

### 3.2.1 Site Related Parameters

**BTEX** - Groundwater samples collected on October 16, 2018, from monitoring wells MW-13, MW-15, and MW-16 contained concentrations of some or all individual BTEX constituents above their respective NYSDEC WQ Values [1 microgram per liter ( $\mu\text{g/L}$ ) for benzene and 5  $\mu\text{g/L}$  for other BTEX constituents]. The highest concentrations were observed in the groundwater samples collected from monitoring well MW-16. Monitoring well MW-13 typically has the highest total BTEX concentrations. Monitoring well MW-13 is located between former gas holders #2 and #3.

**PAHs** – PAHs above NYSDEC WQ Values were detected in samples collected on October 16, 2018, from monitoring wells MW-13, MW-15 and MW-16. Naphthalene (MW-13) has consistently been detected at the highest concentration of any PAH.

**Cyanide** - Concentrations of cyanide were detected above its NYSDEC WQ Value (0.2 mg/L) in groundwater samples collected from monitoring wells MW-15 and MW-16 on October 16, 2018.

### 3.2.2 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 October 2018 MNA/WQ analytical results for the individual monitoring wells are summarized in **Table 3**. **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 are expected to be significantly lower than levels within the plume. A summary of the MNA/WQ results and associated field indicator parameters are provided below:

- DO and ORP values demonstrate depleted levels of DO and a transformation to more anaerobic or reducing conditions at the former source and downgradient areas relative to side gradient and upgradient areas of the Site. These values suggest that biodegradation of MGP petroleum-related compounds at the source and at downgradient areas are occurring, consuming the available oxygen which produces decreased DO levels.
- The range of ORP levels observed at the source and downgradient area monitoring wells generally indicates reduced aquifer conditions which 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 (MW-12) 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 (MW-7, MW-10, MW-15) exhibit higher levels relative to side gradient and upgradient monitoring wells (MW-4, MW-12). The presence of these metabolic by-products downgradient of the source area suggest biodegradation of MGP petroleum-related compounds may be occurring.
- Sulfate concentrations at the former source and downgradient areas are not depleted relative to upgradient and side gradient areas. This observation indicates sulfate reduction is not likely to be a significant biodegradation process at this time at the source and downgradient areas.
- Based on the presence of methane, low DO concentrations, and the reduced ORP levels, methanogenesis is likely an important factor for biodegradation capacity in the source and downgradient areas of the Site.

### 3.2.3 Natural Attenuation Trending

Previous groundwater sampling data collected since October 2012 (the dataset) were 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, statistical testing was utilized for groundwater data collected from monitoring wells at the Site. The Mann-Kendall test was performed on the dataset to identify potential trends in groundwater concentrations of site contaminants. The Mann-Kendall test is a nonparametric evaluation used to identify a trend in a series, even if there is a seasonal component in the series. The three possible hypotheses are that there is a negative, null, or positive trend. The resultant statistical trend analysis for individual monitoring wells suggests (with 80% and 90% confidence) that total BTEX compounds and the naphthalene plume lifecycle demonstrate either no trend or a decreasing trend throughout the monitoring period. It is worth noting that a failure to reject the null hypothesis (i.e. “no trend”) does not prove that there is no trend; it merely means that the available data is not sufficient to conclude there is a trend. In cases where no trend was determined, a comparison of the dataset to the historical highs and lows was performed to determine if the plume is stable; in every case, this evaluation concluded the plume is stable. 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.



**Table 1 – Contaminant Trend Analysis**

| Well ID | Benzene     | Toluene     | Ethylbenzene | Total Xylenes | Naphthalene |
|---------|-------------|-------------|--------------|---------------|-------------|
| MW-4    | Stable      | Stable      | Stable       | Stable        | Decreasing  |
| MW-7    | Stable      | Stable      | Stable       | Stable        | Stable      |
| MW-10   | Stable      | Stable      | Stable       | Stable        | Decreasing  |
| MW-11   | Not sampled | Not sampled | Not sampled  | Not sampled   | Not sampled |
| MW-12   | Stable      | Stable      | Stable       | Stable        | Decreasing  |
| MW-13   | Decreasing  | Decreasing  | Decreasing   | Decreasing    | Decreasing  |
| MW-14   | Stable      | Stable      | Stable       | Stable        | Stable      |
| MW-15   | Stable      | Stable      | Stable       | Stable        | Stable      |
| MW-16   | Stable      | Stable      | Stable       | Stable        | Stable      |

Isoconcentration contour maps were developed for total BTEX (**Figure 5**) and naphthalene (**Figure 6**) contamination. The figures present locations of the groundwater monitoring wells and plume contours for total BTEX (as compared to the benzene WQ value of 1 µg/L) and naphthalene exceeding the NYSDEC WQ values. Evaluation of the isoconcentration figures suggests that the contaminant plumes were relatively stable to decreasing (smaller footprint with time) within the Site boundary. BTEX constituent plume trends (concentrations above the benzene WQ value of 1 µg/L) have consistently included monitoring wells MW-13, MW-15, and MW-16. The naphthalene plume (concentrations above the WQ) has decreased to include only monitoring wells MW-13, MW-15, and MW-16.

## 4 Conclusions and Recommendations

### 4.1 Conclusions

#### 4.1.1 Groundwater Levels

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

#### 4.1.2 Site-Related Constituents

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

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



### **4.1.3 Natural Attenuation**

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

## **4.2 Recommendations**

Based on the results of the October 2018 groundwater sampling and monitoring event and results from previous events, it is recommended to continue the long-term semi-annual site inspection and groundwater monitoring program. The next event will occur in April 2019.

## **5 References**

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

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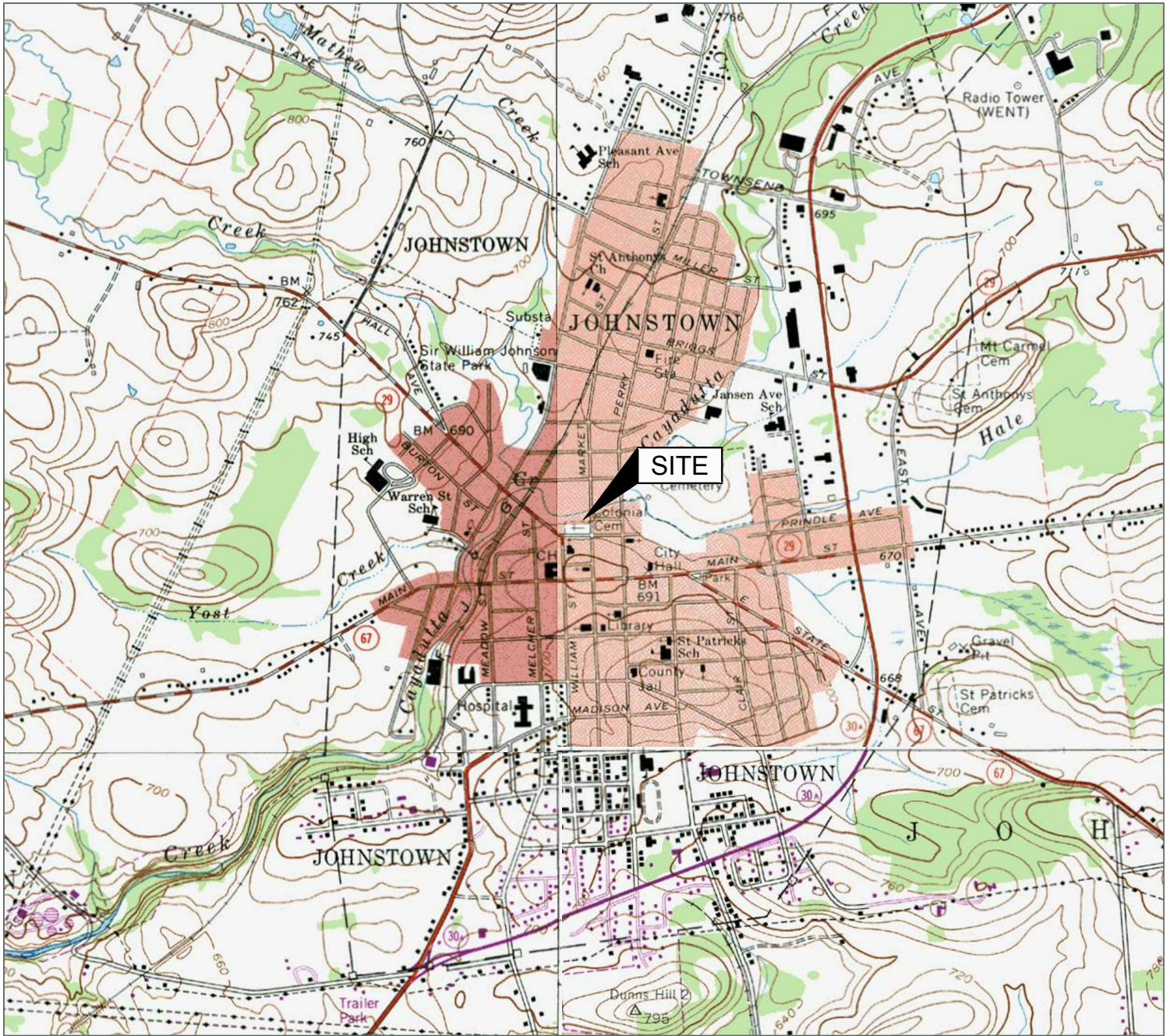
Niagara Mohawk Power Corporation. "Record of Decision for the Johnstown (N. Market Street) Former MGP Site, Johnstown, New York". Niagara Mohawk Power Corporation, March 2010.



## Figures

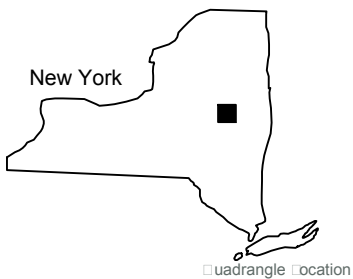
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**Source:**

□SGS □5 Minute Series  
 Topographic □quadangle, 1□□0  
 Gloversville, New York  
 □contour Interval □20□



**Site □location Map**

National Grid  
 Former MGP Site  
 105 N Market Street  
 Johnstown, New York

Drawn  
 W.G.S.  
 Designed  
 Approved

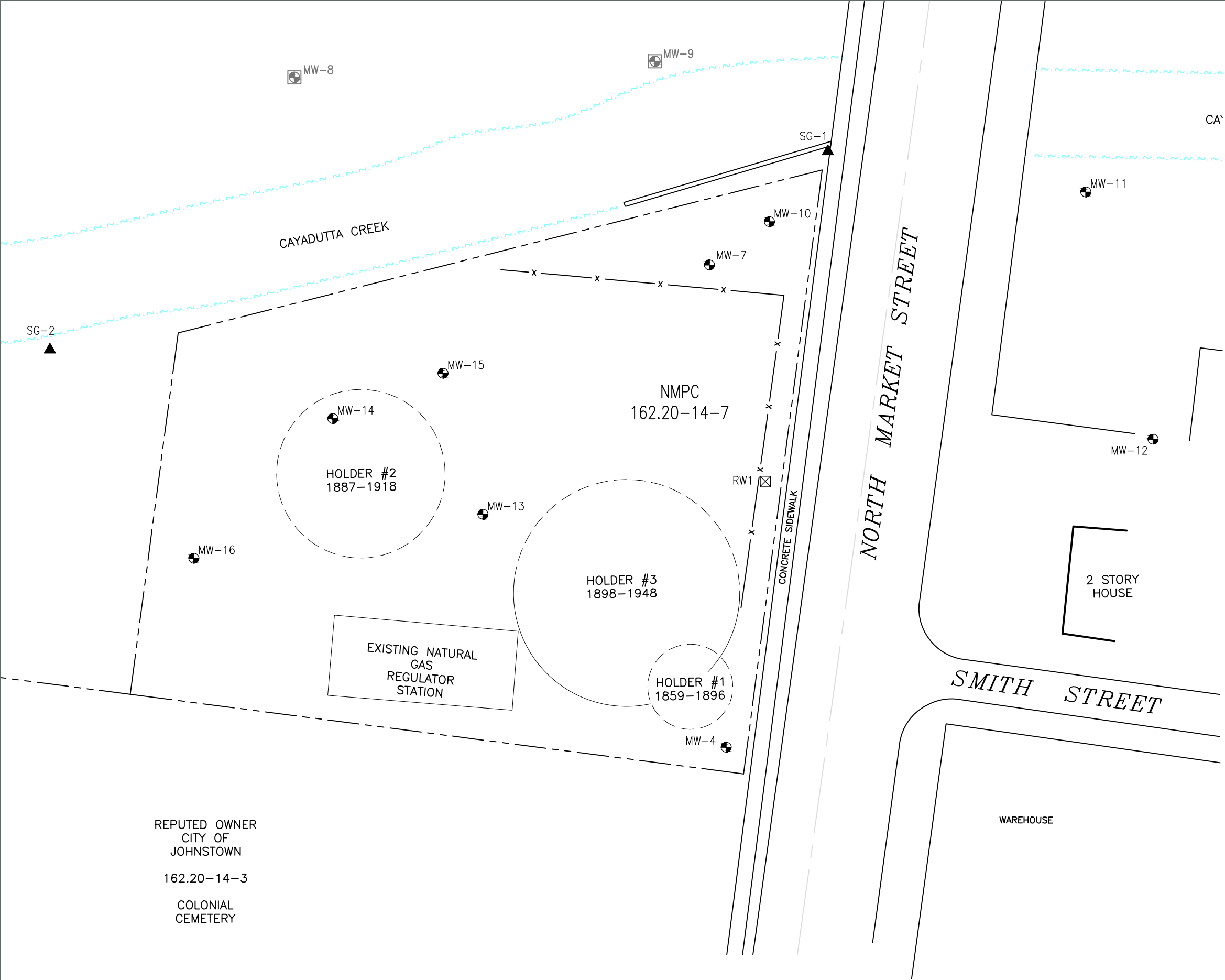


Date  
 12-20-17  
 Figure  
 1

Scale In Feet



Groundwater & Environmental Services, Inc.



**LEGEND**

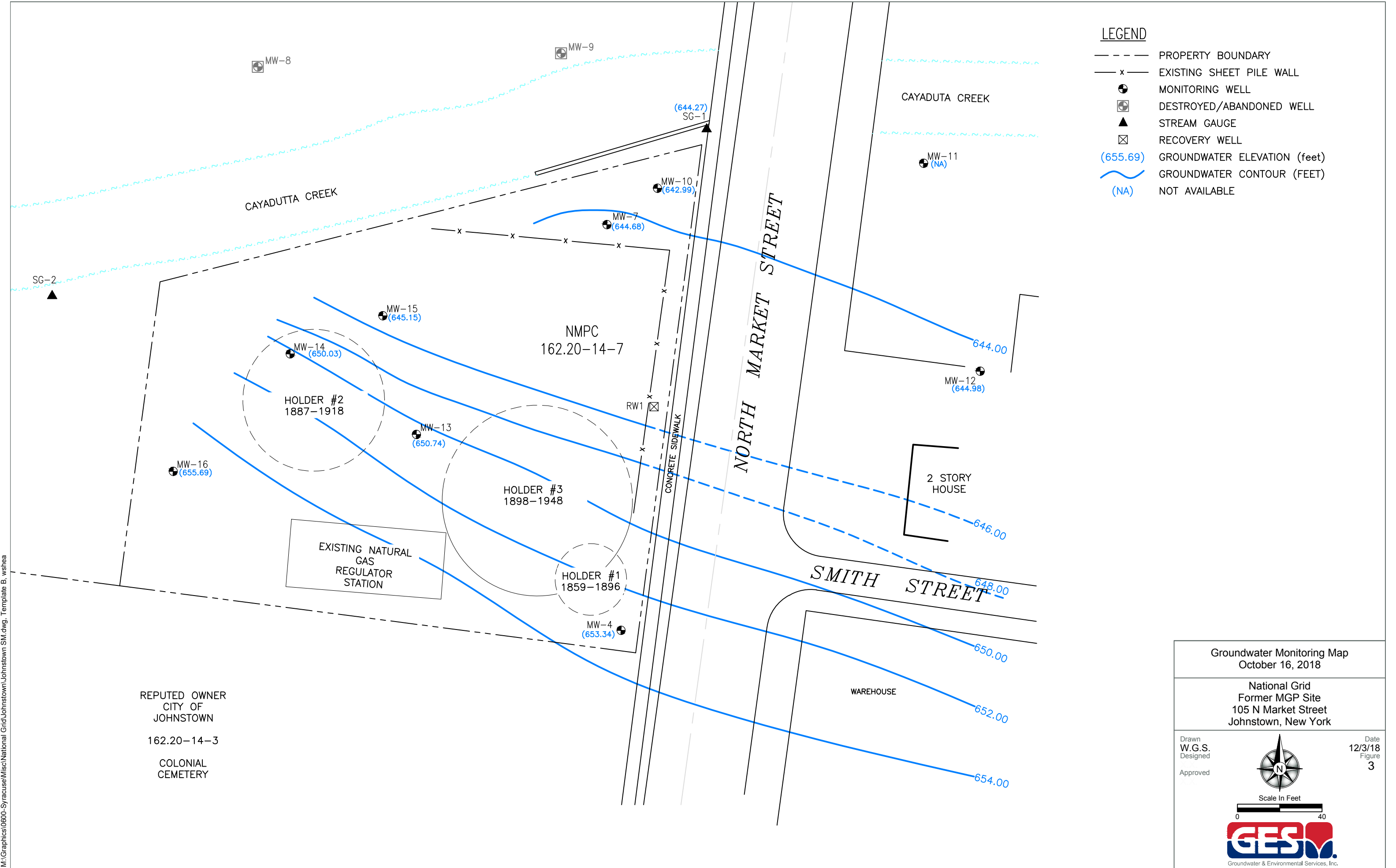
- PROPERTY BOUNDARY
- x - EXISTING SHEET PILE WALL
- MONITORING WELL
- ⊗ DESTROYED/ABANDONED WELL
- ▲ STREAM GAUGE
- ⊠ RECOVERY WELL

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

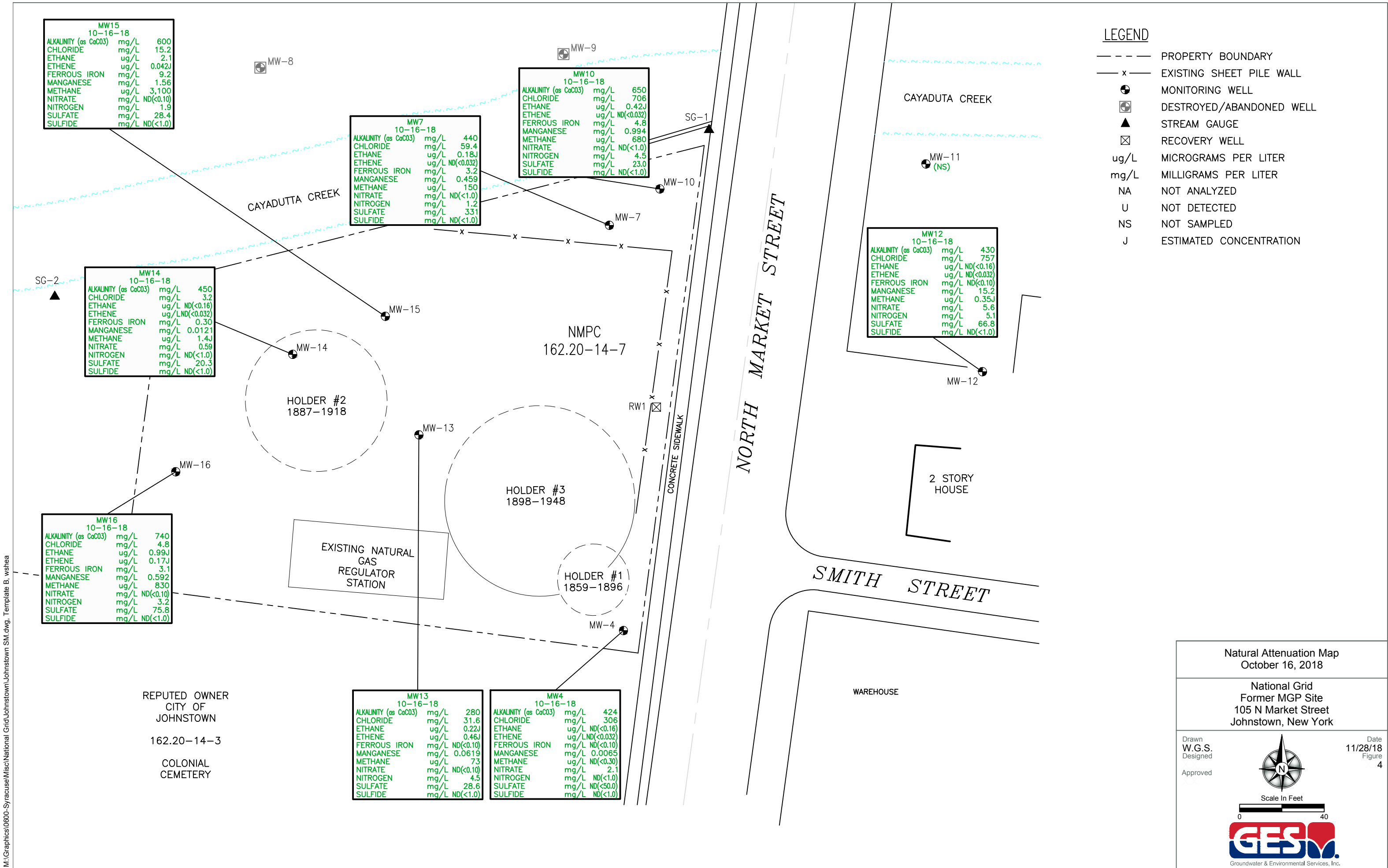
|  |  |                                |
|--|--|--------------------------------|
| Site Map   |  |                                |
| National Grid<br>Former MGP Site<br>105 N Market Street<br>Johnstown, New York |  |                                |
| Drawn<br>W.G.S.<br>Designed<br>Approved  | <br>Scale In Feet<br><br> | Date<br>5/25/18<br>Figure<br>2 |



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BTEX Concentration Map  
October 16, 2018

National Grid  
Former MGP Site  
105 N Market Street  
Johnstown, New York

Drawn  
W.G.S.  
Designed  
Approved

Scale In Feet  
0 40

Groundwater & Environmental Services, Inc.

Date  
11/28/18  
Figure  
5

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## Tables

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**Table 2**  
**Groundwater Level Measurements**

| Well ID | ELEVATION<br>REFERENCE<br>POINT | 6/30/2010                     |                           | 9/29/2010                     |                           | 1/5/2011                      |                           | 4/8/2011                      |                           | 6/16/2011                     |                           | 10/13/2011                    |                           | 12/15/2011                    |                           |
|---------|---------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|
|         |                                 | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) |
| MW-4    | 676.54                          | 23.10                         | 653.44                    | 23.41                         | 653.13                    | 22.95                         | 653.59                    | 22.50                         | 654.04                    | 22.04                         | 654.50                    | 21.41                         | 655.13                    | 22.78                         | 653.76                    |
| MW-7    | 659.08                          | 14.25                         | 644.83                    | 13.18                         | 645.90                    | 13.88                         | 645.20                    | 12.87                         | 646.21                    | 13.80                         | 645.28                    | 13.15                         | 645.93                    | 15.45                         | 643.63                    |
| MW-10   | 657.59                          | 14.80                         | 642.79                    | 14.60                         | 642.99                    | 14.75                         | 642.84                    | 14.09                         | 643.50                    | 14.77                         | 642.82                    | 14.11                         | 643.48                    | 14.22                         | 643.37                    |
| MW-11   | 657.29                          | NM                            | NM                        | 13.57                         | 643.72                    | 13.59                         | 643.70                    | 12.51                         | 644.78                    | 13.38                         | 643.91                    | 12.95                         | 644.34                    | 12.76                         | 644.53                    |
| MW-12   | 660.08                          | NM                            | NM                        | NM                            | NM                        | 15.06                         | 645.02                    | NM                            | NM                        | NM                            | NM                        | 13.61                         | 646.47                    | 14.54                         | 645.54                    |
| MW-13   | 664.89                          | 14.65                         | 650.24                    | 15.22                         | 649.67                    | 14.95                         | 649.94                    | 11.18                         | 653.71                    | 13.99                         | 650.90                    | 11.91                         | 652.98                    | 14.31                         | 650.58                    |
| MW-14   | 663.91                          | 13.50                         | 650.41                    | 14.46                         | 649.45                    | 14.28                         | 649.63                    | 12.86                         | 651.05                    | 13.65                         | 650.26                    | 13.26                         | 650.65                    | 13.65                         | 650.26                    |
| MW-15   | 661.85                          | 16.90                         | 644.95                    | 17.24                         | 644.61                    | 17.68                         | 644.17                    | 15.07                         | 646.78                    | 16.63                         | 645.22                    | 15.95                         | 645.90                    | 16.38                         | 645.47                    |
| MW-16   | 665.57                          | 9.70                          | 655.87                    | 10.19                         | 655.38                    | 12.33                         | 653.24                    | 11.00                         | 654.57                    | 10.50                         | 655.07                    | 9.79                          | 655.78                    | 9.91                          | 655.66                    |
| RW-1    | -                               | -                             | -                         | -                             | -                         | -                             | -                         | -                             | -                         | -                             | -                         | -                             | -                         | -                             | -                         |
| GAUGE1  | 659.97                          | 15.07                         | 644.90                    | 20.20                         | 639.77                    | 16.30                         | 643.67                    | 15.75                         | 644.22                    | 16.75                         | 643.22                    | 16.05                         | 643.92                    | 15.62                         | 644.35                    |

ft AMSL = Feet above mean sea level  
ft TOC = Feet from top of inner casing  
GW = Groundwater  
NM = Not measured



**Table 2**  
**Groundwater Level Measurements**

| Well ID | ELEVATION<br>REFERENCE<br>POINT | 3/15/2012                     |                           | 10/9/2012                     |                           | 4/18/2013                     |                           | 10/7/2013                     |                           | 4/9/2014                      |                           | 10/13/2014                    |                           | 4/16/2015                     |                           |
|---------|---------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|
|         |                                 | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) |
| MW-4    | 676.54                          | 22.81                         | 653.73                    | NM                            | NM                        | 23.97                         | 652.57                    | 23.12                         | 653.42                    | 23.28                         | 653.26                    | 23.28                         | 653.26                    | 22.91                         | 653.63                    |
| MW-7    | 659.08                          | 13.55                         | 645.53                    | 14.17                         | 644.91                    | 13.53                         | 645.55                    | 14.36                         | 644.72                    | 13.71                         | 645.37                    | 14.61                         | 644.47                    | 13.23                         | 645.85                    |
| MW-10   | 657.59                          | 14.18                         | 643.41                    | 15.05                         | 642.54                    | 14.27                         | 643.32                    | 14.44                         | 643.15                    | 14.13                         | 643.46                    | 14.98                         | 642.61                    | 14.15                         | 643.44                    |
| MW-11   | 657.29                          | 12.73                         | 644.56                    | 13.95                         | 643.34                    | 13.01                         | 644.28                    | 13.16                         | 644.13                    | 12.68                         | 644.61                    | 13.71                         | 643.58                    | 12.62                         | 644.67                    |
| MW-12   | 660.08                          | 14.26                         | 645.82                    | 16.36                         | 643.72                    | 14.06                         | 646.02                    | 14.99                         | 645.09                    | 14.41                         | 645.67                    | 15.65                         | 644.43                    | 14.25                         | 645.83                    |
| MW-13   | 664.89                          | 14.98                         | 649.91                    | 16.12                         | 648.77                    | 14.18                         | 650.71                    | 15.08                         | 649.81                    | 14.84                         | 650.05                    | 15.53                         | 649.36                    | 11.34                         | 653.55                    |
| MW-14   | 663.91                          | 15.49                         | 648.42                    | 16.98                         | 646.93                    | 13.14                         | 650.77                    | 14.74                         | 649.17                    | 15.70                         | 648.21                    | 15.02                         | 648.89                    | 13.06                         | 650.85                    |
| MW-15   | 661.85                          | 16.41                         | 645.44                    | 17.85                         | 644.00                    | 16.26                         | 645.59                    | 17.21                         | 644.64                    | 16.67                         | 645.18                    | 17.55                         | 644.30                    | 15.31                         | 646.54                    |
| MW-16   | 665.57                          | 11.56                         | 654.01                    | 10.51                         | 655.06                    | 9.98                          | 655.59                    | 9.85                          | 655.72                    | 9.45                          | 656.12                    | 10.24                         | 655.33                    | 10.48                         | 655.09                    |
| RW-1    | -                               | -                             | -                         | 17.98                         | -                         | 16.21                         | -                         | 15.95                         | -                         | 12.32                         | -                         | 17.31                         | -                         | 16.84                         | -                         |
| GAUGE1  | 659.97                          | 15.69                         | 644.28                    | NM                            | NM                        | 19.10                         | 640.87                    | 18.85                         | 641.12                    | 18.85                         | 641.12                    | 20.01                         | 639.96                    | 18.91                         | 641.06                    |

ft AMSL = Feet above mean sea level  
ft TOC = Feet from top of inner casing  
GW = Groundwater  
NM = Not measured



**Table 2**  
**Groundwater Level Measurements**

| Well ID | ELEVATION<br>REFERENCE<br>POINT | 10/13/2015                    |                           | 4/6/2016                      |                           | 10/25/2016                    |                           | 4/26/2017                     |                           | 10/11/2017                    |                           | 4/26/2018                     |                           | 10/16/2018                    |                           |
|---------|---------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|
|         |                                 | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) | Depth to<br>Water<br>(ft TOC) | GW Elevation<br>(ft AMSL) |
| MW-4    | 676.54                          | 23.48                         | 653.06                    | 23.51                         | 653.03                    | 24.03                         | 652.51                    | 21.09                         | 652.19                    | 24.35                         | 652.19                    | 22.48                         | 654.06                    | 23.20                         | 653.34                    |
| MW-7    | 659.08                          | 14.61                         | 644.47                    | 14.19                         | 644.89                    | 15.00                         | 644.08                    | 13.62                         | 645.46                    | 14.83                         | 644.25                    | 12.85                         | 646.23                    | 14.40                         | 644.68                    |
| MW-10   | 657.59                          | 14.95                         | 642.64                    | 14.77                         | 624.82                    | 15.18                         | 642.41                    | 14.37                         | 643.22                    | 15.02                         | 642.57                    | 13.05                         | 644.54                    | 14.60                         | 642.99                    |
| MW-11   | 657.29                          | -                             | -                         | NM                            | -                         | NM                            | -                         | NM                            | -                         | NM                            | -                         | NM                            | -                         | NM                            | -                         |
| MW-12   | 660.08                          | 15.62                         | 644.46                    | 14.95                         | 645.13                    | 15.82                         | 644.26                    | 13.55                         | 646.53                    | 15.62                         | 644.46                    | 14.00                         | 646.08                    | 15.10                         | 644.98                    |
| MW-13   | 664.89                          | 14.98                         | 649.91                    | 15.95                         | 648.94                    | 16.32                         | 648.57                    | 13.27                         | 651.62                    | 15.80                         | 649.09                    | 12.98                         | 651.91                    | 14.15                         | 650.74                    |
| MW-14   | 663.91                          | 13.63                         | 650.28                    | 16.81                         | 647.1                     | 16.8                          | 647.11                    | 13.71                         | 650.20                    | 15.88                         | 648.03                    | 13.71                         | 650.20                    | 13.88                         | 650.03                    |
| MW-15   | 661.85                          | 17.23                         | 644.62                    | 17.355                        | 644.3                     | 17.9                          | 643.95                    | 16.05                         | 645.80                    | 17.86                         | 643.99                    | 15.71                         | 646.14                    | 16.70                         | 645.15                    |
| MW-16   | 665.57                          | 9.61                          | 655.96                    | 10.79                         | 654.78                    | 11.11                         | 654.46                    | 9.02                          | 656.55                    | 10.43                         | 655.14                    | 9.52                          | 656.05                    | 9.88                          | 655.69                    |
| RW-1    | -                               | 13.21                         | -                         | 13.03                         | NRP                       | 12.88                         | NRP                       | 10.6                          | NRP                       | 17.40                         | NRP                       | 12.35                         | NRP                       | 12.38                         | NRP                       |
| GAUGE1  | 659.97                          | 19.91                         | 640.06                    | 19.76                         | 640.21                    | 18.40                         | 641.57                    | 15.70                         | 644.27                    | 15.46                         | 644.51                    | 14.55                         | 645.42                    | 15.70                         | 644.27                    |

ft AMSL = Feet above mean sea level  
ft TOC = Feet from top of inner casing  
GW = Groundwater  
NM = Not measured



Table 3  
Groundwater Analytical Data  
MW-4

| CONSTITUENT             | UNITS | NYSDEC<br>AWQS 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    | 10/20/14    | 04/16/15    | 10/14/15    | 04/06/16    | 10/25/16    | 04/26/17    | 10/11/17    | 04/26/18    | 10/16/18    |
|-------------------------|-------|-----------------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>BTEX Compounds</b>   |       |                       |            |            |            |            |            |            |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| Benzene                 | µg/L  | 1                     | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| Ethylbenzene            | µg/L  | 5                     | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| m/p-Xylene              | µg/L  | 5                     | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   |
| o-Xylene                | µg/L  | 5                     | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| Toluene                 | µg/L  | 5                     | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| <b>PAHs</b>             |       |                       |            |            |            |            |            |            |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| Acenaphthene            | µg/L  | 20                    | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Acenaphthylene          | µg/L  | NC                    | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Anthracene              | µg/L  | 50                    | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Benzo(a)anthracene      | µg/L  | 0.002                 | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Benzo(a)pyrene          | µg/L  | 0.000                 | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Benzo(b)fluoranthene    | µg/L  | 0.002                 | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | 0.26J      | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Benzo(g,h,i)perylene    | µg/L  | NC                    | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | 0.19J      | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Benzo(k)fluoranthene    | µg/L  | 0.002                 | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Chrysene                | µg/L  | 0.002                 | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Dibenzo(a,h)anthracene  | µg/L  | NC                    | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Fluoranthene            | µg/L  | 50                    | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Fluorene                | µg/L  | 50                    | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Indeno(1,2,3-cd)pyrene  | µg/L  | 0.002                 | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Naphthalene             | µg/L  | 10                    | 0.27       | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | 3.2         | 3.2         | 2.2         | 2.2         | 2.2         | ND (<0.51)  | 0.29        | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Phenanthrene            | µg/L  | 50                    | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | 0.048J     | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Pyrene                  | µg/L  | 50                    | ND (<0.19) | ND (<0.19) | ND (<0.47) | ND (<0.48) | ND (<0.47) | 0.10J      | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.52)  | ND (<0.52)  | ND (<0.10)  | ND (<0.096) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| <b>Cyanide and Lead</b> |       |                       |            |            |            |            |            |            |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| Lead                    | µg/L  | 25                    | ND (<5.0)  | ND (<5.0)  | ND (<5.0)  | ND (<3.0)  | ND (<3.0)  | ND (<5.0)  | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<10)    | ND (<10)    | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   |
| Cyanide                 | mg/L  | 0.2                   | ND (<0.01) | ND (<0.01) | ND (<0.01) | ND (<0.01) | ND (<0.01) | ND (<0.01) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) |

AWQS = Ambient Water Quality Standards  
B = Present in Associated Blank Sample  
BTEX = Benzene, Ethylbenzene, Toluene and Xylene  
D = Diluted Sample  
E = Result exceeded calibration range  
F1 = MS and/or MSD Recovery outside acceptance limits.  
F2 = MS/MSD RPD above control limits.  
J = Estimated Concentration Value  
mg/L = Milligrams per Liter  
NC = No Criteria  
ND (<#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
NYSDEC = New York State Department of Environmental Conservation  
PAHs = Polycyclic Aromatic Hydrocarbons  
R = Rejected  
µg/L = Micrograms per Liter  
**Bolded** = values indicated exceedance of the NYSDEC AWQS





Table 3  
Groundwater Analytical Data  
MW-4

| 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  | 10/15/14  | 04/16/15  | 10/14/15  | 04/06/16  | 10/25/16    | 04/26/17    | 10/11/17    | 04/26/18    | 10/16/18    |
|------------------------------------|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|-------------|
| <b>MNA/WQ Parameters</b>           |       |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |             |             |             |             |             |
| Alkalinity (as CaCO <sub>3</sub> ) | mg/L  | 385       | 420       | R         | R         | 405J      | 431J      | R         | 405       | 354       | 442       | 398       | 400       | 384       | 412       | 394       | 414         | 392         | 418         | 424         | 424         |
| Chloride                           | mg/L  | 354       | 269       | 265       | 385 B     | 288J      | R         | 228       | 222       | 275       | 411       | 304       | 329       | 295       | 365       | 304       | 421         | 377         | ND (<300)   | 233         | 306         |
| Ethane                             | µg/L  | ND (<1.0) | ND (<1.0) | ND (<1.5) | ND (<1.5) | ND (<1.5) | ND (<1.5) | ND (<1.5) | ND (<7.5) | ND (<7.5) | ND (<7.5) | ND (<7.5) | ND (<7.5) | ND (<7.5) | ND (<7.5) | ND (<7.5) | ND (<0.025) | ND (<0.025) | ND (<0.030) | 0.037J      | ND (<0.16)  |
| Ethene                             | µg/L  | ND (<1.0) | ND (<1.0) | ND (<1.5) | ND (<1.5) | ND (<1.5) | ND (<1.5) | ND (<1.5) | ND (<7.0) | ND (<7.0) | ND (<7.0) | ND (<7.0) | ND (<7.0) | ND (<7.0) | ND (<7.0) | ND (<7.0) | ND (<0.035) | ND (<0.035) | ND (<0.10)  | ND (<0.10)  | ND (<0.032) |
| Ferrous Iron                       | mg/L  | ND (<0.1) | ND (<0.1) | R         | ND (<0.1) | ND (<0.1) | ND (<0.1) | ND (<0.1) | ND (<0.1) | ND (<0.1) | 0.013     | ND (<0.1) | ND (<0.1) | ND (<0.1) | ND (<0.1) | 0.14      | 0.11        | ND (<0.10)  | ND (<0.10)  | ND (<0.10)  | ND (<0.10)  |
| Manganese                          | mg/L  | NA        | ND (<1.0) | 0.64J     | 0.45J     | ND (<3.0) | 3.4       | ND (<3.0) | 0.0087    | ND (<3.0) | ND (<3.0) | ND (<3.0) | ND (<3.0) | ND (<3.0) | 0.019     | 0.0031    | 0.0053      | ND (<0.005) | ND (<0.005) | ND (<0.005) | 0.0065      |
| Methane                            | µg/L  | ND (<2.0) | ND (<2.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<4.0) | ND (<4.0) | ND (<4.0) | ND (<4.0) | ND (<4.0) | ND (<4.0) | ND (<4.0) | ND (<4.0) | 0.32J       | 0.47J       | 0.27J       | 0.29J       | ND (<0.30)  |
| 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       | 2.9       | 2.9       | 3.4       | 3.2         | 2.2         | 3.2         | 0.69        | 2.1         |
| Nitrogen                           | mg/L  | 0.22      | 0.25      | ND (<0.2) | ND (<0.2) | R         | ND (<0.2) | ND (<0.2) | 0.25      | 0.31      | 0.31      | ND (<0.2) | ND (<0.2) | ND (<0.2) | ND (<0.2) | ND (<0.2) | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| 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      | 60        | 60        | 73.9      | 60.8        | 23.0        | 56.7        | 50.0        | ND (<50.0)  |
| Sulfide                            | mg/L  | NA        | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |

B = Present in Associated Blank Sample  
D = Diluted Sample  
J = Estimated Concentration  
mg/L = Milligrams per Liter  
MNA = Monitored Natural Attenuation  
NA = Not Analyzed  
ND (<#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
R = Rejected  
µg/L = Micrograms per Liter  
WQ = Water Quality



Table 3  
Groundwater Analytical Data  
MW-7

| CONSTITUENT            | UNITS | NYSDEC<br>AWQS 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   | 10/20/14    | 04/16/15    | 10/14/15    | 04/06/16    | 10/26/16   | 04/26/17    | 10/11/17    | 04/26/18    | 10/16/18    |            |
|------------------------|-------|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|------------|
| BTEX Compounds         |       |                       |            |            |            |            |            |            |            |            |            |            |            |             |             |             |             |            |             |             |             |             |            |
| Benzene                | µg/L  | 1                     | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | 0.72J      | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | 1.3         | ND (<1.0)   | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |            |
| Ethylbenzene           | µg/L  | 5                     | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |             |            |
| m,p-Xylene             | µg/L  | 5                     | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)  | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   |             |            |
| o-Xylene               | µg/L  | 5                     | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |             |            |
| Toluene                | µg/L  | 5                     | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | 1.3         | ND (<1.0)   | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |             |            |
| PAHs                   |       |                       |            |            |            |            |            |            |            |            |            |            |            |             |             |             |             |            |             |             |             |             |            |
| Acenaphthene           | µg/L  | 20                    | 0.075J     | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | 0.55       | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | 0.10        | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Acenaphthylene         | µg/L  | NC                    | 0.15J      | 0.11J      | ND (<0.50) | ND (<0.48) | ND (<0.48) | 0.20J      | 0.13J      | 0.13J      | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | 0.20        | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Anthracene             | µg/L  | 50                    | ND (<0.19) | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Benzo(a)anthracene     | µg/L  | 0.002                 | ND (<0.19) | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Benzo(a)pyrene         | µg/L  | 0.000                 | ND (<0.19) | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Benzo(b)fluoranthene   | µg/L  | 0.002                 | ND (<0.19) | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | 0.15J      | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Benzo(g,h,i)perylene   | µg/L  | NC                    | ND (<0.19) | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Benzo(k)fluoranthene   | µg/L  | 0.002                 | ND (<0.19) | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Chrysene               | µg/L  | 0.002                 | ND (<0.19) | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Dibenz(a,h)anthracene  | µg/L  | NC                    | ND (<0.19) | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Fluoranthene           | µg/L  | 50                    | ND (<0.19) | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | ND (<0.47) | 0.078J     | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Fluorene               | µg/L  | 50                    | ND (<0.19) | 0.057J     | ND (<0.50) | ND (<0.48) | ND (<0.48) | 0.11J      | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Indeno(1,2,3-cd)pyrene | µg/L  | 0.002                 | ND (<0.19) | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | ND (<0.47) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Naphthalene            | µg/L  | 10                    | 0.43       | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | ND (<0.47) | 1.1        | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | 5.2         | ND (<0.49)  | 3.0        | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11)  |            |
| Phenanthrene           | µg/L  | 50                    | ND (<0.19) | ND (<0.19) | ND (<0.50) | ND (<0.48) | ND (<0.48) | 0.097J     | 0.12J      | ND (<0.48) | 0.49       | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Pyrene                 | µg/L  | 50                    | ND (<0.19) | 0.038J     | ND (<0.50) | ND (<0.48) | ND (<0.48) | 0.35J      | 0.098J     | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.46)  | ND (<0.46)  | ND (<0.46)  | ND (<0.49)  | ND (<0.49) | ND (<0.10)  | ND (<0.097) | ND (<0.097) | ND (<0.098) | ND (<0.11) |
| Cyanide and Lead       |       |                       |            |            |            |            |            |            |            |            |            |            |            |             |             |             |             |            |             |             |             |             |            |
| Lead                   | µg/L  | 25                    | ND (<5.0)  | ND (<5.0)  | ND (<5.0)  | ND (<3.0)  | 19         | 12         | 3.2J       | 19         | 33         | 7.1        | 7.1        | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<5.0)  | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   |            |
| Cyanide                | mg/L  | 0.2                   | 0.33J      | 0.217      | R          | 0.68J      | 0.986      | R          | 0.22       | 5.9        | 1.4        | 0.4        | 0.16       | 0.13        | 0.18        | 0.18        | 0.18        | 0.15       | 0.18        | 0.16        | 0.14        | 0.17        |            |

AWQS = Ambient Water Quality Standards  
B = Present in Associated Blank Sample  
BTX = Benzene, Ethylbenzene, Toluene and Xylene  
D = Diluted Sample  
E = Result exceeded calibration range  
F1 = MS and/or MSD Recovery outside acceptance limits.  
F2 = MS/MSD RPD above control limits.  
J = Estimated Concentration Value  
mg/L = Milligrams per Liter  
NC = No Criteria  
ND (#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
NYSDEC = New York State Department of Environmental Conservation  
PAHs = Polycyclic Aromatic Hydrocarbons  
R = Rejected  
µg/L = Micrograms per Liter  
**Bolded** = values indicated exceedance of the NYSDEC AWQS



Table 3  
Groundwater Analytical Data  
MW-7

| CONSTITUENT                        | UNITS | 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   | 10/15/14   | 04/16/15   | 10/14/15   | 04/06/16  | 10/26/16    | 04/26/17   | 10/11/17   | 04/26/18   | 10/16/18    |
|------------------------------------|-------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|-------------|------------|------------|------------|-------------|
| <b>MNA/WQ Parameters</b>           |       |           |           |            |            |            |            |            |            |            |            |            |            |            |            |           |             |            |            |            |             |
| Alkalinity (as CaCO <sub>3</sub> ) | mg/L  | 321       | 330J      | R          | R          | 327J       | 370J       | R          | 310        | 324        | 367        | 375        | 392        | 340        | 403        | 395       | 406         | 412        | 380        | 390        | 440         |
| Chloride                           | mg/L  | 108       | 104       | 122        | 93.8 B     | 111J       | R          | 91.2       | 101        | 114        | 84         | 79         | 62.8       | 67.7       | 66.7       | 66.2      | 79.4        | 68.9       | 64.6       | 63.6       | 59.4        |
| Ethane                             | µg/L  | ND (<5.0) | ND (<5.0) | ND (<1.5)  | ND (<150)  | ND (<1.5)  | ND (<75)   | ND (<75)   | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5) | 0.38J       | 0.86J      | 0.20J      | 0.32J      | 0.18J       |
| Ethene                             | µg/L  | ND (<5.0) | ND (<5.0) | ND (<1.5)  | ND (<150)  | ND (<1.5)  | ND (<75)   | ND (<75)   | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0) | ND (<0.035) | 0.090J     | ND (<0.10) | ND (<0.10) | ND (<0.032) |
| Ferrous Iron                       | mg/L  | 1.12      | ND (<0.1) | R          | 1.7J       | 0.83J      | R          | ND (<0.1)  | 0.37       | ND (<0.1)  | 0.25       | 8.24       | ND (<0.1)  | ND (<0.1)  | ND (<0.1)  | 0.14      | 0.53        | 3.7        | 3.3        | 2.8        | 3.2         |
| 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       | 0.49       | 0.46       | 0.53      | 0.43        | 0.478      | 0.476      | 0.476      | 0.459       |
| Methane                            | µg/L  | 290J      | 510       | 190        | 210        | 190        | 300        | 210        | 240        | 40         | 23         | 150        | 82         | 35         | 96         | 17        | 160         | 240        | 120        | 170        | 150         |
| Nitrate                            | mg/L  | NA        | ND (<1.0) | ND (<0.05) | ND (<0.02) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | 0.14      | ND (<0.10)  | ND (<0.10) | ND (<0.10) | ND (<0.10) | ND (<0.10)  |
| 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          | 1.1        | 1.5        | 1.6       | 2.2         | 1.8        | 1.3        | 1.7        | 1.2         |
| Sulfate                            | mg/L  | NA        | 576       | 745 B      | 611 B      | R          | R          | 674 B      | 509        | 654        | 518        | 540        | 457        | 442        | 533        | 384       | 476         | 396        | 394        | 389        | 331         |
| Sulfide                            | mg/L  | NA        | 1.4J      | ND (<1.0)  | 0.8J       | 2.8        | ND (<1.0)  | ND (<1.0)  | 1.2        | 1.4        | 1.4        | 1.4        | 1          | ND (<1.0)  | ND (<1.0)  | ND (<1.0) | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   |

B = Present in Associated Blank Sample  
D = Diluted Sample  
J = Estimated Concentration  
mg/L = Milligrams per Liter  
MNA = Monitored Natural Attenuation  
NA = Not Analyzed  
ND (<#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
R = Rejected  
µg/L = Micrograms per Liter  
WQ = Water Quality



Table 3  
Groundwater Analytical Data  
MW-10

| CONSTITUENT             | UNITS | NYSDEC<br>AWQS 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   | 10/20/14   | 04/16/15    | 10/13/15    | 04/06/16    | 10/26/16   | 04/26/17     | 10/11/17    | 04/26/18   | 10/16/18   |
|-------------------------|-------|-----------------------|---------------|----------------------|------------|------------|--------------|------------|---------------|------------|-------------|------------|------------|------------|-------------|-------------|-------------|------------|--------------|-------------|------------|------------|
| <b>BTEX Compounds</b>   |       |                       |               |                      |            |            |              |            |               |            |             |            |            |            |             |             |             |            |              |             |            |            |
| Benzene                 | µg/L  | 1                     | ND (<1.0)     | ND (<1.0)            | ND (<1.0)  | <b>7.1</b> | <b>1.3</b>   | ND (<1.0)  | ND (<1.0)     | ND (<1.0)  | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | <b>2.3</b>  | ND (<1.0)   | ND (<1.0)  | <b>1.9</b>   | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  |
| Ethylbenzene            | µg/L  | 5                     | ND (<1.0)     | ND (<1.0)            | ND (<1.0)  | ND (<1.0)  | ND (<1.0)    | ND (<1.0)  | ND (<1.0)     | ND (<1.0)  | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | 1           | ND (<1.0)   | ND (<1.0)  | ND (<1.0)    | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  |
| m/p-Xylene              | µg/L  | 5                     | ND (<2.0)     | ND (<2.0)            | ND (<2.0)  | ND (<2.0)  | ND (<2.0)    | ND (<2.0)  | ND (<2.0)     | ND (<2.0)  | ND (<2.0)   | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)  | ND (<2.0)    | ND (<2.0)   | ND (<2.0)  | ND (<2.0)  |
| o-Xylene                | µg/L  | 5                     | ND (<1.0)     | ND (<1.0)            | ND (<1.0)  | ND (<1.0)  | ND (<1.0)    | ND (<1.0)  | ND (<1.0)     | ND (<1.0)  | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)  | ND (<1.0)    | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  |
| Toluene                 | µg/L  | 5                     | ND (<1.0)     | ND (<1.0)            | ND (<1.0)  | ND (<1.0)  | ND (<1.0)    | ND (<1.0)  | ND (<1.0)     | ND (<1.0)  | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | 2           | ND (<1.0)   | ND (<1.0)  | ND (<1.0)    | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  |
| <b>PAHs</b>             |       |                       |               |                      |            |            |              |            |               |            |             |            |            |            |             |             |             |            |              |             |            |            |
| Acenaphthene            | µg/L  | 20                    | 1.6           | 1.3                  | 1.8J       | 2.4        | 2.3          | 0.099J     | 1.4           | 2          | 2.2         | 1.1        | 0.8        | ND (<0.48) | 0.63        | ND (<0.50)  | ND (<0.50)  | 1.4        | 0.72         | 1.6         | 0.53       | 1.7        |
| Acenaphthylene          | µg/L  | NC                    | 0.43J         | 0.32                 | 0.24J      | 0.42J      | 0.74J        | 0.13J      | 0.14J         | ND (<0.48) | ND (<0.48)  | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | 0.18       | 0.16         | 0.18        | 0.11       | 0.22       |
| Anthracene              | µg/L  | 50                    | 0.061J        | 0.047J               | ND (<0.47) | ND (<0.47) | 0.28J        | ND (<0.47) | ND (<0.48)    | ND (<0.48) | ND (<0.48)  | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | ND (<0.10) | ND (<0.097)  | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Benzo(a)anthracene      | µg/L  | 0.002                 | <b>0.13J</b>  | <b>0.057J</b>        | ND (<0.47) | ND (<0.47) | <b>1</b>     | ND (<0.47) | <b>0.49 B</b> | ND (<0.48) | ND (<0.48)  | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | ND (<0.10) | <b>0.11</b>  | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Benzo(a)pyrene          | µg/L  | 0.002                 | <b>0.14J</b>  | <b>0.057J</b>        | ND (<0.47) | ND (<0.47) | <b>0.81</b>  | ND (<0.47) | <b>0.19J</b>  | ND (<0.48) | <b>0.55</b> | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | ND (<0.10) | <b>0.10</b>  | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Benzo(b)fluoranthene    | µg/L  | 0.002                 | <b>0.071J</b> | <b>0.047J</b>        | ND (<0.47) | ND (<0.47) | <b>0.8</b>   | ND (<0.47) | <b>0.24J</b>  | ND (<0.48) | <b>0.86</b> | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | ND (<0.10) | <b>0.17</b>  | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Benzo(g,h,i)perylene    | µg/L  | NC                    | 0.051J        | ND (<0.19)           | ND (<0.47) | ND (<0.47) | 0.37J        | ND (<0.47) | 0.08J         | ND (<0.48) | ND (<0.48)  | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | ND (<0.10) | ND (<0.097)  | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Benzo(k)fluoranthene    | µg/L  | 0.002                 | <b>0.092J</b> | <b>0.047J</b>        | ND (<0.47) | ND (<0.47) | <b>0.53</b>  | ND (<0.47) | <b>0.18J</b>  | ND (<0.48) | ND (<0.48)  | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | ND (<0.10) | <b>0.15</b>  | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Chrysene                | µg/L  | 0.002                 | <b>0.12J</b>  | <b>0.047J</b>        | ND (<0.47) | ND (<0.47) | <b>0.91</b>  | ND (<0.47) | ND (<0.48)    | ND (<0.48) | ND (<0.48)  | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | ND (<0.10) | <b>0.099</b> | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Dibenz(a,h)anthracene   | µg/L  | NC                    | ND (<0.20)    | ND (<0.19)           | ND (<0.47) | ND (<0.47) | 0.11J        | ND (<0.47) | ND (<0.48)    | ND (<0.48) | 1.1         | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | ND (<0.10) | ND (<0.097)  | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Fluoranthene            | µg/L  | 50                    | 0.24          | 0.11J                | 0.085J     | ND (<0.47) | 1.5          | ND (<0.47) | 0.34J         | ND (<0.48) | ND (<0.48)  | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | 0.10       | 0.16         | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Fluorene                | µg/L  | 50                    | 0.13J         | 0.14J                | ND (<0.47) | ND (<0.47) | ND (<0.49)   | ND (<0.47) | ND (<0.48)    | ND (<0.48) | ND (<0.48)  | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | ND (<0.10) | ND (<0.097)  | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Indene(1,2,3-cd)pyrene  | µg/L  | 0.002                 | <b>0.051J</b> | <b>ND (&lt;0.19)</b> | ND (<0.47) | ND (<0.47) | <b>0.34J</b> | ND (<0.47) | <b>0.076J</b> | ND (<0.48) | ND (<0.48)  | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | ND (<0.10) | ND (<0.097)  | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Naphthalene             | µg/L  | 10                    | 0.33          | ND (<0.19)           | ND (<0.47) | ND (<0.47) | ND (<0.49)   | ND (<0.47) | ND (<0.48)    | 0.7        | 0.7         | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | 7.9         | ND (<0.50)  | 0.23       | ND (<0.097)  | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Phenanthrene            | µg/L  | 50                    | 0.11J         | ND (<0.19)           | ND (<0.47) | ND (<0.47) | 0.53         | 0.10J      | 0.18J         | ND (<0.48) | ND (<0.48)  | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | ND (<0.10) | ND (<0.097)  | ND (<0.099) | ND (<0.10) | ND (<0.11) |
| Pyrene                  | µg/L  | 50                    | 0.33J         | 0.13J                | 0.15J      | ND (<0.57) | 1.8          | 0.14J      | 0.41J         | ND (<0.48) | ND (<0.48)  | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50)  | ND (<0.50)  | ND (<0.50)  | 0.15       | 0.20         | ND (<0.099) | ND (<0.10) | 0.13       |
| <b>Cyanide and Lead</b> |       |                       |               |                      |            |            |              |            |               |            |             |            |            |            |             |             |             |            |              |             |            |            |
| Lead                    | µg/L  | 25                    | ND (<5.0)     | ND (<5.0)            | ND (<5.0)  | ND (<3.0)  | 9.1          | 3.9J       | 6.4           | ND (<5.0)  | 8.4         | ND (<5.0)  | ND (<5.0)  | ND (<5.0)  | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<5.0)  | ND (<10.0)   | ND (<5.0)   | ND (<5.0)  | ND (<5.0)  |
| Cyanide                 | mg/L  | 0.2                   | 0.139         | 0.124                | R          | 0.17J      | 0.156        | R          | 0.078         | 0.14       | 0.1         | 0.11       | 0.081      | 0.10       | 0.098       | 0.010       | 0.085       | 0.081      | 0.13         | 0.10        | 0.12       | 0.079      |

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NS = Not Sampled  
NYSDEC = New York State Department of Environmental Conservation  
PAHs = Polycyclic Aromatic Hydrocarbons  
R = Rejected  
µg/L = Micrograms per Liter  
**Bolded** = values indicated exceedance of the NYSDEC AWQS



Table 3  
Groundwater Analytical Data  
MW-10

| 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   | 10/15/14   | 04/16/15   | 10/13/15   | 04/06/16   | 10/26/16    | 04/26/17   | 10/11/17   | 04/26/18   | 10/16/18    |
|------------------------------------|-------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|------------|------------|-------------|
| <b>MNA/WQ Parameters</b>           |       |           |           |            |            |            |            |            |            |            |            |            |            |            |            |            |             |            |            |            |             |
| Alkalinity (as CaCO <sub>3</sub> ) | mg/L  | 556       | 536J      | R          | R          | 523J       | 541J       | R          | 589        | 584        | 552        | 566        | 548        | 512        | 581        | 586        | 660         | 628        | 616        | 606        | 650         |
| Chloride                           | mg/L  | 344       | 277       | 181 B      | 160 B      | 156J       | R          | 147        | 316        | 286        | 265        | 470        | 664        | 698        | 1060       | 893        | 784         | 390        | 427        | 419        | 709         |
| Ethane                             | µg/L  | ND (<1.0) | ND (<1.0) | ND (<1.5)  | ND (<7.5)  | ND (<1.5)  | ND (<1.5)  | ND (<1.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | 0.16J       | 0.33J      | 0.20J      | 0.24J      | 0.42J       |
| Ethene                             | µg/L  | ND (<1.0) | ND (<1.0) | ND (<1.5)  | ND (<7.5)  | ND (<1.5)  | ND (<1.5)  | ND (<1.5)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<0.035) | 0.12J      | ND (<0.10) | ND (<0.10) | ND (<0.032) |
| Ferrous Iron                       | mg/L  | 0.31      | ND (<0.2) | R          | 0.34J      | 0.47       | ND (<0.1)  | R          | ND (<0.10) | ND (<0.10) | 0.12       | 6.06       | ND (<0.10) | ND (<0.10) | ND (<0.10) | 0.11       | 1.0         | 4.2        | 4.7        | 3.2        | 4.8         |
| 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        | 1.3        | 1.6        | 1.2        | 1.2         | 1.020      | 1.030      | 0.882      | 0.994       |
| Methane                            | µg/L  | 64J       | 75        | 34         | 9.8        | 33         | 85         | 40         | 72         | 32         | 28         | 110        | 130        | 63         | 82         | 56         | 420         | 300        | 330        | 470        | 680         |
| Nitrate                            | mg/L  | NA        | ND (<1.0) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | 0.11       | ND (<0.05) | 0.12        | ND (<0.10) | ND (<0.10) | ND (<0.10) | ND (<0.10)  |
| 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        | 5.6        | 6.3        | 4          | 6.5         | 5.1        | 3.8        | 3.3        | 4.5         |
| Sulfate                            | mg/L  | NA        | 167       | 306        | 296 B      | R          | R          | 238 B      | 175        | 174        | 171        | 153        | 89.7       | 167        | 53.9       | 44.4       | 56.6        | 148        | 38.2       | ND (<100)  | 23.0        |
| Sulfide                            | mg/L  | NA        | R         | R          | ND (<1.0)  | 0.8J       | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   |

B = Present in Associated Blank Sample  
D = Diluted Sample  
J = Estimated Concentration  
mg/L = Milligrams per Liter  
MNA = Monitored Natural Attenuation  
NA = Not Analyzed  
ND (<#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
R = Rejected  
µg/L = Micrograms per Liter  
WQ = Water Quality



Table 3  
Groundwater Analytical Data  
MW-11

| CONSTITUENT             | UNITS | NYSDEC<br>AWQS 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    | 10/20/14   | 04/16/15    | 10/14/15 | 04/06/16 | 10/25/16 | 04/26/17 | 10/11/17 | 04/26/18 | 10/16/18 |
|-------------------------|-------|-----------------------|-----------|-----------|-----------|-----------|----------|------------|-----------|-------------|-------------|-------------|-------------|------------|-------------|----------|----------|----------|----------|----------|----------|----------|
| <b>BTEX Compounds</b>   |       |                       |           |           |           |           |          |            |           |             |             |             |             |            |             |          |          |          |          |          |          |          |
| Benzene                 | µg/L  | 1                     | 27        | 16        | 2.8       | 13        | 18       | 15         | 7.9       | 12          | 3.5         | 8.1         | 10          | 22         | 7.3         | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Ethylbenzene            | µg/L  | 5                     | 7.3       | 7.2       | 1.9       | 6.9       | 6.1      | 5.5        | 3.5       | ND (<1.0)   | 1.2         | 3.8         | 5.1         | 7.8        | 3           | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| m/p-Xylene              | µg/L  | 5                     | 3         | 3.9       | 2.2       | 5.3       | 2.4      | 2.1        | 1.4J      | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | 2.1        | ND (<2.0)   | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| o-Xylene                | µg/L  | 5                     | 2.6       | 2.7       | 1.1       | 3.1       | 2.0      | 2.0        | 1.2       | ND (<1.0)   | ND (<1.0)   | 1.6         | 2.1         | 2.6        | 1.5         | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Total Xylenes           | µg/L  | 5                     | 1.3       | 1.3       | ND (<1.0) | 8.4       | 2.4      | 2.1        | 1.2       | 0           | 0           | 1.6         | 2.1         | 4.7        | 1.5         | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Toluene                 | µg/L  | 5                     | 1.3       | 1.3       | ND (<1.0) | 1.4       | 0.97J    | 0.99J      | 0.69J     | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | 1.1         | 1.9        | ND (<1.0)   | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| <b>PAHs</b>             |       |                       |           |           |           |           |          |            |           |             |             |             |             |            |             |          |          |          |          |          |          |          |
| Acenaphthene            | µg/L  | 20                    | 150 D     | 140 D     | 150       | 110       | 120      | 130        | 100       | 140 E       | 97          | 110         | 120         | 110        | 59          | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Acenaphthylene          | µg/L  | NC                    | 280JD     | 330 D     | 290       | 290       | 240 D    | 270 D      | 210       | 160 E       | 120         | 170         | 110         | 150        | 56          | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Anthracene              | µg/L  | 50                    | 21        | 18        | 88        | 19 B      | 19       | 17         | 11        | 23          | 13          | 28          | 13          | 16         | 4.2         | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Benzo(a)anthracene      | µg/L  | 0.002                 | 2.2J      | 2.2       | 35        | 6.2 B     | 2.7      | 3.0 B      | 5.2 B     | 3.8         | ND (<0.002) | 8.3         | 3.2         | 4.8        | 1.9         | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Benzo(a)pyrene          | µg/L  | 0.002                 | 1.7       | 2.2       | 34        | 5.7 B     | 2.8      | 2.5 B      | 2.3J      | 2.7         | 3.3         | 8.5         | 2.8         | 4.7        | 0.84        | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Benzo(b)fluoranthene    | µg/L  | 0.002                 | 0.65J     | 0.62J     | 24        | 4.8 B     | 1.9      | 2.1        | 1.8J      | 1.7         | ND (<0.002) | ND (<0.002) | ND (<0.002) | 4.6        | 0.68        | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Benzo(g,h,i)perylene    | µg/L  | NC                    | 0.90J     | 1.2J      | 20        | 4.0 B     | 1.4      | 1.7        | 1.3J      | 1           | 1           | 3.4         | ND (<0.002) | 1.8        | ND (<0.002) | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Benzo(k)fluoranthene    | µg/L  | 0.002                 | 0.90J     | 1.1J      | 12        | 2.5 B     | 1        | 0.78       | 1.2J      | 1.6         | ND (<0.002) | ND (<0.002) | ND (<0.002) | 2.1        | ND (<0.002) | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Chrysene                | µg/L  | 0.002                 | 2.8       | 2.9       | 43        | 8.1 B     | 3.3      | 3.5 B      | ND (<5.1) | 3.4         | 4.4         | 10          | 5.4         | 7.6        | 0.99        | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Dibenz(a,h)anthracene   | µg/L  | NC                    | ND (<1.0) | ND (<2.1) | 3.2       | ND (<2.4) | 0.30J    | 0.59       | ND (<5.1) | ND (<5.1)   | ND (<5.1)   | ND (<5.1)   | ND (<5.1)   | ND (<0.47) | ND (<0.47)  | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Fluoranthene            | µg/L  | 50                    | 18        | 14        | 96        | 22 B      | 20       | 16         | 12        | 24          | 14          | 28          | 12          | 16         | 5.4         | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Fluorene                | µg/L  | 50                    | 110 D     | 100 D     | 130       | 72        | 79       | 83         | 62        | 92          | 62          | 70          | 31          | 44         | 16          | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Indeno(1,2,3-cd)pyrene  | µg/L  | 0.002                 | 0.65J     | 2.1J      | 13        | 2.8 B     | 0.96     | 1.0 B      | 0.69J     | 1.6         | ND (<0.002) | ND (<0.002) | ND (<0.002) | 1.2        | ND (<0.002) | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Naphthalene             | µg/L  | 10                    | 180 D     | 560 D     | 300       | 480       | 310 D    | 230 D      | 140       | 110         | 50          | 87          | 51          | 2.3        | NS          | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Phenanthrene            | µg/L  | 50                    | 160 D     | 150 D     | 260       | 52 B      | 140 D    | 130        | 91        | 170         | 80          | 130         | 5.8         | 62         | 1.5         | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Pyrene                  | µg/L  | 50                    | 26J       | 17        | 150       | 28 B      | 21       | 21         | 16        | 28          | 18          | 34          | 17          | 20         | 4.2         | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| <b>Cyanide and Lead</b> |       |                       |           |           |           |           |          |            |           |             |             |             |             |            |             |          |          |          |          |          |          |          |
| Lead                    | µg/L  | 25                    | ND (<5.0) | ND (<5.0) | 40        | 7.6       | 12       | ND (<5.0)  | 4.6J      | ND (<5.0)   | ND (<5.0)   | 5.9         | ND (<5.0)   | 0.014      | ND (<5.0)   | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Cyanide                 | mg/L  | 0.2                   | 0.024     | 0.027     | R         | 0.015J    | 0.021    | ND (<0.01) | 0.012     | ND (<0.010) | ND (<0.010) | ND (<0.010) | 0.018       | 0.021      | 0.012       | NS       | NS       | NS       | NS       | NS       | NS       | NS       |

AWQS = Ambient Water Quality Standards  
B = Present in Associated Blank Sample  
BTEX = Benzene, Ethylbenzene, Toluene and Xylene  
D = Diluted Sample  
E = Result exceeded calibration range  
F1 = MS and/or MSD Recovery outside acceptance limits.  
F2 = MS/MSD RPD above control limits.  
J = Estimated Concentration Value  
mg/L = Milligrams per Liter  
NC = No Criteria  
ND (#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
NYSDEC = New York State Department of Environmental Conservation  
PAHs = Polycyclic Aromatic Hydrocarbons  
R = Rejected  
µg/L = Micrograms per Liter  
**Bolded** = values indicated exceedance of the NYSDEC AWQS



Table 3  
Groundwater Analytical Data  
MW-11

| 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  | 10/15/14  | 04/16/15  | 10/14/15 | 04/06/16 | 10/25/16 | 04/26/17 | 10/11/17 | 04/26/18 | 10/16/18 |
|------------------------------------|-------|-----------|-----------|-----------|------------|------------|------------|-----------|-------------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|----------|----------|----------|----------|
| <b>MNA/WQ Parameters</b>           |       |           |           |           |            |            |            |           |             |           |           |           |           |           |          |          |          |          |          |          |          |
| Alkalinity (as CaCO <sub>3</sub> ) | mg/L  | 502       | 504       | R         | R          | 518J       | 536J       | R         | 623         | 507       | 573       | 465       | 457       | 428       | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Chloride                           | mg/L  | 612       | 606       | 345       | 414 B      | 514J       | R          | 321       | 350         | 202       | 295       | 454       | 384       | 314       | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Ethane                             | µg/L  | ND (<10)  | ND (<5.0) | ND (<1.5) | ND (<1.5)  | ND (<1.5)  | ND (<1.5)  | ND (<15)  | ND (<380)   | ND (<380) | ND (<380) | ND (<380) | ND (<7.5) | ND (<7.5) | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Ethene                             | µg/L  | ND (<10)  | ND (<5.0) | ND (<1.5) | ND (<1.5)  | ND (<1.5)  | ND (<1.5)  | ND (<15)  | ND (<350)   | ND (<350) | ND (<350) | ND (<350) | ND (<7.0) | ND (<7.0) | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Ferrous Iron                       | mg/L  | ND (<0.2) | ND (<0.5) | R         | 9.4J       | 0.9J       | R          | ND (<0.1) | 0.5         | 0.18      | 0.22      | 0.29      | ND (<0.1) | ND (<0.1) | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| 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      | 0.25      | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Methane                            | µg/L  | 730J      | 420       | 4.6       | 69         | 190        | 360        | 160       | 520         | 12        | 25        | 120       | 180       | 13        | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Nitrate                            | mg/L  | NA        | ND (<1.0) | 0.13      | ND (<0.05) | ND (<0.05) | ND (<0.05) | 0.092     | ND (<0.050) | 0.79      | 0.32      | 0.32      | 0.059     | 0.28      | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| 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       | 0.26      | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Sulfate                            | mg/L  | NA        | 46.3      | 126 B     | 65.1 B     | R          | R          | 8.5 B     | 16.9        | 112       | 94.1      | 58        | 44.3      | 82.9      | NS       | NS       | NS       | NS       | NS       | NS       | NS       |
| Sulfide                            | mg/L  | NA        | ND (<1.0) | 0.8J      | 0.8J       | 1.6        | ND (<1.0)  | ND (<1.0) | ND (<1.0)   | ND (<1.0) | ND (<1.0) | ND (<1.0) | 1.8       | ND (<1.0) | NS       | NS       | NS       | NS       | NS       | NS       | NS       |

B = Present in Associated Blank Sample  
D = Diluted Sample  
J = Estimated Concentration  
mg/L = Milligrams per Liter  
MNA = Monitored Natural Attenuation  
NA = Not Analyzed  
ND (<#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
R = Rejected  
µg/L = Micrograms per Liter  
WQ = Water Quality





Table 3  
Groundwater Analytical Data  
MW-12

| CONSTITUENT             | UNITS | NYSDEC<br>AWQS 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    | 10/20/14   | 04/16/15   | 10/14/15   | 04/06/16   | 10/26/16    | 04/26/17    | 10/11/17    | 04/26/18    | 10/16/18    |
|-------------------------|-------|-----------------------|-----------|------------|------------|------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|
| <b>BTEX Compounds</b>   |       |                       |           |            |            |            |             |             |             |             |            |            |            |            |             |             |             |             |             |
| Benzene                 | µg/L  | 1                     | ND (<1.0) | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | 2.1         | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| Ethylbenzene            | µg/L  | 5                     | ND (<1.0) | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| m/p-Xylene              | µg/L  | 5                     | ND (<2.0) | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   |
| o-Xylene                | µg/L  | 5                     | ND (<1.0) | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| Toluene                 | µg/L  | 5                     | ND (<1.0) | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| <b>PAHs</b>             |       |                       |           |            |            |            |             |             |             |             |            |            |            |            |             |             |             |             |             |
| Acenaphthene            | µg/L  | 20                    | ND (<0.2) | ND (<0.49) | 0.086J     | ND (<0.52) | 14          | ND (<0.2)   | 1.1         | 1.1         | ND (<0.48) | ND (<0.48) | ND (<0.47) | ND (<0.51) | 0.11        | ND (<0.097) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Acenaphthylene          | µg/L  | NC                    | 0.09J     | ND (<0.49) | 0.25J      | 0.18J      | 100         | ND (<0.2)   | ND (<0.2)   | 0.63        | ND (<0.2)  | ND (<0.47) | ND (<0.51) | 4.4        | ND (<0.097) | 0.30        | 0.39        | 0.62        |             |
| Anthracene              | µg/L  | 50                    | 0.07J     | ND (<0.49) | 0.21J      | 0.13J      | 2.8         | ND (<0.2)   | 1.1         | 1.1         | 0.88       | ND (<0.2)  | 0.73       | ND (<0.51) | 1.4         | ND (<0.097) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Benzo(a)anthracene      | µg/L  | 0.002                 | 0.12J     | ND (<0.49) | 0.64 B     | 0.57 B     | 1.5         | 0.83        | 3           | 0.66        | 1.5        | ND (<0.49) | ND (<0.47) | ND (<0.51) | 2.1         | 0.11        | 0.14        | ND (<0.099) | ND (<0.11)  |
| Benzo(a)pyrene          | µg/L  | 0.002                 | 0.2       | ND (<0.49) | 0.69 B     | 0.35J      | 1.5         | 1           | 3.6         | 0.92        | 1.8        | ND (<0.49) | ND (<0.47) | ND (<0.51) | 2.8         | 0.11        | 0.16        | ND (<0.099) | ND (<0.11)  |
| Benzo(b)fluoranthene    | µg/L  | 0.002                 | 0.08J     | ND (<0.49) | 0.56       | 0.27J      | 1.3         | 0.91        | 3.4         | 0.71        | 2.1        | ND (<0.49) | ND (<0.47) | ND (<0.51) | 2.3         | 0.13        | 0.19        | ND (<0.099) | ND (<0.11)  |
| Benzo(g,h,i)perylene    | µg/L  | NC                    | 0.13J     | ND (<0.49) | 0.43J      | 0.27J      | 0.62        | ND (<0.49)  | ND (<0.49)  | 0.51        | 0.74       | ND (<0.49) | ND (<0.47) | ND (<0.51) | 1.6         | ND (<0.097) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Benzo(k)fluoranthene    | µg/L  | 0.002                 | 0.10J     | ND (<0.49) | ND (<0.49) | 0.38J      | 0.58        | ND (<0.49)  | 0.83        | ND (<0.49)  | 0.74       | ND (<0.49) | ND (<0.47) | ND (<0.51) | 0.94        | 0.11        | 0.16        | ND (<0.099) | ND (<0.11)  |
| Chrysene                | µg/L  | 0.002                 | 0.13J     | ND (<0.49) | 0.55 B     | 0.60 B     | 1.1         | 1           | 3           | ND (<0.49)  | 1.6        | ND (<0.49) | ND (<0.47) | ND (<0.51) | 1.9         | ND (<0.097) | 0.11        | ND (<0.099) | ND (<0.11)  |
| Dibenzo(a,h)anthracene  | µg/L  | NC                    | ND (<0.2) | ND (<0.49) | ND (<0.49) | ND (<0.52) | ND (<0.52)  | ND (<0.52)  | ND (<0.52)  | ND (<0.52)  | ND (<0.48) | ND (<0.49) | ND (<0.47) | ND (<0.51) | 0.29        | ND (<0.097) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Fluoranthene            | µg/L  | 50                    | 0.2       | ND (<0.49) | 0.73       | 0.41J      | 3.4         | 1.4         | 4.3         | 0.87        | 2.00       | ND (<0.49) | ND (<0.47) | 0.52       | 3.9         | 0.11        | 0.17        | ND (<0.099) | ND (<0.11)  |
| Fluorene                | µg/L  | 50                    | ND (<0.2) | ND (<0.49) | ND (<0.49) | ND (<0.52) | 2.2         | ND (<0.49)  | ND (<0.49)  | ND (<0.49)  | ND (<0.48) | ND (<0.49) | ND (<0.47) | ND (<0.51) | 0.51        | ND (<0.097) | ND (<0.10)  | ND (<0.099) | 0.13        |
| Indeno(1,2,3-cd)pyrene  | µg/L  | 0.002                 | 0.09J     | ND (<0.49) | ND (<0.49) | 0.13J      | 0.97        | ND (<0.49)  | 1.2         | ND (<0.49)  | 0.51       | ND (<0.49) | ND (<0.47) | ND (<0.51) | 1.2         | ND (<0.097) | ND (<0.10)  | ND (<0.099) | ND (<0.11)  |
| Naphthalene             | µg/L  | 10                    | ND (<0.2) | ND (<0.49) | 0.68       | ND (<0.52) | 160 E       | 2.5         | 0.99        | ND (<0.52)  | 1.6        | ND (<0.49) | 1.9        | ND (<0.51) | 0.96        | ND (<0.097) | 0.15        | ND (<0.099) | ND (<0.11)  |
| Phenanthrene            | µg/L  | 50                    | 1.9J      | ND (<0.49) | 0.66       | 0.48J      | 7.6         | 1.1         | 3.6         | 0.61        | 2          | ND (<0.49) | ND (<0.47) | ND (<0.51) | 3.5         | ND (<0.097) | 0.14        | ND (<0.099) | ND (<0.11)  |
| Pyrene                  | µg/L  | 50                    | 0.23      | ND (<0.49) | 0.95       | 0.59       | 4.2         | 2.4         | 5.8         | 1.3         | 2.8        | ND (<0.49) | ND (<0.47) | 0.64       | 5.4         | 0.17        | 0.24        | ND (<0.099) | ND (<0.11)  |
| <b>Cyanide and Lead</b> |       |                       |           |            |            |            |             |             |             |             |            |            |            |            |             |             |             |             |             |
| Lead                    | µg/L  | 25                    | ND (<5.0) | ND (<3.0)  | ND (<5.0)  | ND (<5.0)  | ND (<5.0)   | ND (<5.0)   | 29          | ND (<5.0)   | 0.018      | ND (<0.49) | ND (<10)   | ND (<10)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   |
| Cyanide                 | mg/L  | 0.2                   | 0.01      | 0.004J     | R          | 0.0062J    | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | 0.013      | ND (<0.49) | ND (<0.01) | ND (<0.01) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) | ND (<0.010) |

AWQS = Ambient Water Quality Standards  
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Table 3  
Groundwater Analytical Data  
MW-12

| CONSTITUENT              | 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  | 10/15/14  | 04/16/15  | 10/14/15  | 04/06/16  | 10/26/16    | 04/26/17    | 10/11/17    | 04/26/18    | 10/16/18    |
|--------------------------|-------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|-------------|
| <b>MNA/WQ Parameters</b> |       |           |           |           |           |            |           |           |           |           |           |           |           |             |             |             |             |             |
| Alkalinity (as CaCO3)    | mg/L  | 502       | 455J      | 478J      | R         | 434        | 391       | 415       | 329       | 414       | 368       | 401       | 415       | 436         | 466         | 366         | 456         | 430         |
| Chloride                 | mg/L  | 488       | 165J      | R         | 129 B     | 468        | 123       | 662       | 150       | 493       | 139       | 591       | 276       | 556         | 152         | 587         | 345         | 757         |
| Ethane                   | µg/L  | ND (<1.0) | ND (<1.5) | ND (<1.5) | ND (<1.5) | ND (<7.5)  | ND (<7.5) | ND (<7.5) | ND (<7.5) | ND (<7.5) | ND (<7.5) | ND (<7.5) | ND (<7.5) | 0.47J       | ND (<0.025) | ND (<0.030) | ND (<0.030) | ND (<0.16)  |
| Ethene                   | µg/L  | ND (<1.0) | ND (<1.5) | ND (<1.5) | ND (<1.5) | ND (<7.0)  | ND (<7.0) | ND (<7.0) | ND (<7.0) | ND (<7.0) | ND (<7.0) | ND (<7.0) | ND (<7.0) | ND (<0.035) | ND (<0.035) | ND (<0.10)  | ND (<0.10)  | ND (<0.032) |
| Ferrous Iron             | mg/L  | ND (<0.1) | R         | ND (<0.1) | ND (<0.1) | 0.44       | ND (<0.1) | ND (<0.1) | ND (<0.1) | ND (<0.1) | ND (<0.1) | ND (<0.1) | ND (<0.1) | 0.11        | ND (<0.10)  | ND (<0.10)  | ND (<0.10)  | ND (<0.10)  |
| Manganese                | mg/L  | 0.084     | 0.096     | 0.16      | 0.12      | 0.52       | 0.19      | 2.1       | 0.36      | 1.2       | 0.16      | 0.039     | 0.062     | 0.202       | 0.0201      | 0.0399      | 0.0113      | 15.2        |
| Methane                  | µg/L  | ND (<2.0) | ND (<1.0) | 1.1       | 0.56J     | 47         | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<4.0) | ND (<4.0) | ND (<4.0) | ND (<4.0) | 1.95        | 0.24J       | 0.27J       | 1.0J        | 0.35J       |
| Nitrate                  | mg/L  | 4         | 6.6       | 6.2       | 3.2       | ND (<0.05) | 2.5       | 4.8       | 1.4       | 3.7       | 1.4       | 2.5       | 3.3       | 2.9         | 5.1         | 3.6         | 0.84        | 5.6         |
| Nitrogen                 | mg/L  | 0.48      | ND (<0.2) | R         | 0.19J     | 0.29       | 0.24      | 2.4       | 0.44      | 0.61      | 0.61      | ND (<0.2) | ND (<0.2) | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | 5.1         |
| Sulfate                  | mg/L  | 97.9      | R         | R         | 53.5 B    | 81.4       | 73.5      | 115       | 51.6      | 73.5      | 54.8      | 70.2      | 93.7      | 56.0        | 115         | 53.7        | 70.3        | 66.8        |
| Sulfide                  | mg/L  | 1.1J      | 0.8J      | ND (<1.0) | ND (<1.0) | ND (<1.0)  | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |

B = Present in Associated Blank Sample  
D = Diluted Sample  
J = Estimated Concentration  
mg/L = Milligrams per Liter  
MNA = Monitored Natural Attenuation  
NA = Not Analyzed  
ND (<#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
R = Rejected  
µg/L = Micrograms per Liter  
WQ = Water Quality



Table 3  
Groundwater Analytical Data  
MW-13

| CONSTITUENT             | UNITS | NYSDEC<br>AWQS 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  | 10/20/14   | 04/16/15    | 10/13/15   | 04/06/16  | 10/25/16   | 04/26/17  | 10/11/17   | 04/26/18    | 10/16/18    |
|-------------------------|-------|-----------------------|-----------|-----------|------------|-----------|----------|----------|----------|-----------|----------|-----------|-----------|------------|-------------|------------|-----------|------------|-----------|------------|-------------|-------------|
| <b>BTEX Compounds</b>   |       |                       |           |           |            |           |          |          |          |           |          |           |           |            |             |            |           |            |           |            |             |             |
| Benzene                 | µg/L  | 1                     | 430       | 360       | 71         | 200       | 59       | 300      | 370      | 360       | 490      | 400       | 200       | 300        | 17          | 360        | 300       | 348        | 15.5      | 363        | 11.6        | 32.8        |
| Ethylbenzene            | µg/L  | 5                     | 850       | 730       | 87         | 200       | 110      | 520      | 670      | 490       | 600      | 320       | 200       | 340        | 17          | 190        | 270       | 366        | 7.4       | 210        | 4.8         | 23.3        |
| m/p-Xylene              | µg/L  | 5                     | 920       | 810       | 110        | 240       | 140      | 550      | 740      | 590       | 730      | 420       | 250       | 480        | 24          | 270        | 360       | 467        | 12.1      | 257        | 8.6         | 34.8        |
| o-Xylene                | µg/L  | 5                     | 390       | 350       | 71         | 130       | 74       | 260      | 340      | 260       | 320      | 190       | 120       | 210        | 16          | 120        | 150       | 203        | 8.4       | 117        | 9.3         | 18.6        |
| Toluene                 | µg/L  | 5                     | 800       | 660       | 80         | 260       | 89       | 550      | 740      | 520 E     | 710      | 440       | 270       | 430        | 17          | 320        | 410       | 552        | 7.6       | 332        | 3.9         | 25.1        |
| <b>PAHs</b>             |       |                       |           |           |            |           |          |          |          |           |          |           |           |            |             |            |           |            |           |            |             |             |
| Acenaphthene            | µg/L  | 20                    | 120       | 140       | 17         | 46        | 60       | 76       | 82J      | 170       | 130      | 77        | 71        | 130        | ND (<4.9)   | 65 E       | 130       | 225        | 0.34      | 78.4       | 0.16        | 4.3         |
| Acenaphthylene          | µg/L  | NC                    | 260JD     | 320 D     | 51         | 170       | 220J     | 230 D    | 210      | 570       | 430      | 350       | 22        | 450        | ND (<4.9)   | 77 E       | 220       | 267        | 1.2       | 122        | 0.61        | 6.4         |
| Anthracene              | µg/L  | 50                    | 12        | 15        | 3.6        | 12 B      | 15       | 15       | ND (<97) | ND (<47)  | ND (<47) | ND (<47)  | 6.9       | 14         | ND (<4.9)   | 9.2 F1 F2  | 10        | 19.2       | 0.55      | 7.2        | 0.25        | 0.73        |
| Benzo(a)anthracene      | µg/L  | 0.002                 | 1.9J      | 2J        | 0.35J      | 4.9 B     | 7.3J     | 5.3 B    | ND (<97) | ND (<47)  | ND (<47) | ND (<47)  | ND (<47)  | 1.9        | ND (<0.001) | 0.59 F2    | ND (<9.7) | 6.7        | 0.93      | 1.7        | 0.30        | 0.22        |
| Benzo(a)pyrene          | µg/L  | 0.002                 | 1.9J      | 1.4J      | 0.13J      | 4.1 B     | ND (<10) | 5.3 B    | ND (<97) | ND (<47)  | ND (<47) | ND (<47)  | ND (<47)  | 1.6        | ND (<0.001) | ND (<0.49) | ND (<9.7) | 6.5        | 1.0       | 1.3        | 0.40        | 0.20        |
| Benzo(b)fluoranthene    | µg/L  | 0.002                 | 0.75J     | 0.76J     | ND (<0.49) | 3.5 B     | ND (<10) | 3.8      | ND (<97) | ND (<47)  | ND (<47) | ND (<47)  | ND (<47)  | 2.8        | ND (<0.001) | ND (<0.49) | ND (<9.7) | 6.2        | 1.2       | 1.6        | 0.47        | 0.22        |
| Benzo(g,h,i)perylene    | µg/L  | NC                    | 0.75J     | ND (<3.9) | ND (<0.49) | 2.5 B     | ND (<10) | 3.9      | ND (<97) | ND (<47)  | ND (<47) | ND (<47)  | ND (<47)  | 0.6        | ND (<0.001) | ND (<0.49) | ND (<9.7) | 3.3        | 0.55      | ND (<0.98) | 0.21        | ND (<0.099) |
| Benzo(k)fluoranthene    | µg/L  | 0.002                 | ND (<3.8) | 0.78J     | ND (<0.49) | ND (<2.4) | ND (<10) | 2.6      | ND (<97) | ND (<47)  | ND (<47) | ND (<47)  | ND (<47)  | 0.53       | ND (<0.001) | ND (<0.49) | ND (<9.7) | 2.5        | 1.1       | 1.3        | 0.35        | 0.20        |
| Chrysene                | µg/L  | 0.002                 | 1.7J      | 1.4J      | 0.26J      | 3.6 B     | 5.5J     | 4.9 B    | ND (<97) | ND (<47)  | ND (<47) | ND (<47)  | ND (<47)  | 1.8        | ND (<0.001) | 0.50 F1 F2 | ND (<9.7) | 6.1        | 0.81      | 1.3        | 0.22        | 0.20        |
| Dibenz(a,h)anthracene   | µg/L  | NC                    | ND (<3.8) | ND (<3.9) | ND (<0.49) | ND (<2.4) | ND (<10) | 0.79 B   | ND (<97) | ND (<47)  | ND (<47) | ND (<47)  | ND (<47)  | ND (<0.47) | ND (<0.001) | ND (<0.49) | ND (<9.7) | 0.85       | 0.13      | ND (<0.98) | ND (<0.099) | ND (<0.099) |
| Fluoranthene            | µg/L  | 50                    | 7.7       | 8.4       | 2.6        | 12 B      | 16       | 14       | ND (<97) | ND (<47)  | ND (<47) | ND (<47)  | 6.1       | 8.2        | ND (<4.9)   | 5.5 F2     | ND (<9.7) | 17.8       | 1.9       | 5.4        | 0.51        | 0.77        |
| Fluorene                | µg/L  | 50                    | 73        | 84        | 18         | 48        | 52J      | 53       | 37J      | 110       | 93       | 66        | 30        | 94J        | ND (<4.9)   | 43 F1 F2   | 55        | 74.8       | 0.46      | 37.9       | 0.19        | 2.6         |
| Indeno(1,2,3-cd)pyrene  | µg/L  | 0.002                 | ND (<3.8) | ND (<3.9) | ND (<0.49) | ND (<2.4) | ND (<10) | 2.3 B    | ND (<97) | ND (<47)  | ND (<47) | ND (<47)  | ND (<47)  | 0.48       | ND (<0.001) | ND (<0.49) | ND (<9.7) | 2.7        | 0.42      | ND (<0.98) | 0.17        | ND (<0.099) |
| Naphthalene             | µg/L  | 10                    | 6000 D    | 5600 D    | 250 D      | 1600 D    | 2900 D   | 5000 D   | 4100     | 8200      | 7100     | 3700      | ND (<10)  | 4200       | ND (<4.9)   | 350 E      | 170       | 5560       | 0.96      | 1880       | 0.45        | 0.31        |
| Phenanthrene            | µg/L  | 50                    | 58        | 68        | 7.2        | 44 B      | 60       | 55       | 44J      | 76        | 73       | 61        | ND (<50)  | 70         | ND (<4.9)   | 31 F1      | ND (<9.7) | 78.3       | 1.5       | 32.8       | 0.60        | 0.37        |
| Pyrene                  | µg/L  | 50                    | 9.8J      | 8.8       | 2.9        | 14 B      | 19       | 17       | ND (<97) | ND (<47)  | ND (<47) | ND (<47)  | 7.2       | 9.7        | ND (<4.9)   | 5.8 F2     | ND (<9.7) | ND (<52.1) | 1.7       | 6.0        | 0.54        | 0.78        |
| <b>Cyanide and Lead</b> |       |                       |           |           |            |           |          |          |          |           |          |           |           |            |             |            |           |            |           |            |             |             |
| Lead                    | µg/L  | 25                    | 6.4       | ND (<5.0) | ND (<5.0)  | 15J       | 27       | 9.2      | 5.8      | ND (<5.0) | 7.8      | ND (<5.0) | ND (<5.0) | ND (<5.0)  | ND (<4.9)   | ND (<10)   | ND (<10)  | ND (<5.0)  | ND (<5.0) | ND (<5.0)  | ND (<5.0)   | ND (<5.0)   |
| Cyanide                 | mg/L  | 0.2                   | 0.618     | 0.652     | R          | 0.42J     | 0.235    | R        | 0.33     | 0.39      | 0.32     | 0.26      | 0.17      | 0.24       | 0.11        | 0.22 F1    | 0.29      | 0.23       | 0.070     | 0.20       | 0.062       | 0.10        |

AWQS = Ambient Water Quality Standards  
B = Present in Associated Blank Sample  
BTX = Benzene, Ethylbenzene, Toluene and Xylene  
D = Diluted Sample  
E = Result exceeded calibration range  
F1 = MS and/or MSD Recovery outside acceptance limits.  
F2 = MS/MSD RPD above control limits.  
J = Estimated Concentration Value  
mg/L = Milligrams per Liter  
NC = No Criteria  
ND (#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
NYSDEC = New York State Department of Environmental Conservation  
PAHs = Polycyclic Aromatic Hydrocarbons  
R = Rejected  
µg/L = Micrograms per Liter  
**Bolded** = values indicated exceedance of the NYSDEC AWQS



Table 3  
Groundwater Analytical Data  
MW-13

| 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   | 10/15/14   | 10/13/15   | 04/06/16  | 10/25/16   | 04/26/17    | 10/11/17   | 04/26/18    | 10/16/18   |
|------------------------------------|-------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|------------|-------------|------------|-------------|------------|
| <b>MNA/WQ Parameters</b>           |       |           |           |            |            |            |            |            |            |            |            |            |            |            |           |            |             |            |             |            |
| Alkalinity (as CaCO <sub>3</sub> ) | mg/L  | 80        | 96.4      | R          | R          | 455J       | 165J       | R          | 158        | 218        | 187        | 176        | 255        | 283 F1     | 311       | 364        | 234         | 308        | 226         | 280        |
| Chloride                           | mg/L  | 12.3      | 10.5      | 29.1       | 18.8 B     | 5.9J       | R          | 20.5       | 21.6       | 20.4       | 7.3        | 9.2        | 17.3       | 11.2       | 9.8       | 11.4       | 3.4         | 7.6        | 92.7        | 31.6       |
| Ethane                             | µg/L  | 1.4J      | 1.8       | ND (<1.5)  | ND (<15)   | ND (<1.5)  | ND (<15)   | ND (<15)   | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5)  | ND (<7.5) | 1.2        | ND (<0.025) | 0.88J      | ND (<0.030) | 0.22J      |
| Ethene                             | µg/L  | 2.4       | 2.8       | ND (<1.5)  | ND (<15)   | ND (<1.5)  | ND (<15)   | ND (<15)   | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.0)  | ND (<7.5) | 3.3        | ND (<0.035) | 2.3        | ND (<0.10)  | 0.46J      |
| Ferrous Iron                       | mg/L  | ND (<0.1) | 0.32      | R          | ND (<0.1)  | 3.1J       | 0.08J      | ND (<0.1)  | 0.12       | ND (<0.1)  | ND (<0.1)  | ND (<0.1)  | ND (<0.1)  | ND (<0.1)  | ND (<1.0) | 0.18       | ND (<0.10)  | ND (<0.10) | ND (<0.10)  | ND (<0.10) |
| Manganese                          | mg/L  | NA        | 0.84      | 0.12       | 0.077      | 0.83       | 0.16       | 0.096      | 0.092      | 0.11       | 0.088      | 0.14       | 0.031      | 0.064      | ND (<7.5) | 0.0938     | 0.0417      | 0.0705     | 0.0570      | 0.0619     |
| Methane                            | µg/L  | 77J       | 110 D     | 32         | 46         | 28J        | 72         | 66         | 120        | 36         | 15         | 74         | ND (<4.0)  | 110        | 50        | 280        | 0.34J       | 190        | 12          | 73         |
| Nitrate                            | mg/L  | NA        | ND (<1.0) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | 0.05      | ND (<0.10) | ND (<0.10)  | ND (<0.10) | ND (<0.10)  | ND (<0.10) |
| Nitrogen                           | mg/L  | 2.27      | 1.69      | 1.1        | 1.3        | ND (<2.0)  | R          | 1.4        | 1.4        | 1.8        | 1.2        | 2.1        | 0.62       | 1.4        | 1.2       | 1.3        | ND (<1.0)   | 2.1        | ND (<1.0)   | 4.5        |
| Sulfate                            | mg/L  | NA        | 86.8      | ND (<5.0)  | 3.3JB      | R          | R          | 52.1J      | 139        | 82.3       | 15.5       | 15.5       | ND (<5.0)  | ND (<5.0)  | ND (<5.0) | 18.3       | 16.0        | 42.3       | 20.4        | 28.6       |
| Sulfide                            | mg/L  | NA        | 3.3J      | ND (<1.0)  | 3.2J       | 1.2        | R          | R          | 1.2        | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | 1         | ND (<1.0)  | ND (<1.0)   | ND (<1.0)  | ND (<1.0)   | ND (<1.0)  |

B = Present in Associated Blank Sample  
D = Diluted Sample  
J = Estimated Concentration  
mg/L = Milligrams per Liter  
MNA = Monitored Natural Attenuation  
NA = Not Analyzed  
ND (<#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
R = Rejected  
µg/L = Micrograms per Liter  
WQ = Water Quality



Table 3  
Groundwater Analytical Data  
MW-14

| CONSTITUENT             | UNITS | NYSDEC<br>AWQS 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   | 10/20/14   | 04/16/15   | 10/13/15   | 04/06/16   | 10/25/16   | 04/26/17    | 10/11/17    | 04/26/18    | 10/16/18    |
|-------------------------|-------|-----------------------|----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|
| <b>BTEX Compounds</b>   |       |                       |          |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |             |             |             |             |
| Benzene                 | µg/L  | 1                     | 25       | 17         | ND (<1.0)  | 2.5        | 11         | 2.5        | 2.9        | ND (<1.0)  | ND (<1.0)  | 1.3        | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<0.54) | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| Ethylbenzene            | µg/L  | 5                     | 5.1      | 3.3        | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | 1.3        | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<0.54) | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| m/p-Xylene              | µg/L  | 5                     | 5.1      | 3.1        | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | 2.4        | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<2.0)  | ND (<0.54) | ND (<2.0)  | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   | ND (<2.0)   |
| o-Xylene                | µg/L  | 5                     | 9.1      | 5.6        | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | 2.2        | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<0.54) | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| Toluene                 | µg/L  | 5                     | 1.8      | 0.88J      | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<0.54) | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   | ND (<1.0)   |
| <b>PAHs</b>             |       |                       |          |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |             |             |             |             |
| Acenaphthene            | µg/L  | 20                    | 9.3      | 4.9        | ND (<0.47) | ND (<0.47) | 1.2        | 0.82       | 5.1        | 1.4        | ND (<0.48) | 2.2        | 0.5        | 2.00       | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.19       | ND (<0.096) | 1.7         | ND (<0.099) | ND (<0.099) |
| Acenaphthylene          | µg/L  | NC                    | 17JD     | 11         | ND (<0.47) | ND (<0.47) | 3          | 1.3        | 9          | 1.9        | ND (<0.48) | 2.5        | ND (<0.48) | 2.9        | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.99       | 0.25        | 4.1         | 0.19        | 0.34        |
| Anthracene              | µg/L  | 50                    | 1.8      | 0.98       | ND (<0.47) | ND (<0.47) | ND (<0.50) | 0.18J      | 0.5        | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | 0.5        | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.25       | 0.096       | 0.29        | ND (<0.099) | 0.15        |
| Benzo(a)anthracene      | µg/L  | 0.002                 | 0.42J    | 0.27J      | ND (<0.47) | ND (<0.47) | 0.29J      | 0.91 B     | ND (<0.50) | ND (<0.48) | ND (<0.48) | 0.62       | 1          | 1.9        | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.28       | 0.13        | 0.26        | 0.11        | ND (<0.099) |
| Benzo(a)pyrene          | µg/L  | 0.002                 | 0.46     | 0.24J      | ND (<0.47) | ND (<0.47) | 0.15J      | 0.90 B     | 0.12J      | ND (<0.48) | ND (<0.48) | 0.65       | 1.3        | 2.4        | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.32       | 0.12        | 0.29        | ND (<0.099) | ND (<0.099) |
| Benzo(b)fluoranthene    | µg/L  | 0.002                 | 0.27     | 0.15J      | ND (<0.47) | ND (<0.47) | ND (<0.50) | 0.78       | ND (<0.50) | ND (<0.48) | ND (<0.48) | 0.79       | 1.2        | 3.8        | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.55       | 0.21        | 0.47        | 0.14        | ND (<0.099) |
| Benzo(g,h,i)perylene    | µg/L  | NC                    | 0.28     | 0.18J      | ND (<0.47) | ND (<0.47) | ND (<0.50) | 0.70       | 0.09J      | ND (<0.48) | ND (<0.48) | ND (<0.48) | 0.95       | 1.3        | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.29       | 0.11        | 0.24        | ND (<0.099) | ND (<0.099) |
| Benzo(k)fluoranthene    | µg/L  | 0.002                 | 0.3      | 0.15J      | ND (<0.47) | ND (<0.47) | ND (<0.50) | 0.57       | 0.17J      | ND (<0.48) | ND (<0.48) | ND (<0.48) | 0.83       | 1.1        | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.47       | 0.18        | 0.40        | 0.11        | ND (<0.099) |
| Chrysene                | µg/L  | 0.002                 | 0.43     | 0.3J       | ND (<0.47) | ND (<0.47) | 0.19J      | 0.85       | ND (<0.50) | ND (<0.48) | ND (<0.48) | 0.69       | 1.2        | 2.1        | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.27       | 0.13        | 0.24        | ND (<0.099) | ND (<0.099) |
| Dibenz(a,h)anthracene   | µg/L  | NC                    | 0.20J    | ND (<0.59) | ND (<0.47) | ND (<0.47) | ND (<0.50) | ND (<0.50) | ND (<0.50) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.49) | ND (<0.47) | ND (<0.52) | ND (<0.54) | ND (<0.10) | ND (<0.096) | ND (<0.099) | ND (<0.099) | ND (<0.099) |
| Fluoranthene            | µg/L  | 50                    | 1.7      | 1.2        | 0.081J     | ND (<0.47) | 0.32J      | 1.5        | 0.61       | 0.59       | ND (<0.48) | 1.2        | 1.5        | 3.2        | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.45       | 0.17        | 0.55        | 0.13        | ND (<0.099) |
| Fluorene                | µg/L  | 50                    | 3.8      | 1.4        | ND (<0.47) | ND (<0.47) | ND (<0.50) | 0.17J      | 0.35J      | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.49) | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.14       | ND (<0.096) | 0.21        | ND (<0.099) | ND (<0.099) |
| Indeno(1,2,3-cd)pyrene  | µg/L  | 0.002                 | 0.21     | ND (<0.59) | ND (<0.47) | ND (<0.47) | ND (<0.50) | ND (<0.50) | 0.054J     | ND (<0.48) | ND (<0.48) | ND (<0.48) | 0.63       | 0.95       | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.21       | ND (<0.096) | 0.18        | ND (<0.099) | ND (<0.099) |
| Naphthalene             | µg/L  | 10                    | 63 D     | 2.8        | ND (<0.47) | ND (<0.47) | 1.3        | ND (<0.50) | 1.2        | ND (<0.48) | 1.7        | 0.48       | ND (<0.48) | 1.1        | ND (<0.47) | ND (<0.52) | ND (<0.54) | 5.2        | ND (<0.096) | 4.2         | ND (<0.099) | ND (<0.099) |
| Phenanthrene            | µg/L  | 50                    | 9.1      | 2          | ND (<0.47) | ND (<0.47) | 0.25J      | 0.66       | 1.1        | ND (<0.48) | ND (<0.48) | 0.67       | 0.63       | 1.4        | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.22       | ND (<0.096) | 0.17        | ND (<0.099) | ND (<0.099) |
| Pyrene                  | µg/L  | 50                    | 2.5J     | 1.2        | 0.098J     | ND (<0.52) | 0.39J      | 2.2        | 0.7        | 0.76       | ND (<0.48) | 1.5        | 2.4        | 5.0        | ND (<0.47) | ND (<0.52) | ND (<0.54) | 0.68       | 0.28        | 0.74        | 0.20        | ND (<0.099) |
| <b>Cyanide and Lead</b> |       |                       |          |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |             |             |             |             |
| Lead                    | µg/L  | 25                    | 7.7      | ND (<5.0)  | ND (<5.0)  | 4.2J       | 4.8J       | 9.1        | 5.7        | 21         | ND (<5.0)  | 15         | ND (<5.0)  | 0.031      | ND (<0.01) | ND (<0.01) | ND (<1.0)  | 33.3       | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   |
| Cyanide                 | mg/L  | 0.2                   | 0.245    | 0.197      | R          | 0.11J      | 0.114      | R          | 0.28       | 1.4        | 0.1        | 0.2        | 0.9        | 0.2        | 0.091      | 0.120      | 0.88       | 0.67       | 0.079       | 0.25        | 0.062       | 0.11        |

AWQS = Ambient Water Quality Standards  
B = Present in Associated Blank Sample  
BTEx = Benzene, Ethylbenzene, Toluene and Xylene  
D = Diluted Sample  
E = Result exceeded calibration range  
F1 = MS and/or MSD Recovery outside acceptance limits.  
F2 = MS/MSD RPD above control limits.  
J = Estimated Concentration Value  
mg/L = Milligrams per Liter  
NC = No Criteria  
ND (#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
NYSDEC = New York State Department of Environmental Conservation  
PAHs = Polycyclic Aromatic Hydrocarbons  
R = Rejected  
µg/L = Micrograms per Liter  
**Bolded** = values indicated exceedance of the NYSDEC AWQS



**Table 3**  
**Groundwater Analytical Data**  
MW-14

| CONSTITUENT                        | 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   | 10/15/14  | 10/13/14  | 04/06/16   | 10/25/16    | 04/26/17    | 10/11/17   | 04/26/18    | 10/16/18    |
|------------------------------------|-------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|-----------|------------|------------|-----------|-----------|------------|-------------|-------------|------------|-------------|-------------|
| <b>MNA/WQ Parameters</b>           |       |           |           |           |           |           |           |            |            |           |            |            |           |           |            |             |             |            |             |             |
| Alkalinity (as CaCO <sub>3</sub> ) | mg/L  | 528       | 450       | R         | R         | 410       | 453J      | R          | 494        | 417       | 456        | 483        | 372       | 445       | 507        | 520         | 380         | 404        | 392         | 450         |
| Chloride                           | mg/L  | 9         | 10.8      | 6.1       | 9.7 B     | 5.1       | R         | 12.8       | 40.4       | 2         | 7.6        | 28.5       | 3.9       | 10.7      | 27.4       | 18.0        | 3.5         | 6.6        | ND (<3.0)   | 3.2         |
| Ethane                             | µg/L  | ND (<1.0) | ND (<1.0) | ND (<1.5) | ND (<1.5) | ND (<1.5) | ND (<1.5) | ND (<1.5)  | ND (<7.5)  | ND (<7.5) | ND (<7.5)  | ND (<7.5)  | ND (<7.5) | ND (<7.5) | ND (<7.5)  | 0.17J       | ND (<0.025) | 0.13J      | ND (<0.030) | ND (<0.16)  |
| Ethene                             | µg/L  | ND (<1.0) | ND (<1.0) | ND (<1.5) | ND (<1.5) | ND (<1.5) | ND (<1.5) | ND (<1.5)  | ND (<7.0)  | ND (<7.0) | ND (<7.0)  | ND (<7.0)  | ND (<7.0) | ND (<7.0) | ND (<7.5)  | ND (<0.035) | ND (<0.035) | ND (<0.10) | ND (<0.10)  | ND (<0.032) |
| Ferrous Iron                       | mg/L  | 0.29      | ND (<0.1) | R         | 0.11J     | ND (<0.1) | R         | ND (<0.1)  | 0.17       | ND (<0.1) | ND (<0.1)  | ND (<0.1)  | ND (<0.1) | ND (<0.1) | 0.11       | 0.55        | 0.22        | 0.93       | 0.47        | 0.30        |
| Manganese                          | mg/L  | NA        | 0.36      | 0.054     | 0.17      | 0.2       | 0.28      | 0.51       | 2          | 0.008     | 0.25       | 1          | 0.019     | 0.011     | ND (<7.5)  | 0.768       | 0.0262      | 0.416      | 0.201       | 0.0121      |
| Methane                            | µg/L  | 9.1       | 120 D     | ND (<1.0) | 6.2       | 46        | 15        | 70         | 140        | ND (<1.0) | 8.6        | 140        | ND (<4.0) | ND (<4.0) | 31         | 140         | 19          | 120        | 1.7J        | 1.4J        |
| Nitrate                            | mg/L  | NA        | ND (<1.0) | 0.71      | 0.19      | 0.086     | 0.023J    | ND (<0.05) | ND (<0.05) | 0.8       | ND (<0.05) | ND (<0.05) | 0.87      | 0.16      | ND (<0.05) | ND (<0.10)  | 0.29        | ND (<0.10) | ND (<0.10)  | 0.59        |
| Nitrogen                           | mg/L  | 0.81      | 0.77      | 0.85      | 0.32      | 0.36      | R         | 0.86       | 2.5        | 0.54      | 0.68       | 1.5        | 0.22      | 0.72      | 1          | 1.2         | ND (<1.0)   | ND (<1.0)  | 1.0         | ND (<1.0)   |
| Sulfate                            | mg/L  | NA        | 53.3      | ND (<5.0) | 19.6 B    | 5.6JB     | R         | 173 B      | 639        | ND (<5.0) | ND (<5.0)  | 363        | ND (<5.0) | ND (<5.0) | 324        | 153         | 12.5        | 52.4       | 15.2        | 20.3        |
| Sulfide                            | mg/L  | NA        | 1.6       | ND (<1.0) | ND (<1.0) | ND (<1.0) | R         | R          | ND (<1.0)  | ND (<1.0) | ND (<1.0)  | ND (<1.0)  | ND (<1.0) | ND (<1.0) | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   | ND (<1.0)  | ND (<1.0)   | ND (<1.0)   |

B = Present in Associated Blank Sample  
D = Diluted Sample  
J = Estimated Concentration  
mg/L = Milligrams per Liter  
MNA = Monitored Natural Attenuation  
NA = Not Analyzed  
ND (<#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
R = Rejected  
µg/L = Micrograms per Liter  
WQ = Water Quality



Table 3  
Groundwater Analytical Data  
MW-15

| CONSTITUENT             | UNITS | NYSDEC<br>AWQS 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   | 10/20/14   | 04/16/15   | 10/13/15   | 04/06/16  | 10/25/16   | 04/26/17    | 10/11/17    | 04/26/18    | 10/16/18    |
|-------------------------|-------|-----------------------|----------|-----------|------------|------------|------------|------------|-----------|------------|------------|------------|------------|------------|------------|------------|-----------|------------|-------------|-------------|-------------|-------------|
| <b>BTEX Compounds</b>   |       |                       |          |           |            |            |            |            |           |            |            |            |            |            |            |            |           |            |             |             |             |             |
| Benzene                 | µg/L  | 1                     | 1600 D   | 1200      | 940 D      | 1300 D     | 670        | 790 D      | 1500 D    | 1100 E     | 410        | 390        | 210        | 300        | 16         | 350 E      | 330       | 714        | 111         | 373         | 48.7        | 108         |
| Ethylbenzene            | µg/L  | 5                     | 200      | 250       | 190 D      | 210 D      | 120        | 190 D      | 220       | 200        | 75         | 53         | 38         | 74         | 1.9        | 92         | 110       | 244        | 24.5        | 124         | 19.2        | 45.2        |
| m/p-Xylene              | µg/L  | 5                     | 12       | 8.7       | 17         | 18         | 19J        | 9          | 6.6J      | 23         | 19         | ND (<5.0)  | ND (<5.0)  | ND (<10)   | 3.2        | 8.1        | ND (<8.0) | 13.7       | 2.7         | 9.4         | ND (<2.0)   | 2.8         |
| o-Xylene                | µg/L  | 5                     | 39       | 39        | 44         | 48         | 37         | 38         | 27        | 23         | 19         | 16         | 8.5        | 28         | 7.5        | 23         | 21        | 31.7       | 7.3         | 22.8        | 3.7         | 18.8        |
| Toluene                 | µg/L  | 5                     | 3.8J     | ND (<10)  | 6.1        | 4.7        | ND (<10)   | 6.3        | 6.2J      | 5          | ND (<5.0)  | ND (<5.0)  | ND (<5.0)  | 5.8        | ND (<1.0)  | 7          | ND (<8.0) | 6.1        | 1.1         | 7.4         | ND (<1.0)   | 2.9         |
| <b>PAHs</b>             |       |                       |          |           |            |            |            |            |           |            |            |            |            |            |            |            |           |            |             |             |             |             |
| Acenaphthene            | µg/L  | 20                    | 44J      | 49        | 47         | 32         | 47         | 50         | 47        | 57         | 42         | 23         | 18         | 24         | 6.7        | 16         | 23        | 43.1       | 10.1        | 16.3        | 12.4        | 32.7        |
| Acenaphthylene          | µg/L  | NC                    | 19J      | 23        | 24         | 17         | 22         | 19         | 12        | 16         | 11         | 6.5        | 3          | 3.9        | 0.59       | 3.1        | ND (<5.1) | 2.4        | 1.5         | 2.5         | 1.4         | 3.9         |
| Anthracene              | µg/L  | 50                    | 2.7J     | 3.3       | 2.1        | 1.3 B      | 2.4        | 2          | 1.5J      | 2.8        | 2.6        | 1.4        | 0.95       | 0.81       | ND (<0.49) | 0.57       | ND (<5.1) | 1.9        | 0.36        | 0.56        | 0.31        | 0.55        |
| Benzo(a)anthracene      | µg/L  | 0.002                 | 1.8J     | 0.85J     | 0.38J      | ND (<0.48) | 0.21J      | ND (<0.54) | ND (<4.7) | ND (<0.58) | 0.96       | 0.59       | ND (<0.58) | ND (<0.48) | ND (<0.49) | ND (<0.47) | ND (<5.1) | 0.14       | 0.13        | 0.55        | 0.14        | ND (<0.099) |
| Benzo(a)pyrene          | µg/L  | 0.000                 | 2.1J     | 0.75J     | 0.2J       | ND (<0.48) | ND (<0.49) | ND (<0.54) | ND (<4.7) | ND (<0.58) | 0.96       | 0.59       | ND (<0.58) | ND (<0.48) | ND (<0.49) | ND (<0.47) | ND (<5.1) | ND (<0.10) | 0.10        | 0.58        | 0.11        | ND (<0.099) |
| Benzo(b)fluoranthene    | µg/L  | 0.002                 | 1.1J     | 0.57J     | 0.27J      | ND (<0.48) | ND (<0.49) | 0.16J      | ND (<4.7) | ND (<0.58) | 0.85       | 0.62       | ND (<0.58) | 0.72       | ND (<0.49) | ND (<0.47) | ND (<5.1) | 0.11       | 0.16        | 0.81        | 0.15        | ND (<0.099) |
| Benzo(g,h,i)perylene    | µg/L  | NC                    | 1.2J     | 0.38J     | ND (<0.49) | ND (<0.48) | ND (<0.49) | ND (<0.54) | ND (<4.7) | ND (<0.58) | ND (<0.58) | ND (<0.58) | ND (<0.58) | ND (<0.48) | ND (<0.49) | ND (<0.47) | ND (<5.1) | ND (<0.10) | ND (<0.098) | 0.4         | ND (<0.099) | ND (<0.099) |
| Benzo(k)fluoranthene    | µg/L  | 0.002                 | 1.3J     | 0.38J     | ND (<0.49) | ND (<0.48) | ND (<0.49) | ND (<0.54) | ND (<4.7) | ND (<0.58) | 0.72       | ND (<0.58) | ND (<0.58) | ND (<0.48) | ND (<0.49) | ND (<0.47) | ND (<5.1) | ND (<0.10) | 0.13        | 0.69        | 0.11        | ND (<0.099) |
| Chrysene                | µg/L  | 0.002                 | 1.8J     | 0.85J     | 0.23J      | ND (<0.48) | 0.16J      | ND (<0.54) | ND (<4.7) | ND (<0.58) | 1.2        | 0.59       | ND (<0.58) | ND (<0.48) | ND (<0.49) | ND (<0.47) | ND (<5.1) | 0.11       | 0.12        | 0.48        | ND (<0.099) | ND (<0.099) |
| Dibenzo(a,h)anthracene  | µg/L  | NC                    | 0.9J     | ND (<1.9) | ND (<0.49) | ND (<0.48) | ND (<0.49) | ND (<0.54) | ND (<4.7) | ND (<0.58) | ND (<0.58) | ND (<0.58) | ND (<0.58) | ND (<0.48) | ND (<0.49) | ND (<0.47) | ND (<5.1) | ND (<0.10) | ND (<0.098) | ND (<0.098) | ND (<0.099) | ND (<0.099) |
| Fluoranthene            | µg/L  | 50                    | 4.1J     | 2.7       | 1.8        | 1.2 B      | 1.7        | 1.7        | 1.3J      | 2.6        | 3.3        | 1.7        | 1.1        | 0.93       | ND (<0.49) | 0.61       | ND (<5.1) | 1.2        | 0.46        | 1.2         | 0.34        | 0.53        |
| Fluorene                | µg/L  | 50                    | 12J      | 13        | 13         | 8.7        | 14         | 13         | 10        | 17         | 13         | 6.1        | 4.3        | 5.2        | 1.2        | 4.1        | 5.9       | 11.8       | 1.9         | 4.1         | 2.4         | 5.3         |
| Indeno(1,2,3-cd)pyrene  | µg/L  | 0.002                 | 0.9J     | ND (<1.9) | ND (<0.49) | ND (<0.48) | ND (<0.49) | ND (<0.54) | ND (<4.7) | ND (<0.58) | ND (<0.58) | ND (<0.58) | ND (<0.58) | ND (<0.48) | ND (<0.49) | ND (<0.47) | ND (<5.1) | ND (<0.10) | ND (<0.098) | 0.31        | ND (<0.099) | ND (<0.099) |
| Naphthalene             | µg/L  | 10                    | 110J     | 89        | 560 D      | 450 D      | 570 D      | 140 D      | 51        | 27         | 94         | 13         | 29         | 210        | 1.5        | 48 E       | 110       | 363        | 34.1        | 69.3        | 16.8        | 138         |
| Phenanthrene            | µg/L  | 50                    | 8.3J     | 11        | 8          | 6.7 B      | 13         | 11         | 8.8       | 12         | 10         | 5.1        | 3.4        | 3.7        | ND (<0.49) | 2.8        | ND (<5.1) | 8.5        | 1.2         | 2.5         | 0.99        | 1.9         |
| Pyrene                  | µg/L  | 50                    | 5.9J     | 2.9       | 2.2        | 1.2 B      | 1.6        | 1.8        | 1.5J      | 2.9        | 3.7        | 2          | 1.5        | 1.1        | ND (<0.49) | 0.69       | ND (<5.1) | 1.4        | 0.58        | 1.6         | 0.45        | 0.59        |
| <b>Cyanide and Lead</b> |       |                       |          |           |            |            |            |            |           |            |            |            |            |            |            |            |           |            |             |             |             |             |
| Lead                    | µg/L  | 25                    | 8.2      | ND (<5.0) | ND (<5.0)  | 7.8        | 5.1        | ND (<5.0)  | ND (<5.0) | ND (<5.0)  | 10         | ND (<5.0)  | ND (<5.0)  | 0.010      | 0.010      | 0.010      | ND (<10)  | ND (<5.0)  | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   |
| Cyanide                 | mg/L  | 0.2                   | 0.843    | 0.816     | R          | 0.61J      | 0.427      | R          | 0.91      | 1.2        | 0.5        | 0.5        | 0.48       | 0.58       | 0.29       | 1          | 1.1       | 1.1        | 0.42        | 1.3         | 0.56        | 0.27        |

AWQS = Ambient Water Quality Standards  
B = Present in Associated Blank Sample  
BTEX = Benzene, Ethylbenzene, Toluene and Xylene  
D = Diluted Sample  
E = Result exceeded calibration range  
F1 = MS and/or MSD Recovery outside acceptance limits.  
F2 = MS/MSD RPD above control limits.  
J = Estimated Concentration Value  
mg/L = Milligrams per Liter  
NC = No Criteria  
ND (#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
NYSDEC = New York State Department of Environmental Conservation  
PAHs = Polycyclic Aromatic Hydrocarbons  
R = Rejected  
µg/L = Micrograms per Liter  
**Bolded** = values indicated exceedance of the NYSDEC AWQS



**Table 3**  
**Groundwater Analytical Data**  
**MW-15**

| 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   | 10/15/14   | 04/16/15  | 10/13/15   | 04/06/16  | 10/25/16   | 04/26/17   | 10/11/17   | 04/26/18   | 10/16/18   |
|------------------------------------|-------|----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|------------|-----------|------------|------------|------------|------------|------------|
| <b>MNA/WQ Parameters</b>           |       |          |           |            |            |            |            |            |            |            |            |            |            |           |            |           |            |            |            |            |            |
| Alkalinity (as CaCO <sub>3</sub> ) | mg/L  | 558      | 550       | R          | R          | 502J       | 547J       | R          | 629        | 527        | 585        | 482        | 557        | 480       | 600        | 601       | 676        | 562        | 610        | 616        | 600        |
| Chloride                           | mg/L  | 44.3     | 46.4      | 22.8       | 43.3 B     | 28.5J      | R          | 68.2       | 70.6       | 39.4       | 42         | 44.5       | 44.2       | 14.2      | 49.3       | 55.7      | 65.4       | 25.7       | 58.0       | 15.2       | 15.2       |
| Ethane                             | µg/L  | ND (<10) | ND (<10)  | 2.9        | ND (<300)  | ND (<300)  | ND (<300)  | ND (<300)  | ND (<380)  | ND (<380)  | ND (<380)  | ND (<380)  | ND (<380)  | ND (<380) | ND (<380)  | ND (<75)  | 6.2        | 3.2        | 5.1        | 2.8        | 2.1        |
| Ethene                             | µg/L  | ND (<10) | ND (<10)  | ND (<1.5)  | ND (<300)  | ND (<300)  | ND (<300)  | ND (<300)  | ND (<350)  | ND (<350)  | ND (<350)  | ND (<350)  | ND (<350)  | ND (<350) | ND (<350)  | ND (<75)  | 0.038J     | 0.037J     | ND (<0.10) | ND (<0.10) | 0.042J     |
| Ferrous Iron                       | mg/L  | 0.15     | 1.36      | R          | 0.51J      | 0.47J      | 0.13J      | R          | ND (<0.1)  | 0.15       | 0.18       | ND (<0.1)  | ND (<0.1)  | ND (<0.1) | 0.15 HF    | ND (<0.1) | 8.2        | 3.0        | 5.8        | 3.8        | 9.2        |
| Manganese                          | mg/L  | NA       | 0.74      | 0.89       | 0.67       | 0.79       | 0.77       | 0.61       | 0.61       | 1          | 1.1        | 0.68       | 1          | 0.68      | 0.7        | ND (<75)  | 0.609      | 0.0639     | 0.735      | 0.484      | 1.56       |
| Methane                            | µg/L  | 820      | 3400      | 680        | 360        | 720        | 1,900      | 1,600      | 1,900      | 780        | 580        | 1,100      | 2,400      | 16        | 1,600      | 720       | 3,400      | 1,900      | 2,900      | 640        | 3100       |
| Nitrate                            | mg/L  | NA       | ND (<1.0) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | ND (<0.05) | 0.28      | ND (<0.05) | ND (<0.5) | ND (<0.10) | ND (<0.10) | ND (<0.10) | ND (<0.10) | ND (<0.10) |
| 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        | 0.81      | 3.9        | 3.4       | 4.7        | 2.0        | 4.4        | 3.1        | 1.9        |
| Sulfate                            | mg/L  | NA       | 182       | 137 B      | 193 B      | R          | R          | 202 B      | 217        | 113        | 139        | 122        | 91.1       | 28.7      | 78.5       | 116       | 67.9       | 17.7       | 60.6       | 39.0       | 28.4       |
| Sulfide                            | mg/L  | NA       | 1.4       | ND (<1.0)  | ND (<1.0)  | 2.4        | ND (<1.0)  | R          | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0) | ND (<1.0)  | ND (<1.0) | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  |

B = Present in Associated Blank Sample  
D = Diluted Sample  
J = Estimated Concentration  
mg/L = Milligrams per Liter  
MNA = Monitored Natural Attenuation  
NA = Not Analyzed  
ND (<#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
R = Rejected  
µg/L = Micrograms per Liter  
WQ = Water Quality





Table 3  
Groundwater Analytical Data  
MW-16

| CONSTITUENT            | UNITS | NYSDEC<br>AWQS 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   | 10/20/14   | 04/16/15   | 10/13/15   | 04/06/16   | 10/25/16   | 04/26/17    | 10/11/17    | 04/26/18    | 10/16/18    |             |
|------------------------|-------|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|
| BTEx Compounds         |       |                       |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |             |             |             |             |             |
| Benzene                | µg/L  | 1                     | 140        | 170        | 150 D      | 100 D      | 17         | 140 D      | 150 D      | 180        | 200        | 150        | 8.7        | 59         | 91         | 40         | 76         | 149        | 5.9         | 143         | 80.6        | 127         |             |
| Ethylbenzene           | µg/L  | 5                     | 70         | 110        | 92         | 51         | 5          | 78         | 66         | 100        | 150        | 92         | 6.2        | 41         | 68         | 26         | 35         | 134        | 3.1         | 124         | 60.8        | 101         |             |
| m,p-Xylene             | µg/L  | 5                     | 31         | 55         | 47         | 27         | 2.8        | 29         | 26         | 14         | 51         | 23         | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  | 4.9        | 5          | 4.9        | ND (<2.0)   | 9.3         | 6.8         | 8.7         |             |
| o-Xylene               | µg/L  | 5                     | 34         | 54         | 41         | 27         | 3.6        | 36         | 37         | 14         | 56         | 35         | ND (<1.0)  | 17         | 24         | 11         | 20         | 32.1       | 1.6         | 38.0        | 21.3        | 32.8        |             |
| Toluene                | µg/L  | 5                     | 17         | 36         | 33         | 15         | 2          | 21         | 11         | ND (<1.0)  | 14         | 9          | ND (<1.0)  | 17         | ND (<1.0)  | 1.4        | ND (<2.0)  | 2.9        | ND (<1.0)   | 3.8         | 2.1         | 3.8         |             |
| PAHs                   |       |                       |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |             |             |             |             |             |
| Acenaphthene           | µg/L  | 20                    | 14 D       | 18         | 21         | 7          | 2.3        | 13         | 15         | 30         | 30         | 16         | ND (<1.0)  | 40         | 27         | 14         | 31         | 54.7       | 3.0         | 39.5        | 39.1        | 57.8        |             |
| Acenaphthylene         | µg/L  | NC                    | 16J        | 27 D       | 36         | 11         | 4.7        | 10         | 2.2        | 34         | 49         | ND (<0.48) | ND (<0.48) | 31         | 25         | 16         | 27         | 47.3       | 1.9         | 26.2        | 24.4        | 30.6        |             |
| Anthracene             | µg/L  | 50                    | 1.7        | 3          | 2.3        | 0.97 B     | 0.20J      | 1.4        | 1.2        | 1.6        | 2.8        | ND (<0.48) | ND (<0.48) | 2.8        | 1.8        | 1.2        | ND (<2.5)  | 1.4        | 0.37        | 2.2         | 1.7         | 2.6         |             |
| Benzo(a)anthracene     | µg/L  | 0.002                 | ND (<0.19) | 0.14       | ND (<0.47) | 2.1 B      | ND (<0.50) | ND (<0.47) | ND (<0.49) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50) | ND (<0.50) | ND (<2.5)  | 0.10        | 0.11        | 0.11        | 0.13        | 0.12        |
| Benzo(a)pyrene         | µg/L  | 0.000                 | ND (<0.19) | ND (<0.57) | ND (<0.47) | 2.3 B      | ND (<0.50) | ND (<0.47) | ND (<0.49) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50) | ND (<0.50) | ND (<2.5)  | ND (<0.10)  | 0.11        | ND (<0.098) | ND (<0.099) | ND (<0.099) |
| Benzo(b)fluoranthene   | µg/L  | 0.002                 | ND (<0.19) | ND (<0.57) | 0.11J      | 2.8 B      | ND (<0.50) | ND (<0.47) | ND (<0.49) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50) | ND (<0.50) | ND (<2.5)  | ND (<0.10)  | 0.17        | ND (<0.098) | ND (<0.099) | ND (<0.099) |
| Benzo(k)fluoranthene   | µg/L  | NC                    | ND (<0.19) | ND (<0.57) | ND (<0.47) | 1.8 B      | ND (<0.50) | ND (<0.47) | ND (<0.49) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50) | ND (<0.50) | ND (<2.5)  | ND (<0.10)  | 0.15        | ND (<0.098) | ND (<0.099) | ND (<0.099) |
| Chrysene               | µg/L  | 0.002                 | ND (<0.19) | 1.1J       | ND (<0.47) | 2.7 B      | ND (<0.50) | ND (<0.47) | ND (<0.49) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50) | ND (<0.50) | ND (<2.5)  | ND (<0.10)  | 0.098       | ND (<0.098) | ND (<0.099) | ND (<0.099) |
| Dibenz(a,h)anthracene  | µg/L  | NC                    | ND (<0.19) | ND (<0.57) | ND (<0.47) | 1.4        | ND (<0.50) | ND (<0.47) | ND (<0.49) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50) | ND (<0.50) | ND (<2.5)  | ND (<0.10)  | ND (<0.097) | ND (<0.098) | ND (<0.099) | ND (<0.099) |
| Fluoranthene           | µg/L  | 50                    | 1.2        | 1.4        | 1.7        | 1.5 B      | 0.21J      | 1.1        | 0.94       | 1.5        | 2          | ND (<0.48) | ND (<0.48) | 2.7        | 1.6        | 1.1        | ND (<2.5)  | 1.8        | 0.41        | 2.5         | 1.9         | 2.4         |             |
| Fluorene               | µg/L  | 50                    | 10 D       | 11         | 16         | 4.7        | 1.3        | 8.8        | 13         | 17         | 21         | 9.1        | ND (<0.48) | 22         | 14         | 7.1        | 15         | 22.2       | 1.1         | 17.2        | 17.2        | 19.5        |             |
| Indeno(1,2,3-cd)pyrene | µg/L  | 0.002                 | ND (<0.19) | ND (<0.57) | ND (<0.47) | 1.7 B      | ND (<0.50) | ND (<0.47) | ND (<0.49) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.48) | ND (<0.50) | ND (<0.50) | ND (<2.5)  | ND (<0.10) | ND (<0.097) | ND (<0.098) | ND (<0.099) | ND (<0.099) |             |
| Naphthalene            | µg/L  | 10                    | ND (<0.19) | 110 D      | 220 D      | ND (<0.47) | 26         | ND (<0.47) | ND (<0.49) | 2.4        | 230E       | ND (<0.48) | ND (<0.48) | 1.7        | 4.6        | 5.1        | 7.4        | 4.6        | 0.16        | 5.8         | 30.9        | 9.8         |             |
| Phenanthrene           | µg/L  | 50                    | 5.6        | 9.6        | 13         | 4.8 B      | 1.1        | 6.7        | 6.3        | 11         | 15         | ND (<0.48) | ND (<0.48) | 18         | 11         | 6.7        | 10         | 15.9       | 0.99        | 15.7        | 14.1        | 16.5        |             |
| Pyrene                 | µg/L  | 50                    | 1.4J       | 1.3        | 1.9        | 2.1 B      | ND (<0.50) | 1.1        | 0.87       | 1.3        | 2          | ND (<0.48) | ND (<0.48) | 3          | 1.8        | 1.2        | ND (<2.5)  | 2.0        | 0.50        | 2.7         | 2.1         | 2.5         |             |
| Cyanide and Lead       |       |                       |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |             |             |             |             |             |
| Cyanide                | µg/L  | 25                    | ND (<5.0)  | ND (<5.0)  | ND (<5.0)  | ND (<3.0)  | ND (<3.0)  | ND (<5.0)  | ND (<5.0)  | ND (<5.0)  | ND (<5.0)  | ND (<5.0)  | ND (<5.0)  | ND (<0.01) | ND (<0.01) | ND (<0.01) | ND (<1.0)  | ND (<5.0)  | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   | ND (<5.0)   |             |
| Lead                   | mg/L  | 0.2                   | 0.353      | 0.342      | R          | 0.25J      | 0.137      | R          | 0.34       | 0.41       | 0.11       | 0.11       | 0.023      | 0.25       | 0.24       | 0.24       | 0.25       | 0.26       | 0.21        | 0.26        | 0.23        | 0.26        |             |

AWQS = Ambient Water Quality Standards  
B = Present in Associated Blank Sample  
BTEx = Benzene, Ethylbenzene, Toluene and Xylene  
D = Diluted Sample  
E = Result exceeded calibration range  
F1 = MS and/or MSD Recovery outside acceptance limits.  
F2 = MS/MSD RPD above control limits.  
J = Estimated Concentration Value  
mg/L = Milligrams per Liter  
NC = No Criteria  
ND (<#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
NYSDEC = New York State Department of Environmental Conservation  
PAHs = Polycyclic Aromatic Hydrocarbons  
R = Rejected  
µg/L = Micrograms per Liter  
**Bolded** = values indicated exceedance of the NYSDEC AWQS



**Table 3**  
**Groundwater Analytical Data**  
**MW-16**

| 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  | 10/15/14   | 04/16/15   | 10/13/15  | 04/06/16  | 10/25/16   | 04/26/17  | 10/11/17   | 04/26/18   | 10/16/18   |
|------------------------------------|-------|-----------|-----------|------------|------------|-----------|-----------|------------|------------|-----------|------------|-----------|------------|------------|-----------|-----------|------------|-----------|------------|------------|------------|
| <b>MNA/WQ Parameters</b>           |       |           |           |            |            |           |           |            |            |           |            |           |            |            |           |           |            |           |            |            |            |
| Alkalinity (as CaCO <sub>3</sub> ) | mg/L  | 442       | 410       | R          | R          | 586J      | 600J      | R          | 436        | 530       | 585        | 454       | 595        | 532        | 638       | 615       | 636        | 706       | 630        | 724        | 740        |
| Chloride                           | mg/L  | 7.2       | 6.7       | 9.4        | 6.1 B      | 3.4J      | R         | 12.7       | 12.8       | 5.5       | 5.4        | 5         | 6.5        | 5.8        | 4.9       | 5.7       | 6.8        | 3.4       | 6.5        | 5.6        | 4.8        |
| Ethane                             | µg/L  | ND (<2.5) | ND (<2.5) | ND (<30)   | ND (<30)   | ND (<1.5) | ND (<1.5) | 0.57J      | ND (<750)  | ND (<750) | ND (<750)  | ND (<750) | ND (<750)  | ND (<75)   | ND (<75)  | ND (<75)  | 1.2        | 0.15J     | 0.84J      | 0.82J      | 0.99J      |
| Ethene                             | µg/L  | ND (<2.5) | ND (<2.5) | ND (<30)   | ND (<30)   | ND (<1.5) | ND (<1.5) | 2.6        | ND (<700)  | ND (<700) | ND (<700)  | ND (<700) | ND (<700)  | ND (<70)   | ND (<70)  | ND (<75)  | 0.24J      | 0.036J    | 0.16J      | 0.13J      | 0.17J      |
| Ferrous Iron                       | mg/L  | ND (<0.1) | 0.44      | R          | 0.33J      | R         | 0.08      | ND (<0.1)  | 0.12       | ND (<0.1) | 0.13       | ND (<0.1) | ND (<0.1)  | ND (<0.1)  | ND (<0.1) | ND (<0.1) | 2.4        | 1.2       | 3.0        | 3.5        | 3.1        |
| 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       | 0.42       | 0.33      | ND (<75)  | 0.601      | 0.522     | 0.599      | 0.551      | 0.592      |
| Methane                            | µg/L  | 210J      | 580 D     | 270        | 170        | 37        | 400 B     | 140        | 550        | 170       | 150        | 75        | 410        | 160        | 1100      | 110       | 900        | 180       | 780        | 820        | 830        |
| Nitrate                            | mg/L  | NA        | ND (<1.0) | ND (<0.05) | ND (<0.05) | 0.65      | 0.17      | ND (<0.05) | ND (<0.05) | 0.1       | ND (<0.05) | 0.53      | ND (<0.05) | ND (<0.05) | 0.37      | 0.074     | ND (<0.10) | 0.33      | ND (<0.10) | ND (<0.10) | ND (<0.10) |
| 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        | 2.1        | 1.9       | 2.6       | 5.4        | 2.4       | 3.2        | 2.3        | 3.2        |
| Sulfate                            | mg/L  | NA        | 316       | 312 B      | 243 B      | R         | R         | 351 B      | 487        | 140       | 86         | ND (<1.0) | 107        | 38.2       | 22.8      | 13.3      | 145        | 37.8      | 77.7       | 111        | 75.8       |
| Sulfide                            | mg/L  | NA        | 2.7J      | ND (<1.0)  | ND (<1.0)  | 0.8J      | ND (<1.0) | R          | ND (<1.0)  | ND (<1.0) | ND (<1.0)  | ND (<1.0) | ND (<1.0)  | ND (<1.0)  | ND (<1.0) | ND (<1.0) | ND (<1.0)  | ND (<1.0) | ND (<1.0)  | ND (<1.0)  | ND (<1.0)  |

B = Present in Associated Blank Sample  
D = Diluted Sample  
J = Estimated Concentration  
mg/L = Milligrams per Liter  
MNA = Monitored Natural Attenuation  
NA = Not Analyzed  
ND (<#) = Not detected above laboratory reporting limit (indicated by #)  
NS = Not Sampled  
R = Rejected  
µg/L = Micrograms per Liter  
WQ = Water Quality



## Appendix A – Field Data

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# Site Management Plan Inspection Form

109 North Market Street  
Johnstown, New York

Date: 7/17/2018  
Technician: TB

Time: 12:30  
Weather: Rain 74

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

| <b>Sheet Pile Wall</b>  |     |    |           |
|---|-----|----|-----------|
| Has any construction occurred that may have impacted the sheet pile wall? | YES | NO | COMMENTS: |

| <b>Site Wide</b>   |     |    |           |
|--|-----|----|-----------|
| 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: |

| <b>Miscellaneous</b>    |      |       |             |           |
|-------------------------|------|-------|-------------|-----------|
| Evidence of Trespassing | YES  | NO    |             | COMMENTS: |
| Litter                  | NONE | MINOR | SIGNIFICANT | COMMENTS: |

**General Comments:**

# Site Management Plan Inspection Form

109 North Market Street  
Johnstown, New York

Date: 10/16/2018  
Technician: KL

Time: 11:43  
Weather: PC 42

| Vegetation Cap                      |      |       |             |           |
|-------------------------------------|------|-------|-------------|-----------|
| Condition of Grass                  | GOOD | FAIR  | POOR        | COMMENTS: |
| Condition of Site Trees             | GOOD | FAIR  | POOR        | 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 | October   |
| 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: |
| Litter                  | NONE | MINOR | SIGNIFICANT | COMMENTS: |

**General Comments:**

National Grid  
109 North Market Street, Johnstown New York

Sampling Personnel: PP  
Job Number: 0603040-120950-221  
Well Id. **MW-4**

Date: 10/10  
Weather: 50- Clear  
Time In: 0935 Time Out: 1030  
1625

| Well Information         |                     |       |
|--------------------------|---------------------|-------|
|                          | TOC                 | Other |
| Depth to Water:          | (feet) <u>29.20</u> |       |
| Depth to Bottom:         | (feet) <u>27.32</u> |       |
| Depth to Product:        | (feet) <u>NP</u>    |       |
| Length of Water Column:  | (feet) <u>4.12</u>  |       |
| Volume of Water in Well: | (gal) <u>0.65</u>   |       |
| Three Well Volumes:      | (gal) <u>1.97</u>   |       |

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

| Purging Information   |  |  |       |       |       |       |       |                  |      |      |      |      |                                     |  |  |  |  |
|---|--|--|-------|-------|-------|-------|-------|------------------|------|------|------|------|-------------------------------------|--|--|--|--|
| Purging Method:   | Bailer <input type="checkbox"/> Peristaltic <input type="checkbox"/> Well Wizard Dedicated Pump <input checked="" type="checkbox"/>                    | <table border="1"><caption>Conversion Factors</caption><thead><tr><th></th><th>1" ID</th><th>2" ID</th><th>4" ID</th><th>6" ID</th></tr></thead><tbody><tr><td>gal/ft. of water</td><td>0.04</td><td>0.16</td><td>0.66</td><td>1.47</td></tr><tr><td colspan="5">1 gallon=3.785L=3785mL=1337cu. feet</td></tr></tbody></table> |       | 1" ID | 2" ID | 4" ID | 6" ID | gal/ft. of water | 0.04 | 0.16 | 0.66 | 1.47 | 1 gallon=3.785L=3785mL=1337cu. feet |  |  |  |  |
|   | 1" ID  |  | 2" ID | 4" ID | 6" ID |       |       |                  |      |      |      |      |                                     |  |  |  |  |
| gal/ft. of water  | 0.04   |  | 0.16  | 0.66  | 1.47  |       |       |                  |      |      |      |      |                                     |  |  |  |  |
| 1 gallon=3.785L=3785mL=1337cu. feet   |  |  |       |       |       |       |       |                  |      |      |      |      |                                     |  |  |  |  |
| Tubing/Bailer Material:   | Teflon <input type="checkbox"/> Stainless St. <input type="checkbox"/> Polyethylene <input checked="" type="checkbox"/> other <input type="checkbox"/> |  |       |       |       |       |       |                  |      |      |      |      |                                     |  |  |  |  |
| Sampling Method:  | Bailer <input type="checkbox"/> Peristaltic <input type="checkbox"/> Well Wizard Dedicated Pump <input checked="" type="checkbox"/>                    |  |       |       |       |       |       |                  |      |      |      |      |                                     |  |  |  |  |
| Average Pumping Rate:   | (ml/min) <u>780</u>  | Did well go dry? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |       |       |       |       |       |                  |      |      |      |      |                                     |  |  |  |  |
| Duration of Pumping:  | (min) <u>30</u>  |  |       |       |       |       |       |                  |      |      |      |      |                                     |  |  |  |  |
| Total Volume Removed:   | (gal) <u>2.09</u>  |  |       |       |       |       |       |                  |      |      |      |      |                                     |  |  |  |  |
| Horiba U-52 Water Quality Meter Used? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |  |  |       |       |       |       |       |                  |      |      |      |      |                                     |  |  |  |  |

| Time | DTW (feet) | Temp (°C) | pH (S.U.) | ORP (mV) | Conductivity (mS/cm) | Turbidity (NTU) | DO (mg/L) | TDS (g/L) |
|------|------------|-----------|-----------|----------|----------------------|-----------------|-----------|-----------|
| 0943 | 23.35      | 11.44     | 7.12      | 150      | 1.59                 | 63.7            | 7.66      | 1.02      |
| 0948 | 23.60      | 11.44     | 6.98      | 151      | 1.77                 | 68              | 4.80      | 1.13      |
| 0953 | 23.55      | 11.51     | 6.98      | 149      | 1.77                 | 67              | 4.74      | 1.14      |
| 0958 | 23.50      | 11.67     | 6.99      | 148      | 1.78                 | 60              | 4.64      | 1.14      |
| 1005 | 23.55      | 11.81     | 7.00      | 150      | 1.78                 | 30              | 4.64      | 1.14      |
| 1008 | 23.50      | 11.80     | 7.00      | 152      | 1.78                 | 20              | 4.75      | 1.14      |
| 1013 | 23.50      | 11.81     | 7.00      | 158      | 1.78                 | 18.8            | 4.80      | 1.14      |
|      |            |           |           |          |                      |                 |           |           |
|      |            |           |           |          |                      |                 |           |           |
|      |            |           |           |          |                      |                 |           |           |

| Sampling Information: |        |          |                       |                               |                        |  |
|-----------------------|--------|----------|-----------------------|-------------------------------|------------------------|--|
| Quantity              | Size   | Material | Preservative          | Compounds analyzed            | Method                 |  |
| 2                     | 1 L    | Glass    | Unpreserved           | SVOC PAH's                    | EPA SW-846 Method 8270 |  |
| 1                     | 250 mL | Plastic  | Unpreserved           | Ferrous Iron                  | SM 3500 FE D           |  |
|                       |        |          |                       | Chloride                      | SM 4500 CI E           |  |
|                       |        |          |                       | Total Alkalinity              | EPA Method 310.2       |  |
| 1                     | 250 mL | Plastic  | H2SO4                 | Nitrogen                      | EPA Method 351.2       |  |
| 1                     | 250 mL | Plastic  | HNO3                  | Lead & Manganese              | EPA Method 6010        |  |
| 3                     | 40 mL  | Glass    | HCl                   | VOC's & BTEX                  | EPA SW-846 Method 8260 |  |
| 1                     | 250 mL | Plastic  | NaOH                  | Total Cyanide                 | EPA Method 9012B       |  |
| 1                     | 250 mL | Plastic  | NaOH & Zinc Acetate   | Nitrate & Nitrite             | EPA Method 353.2       |  |
|                       |        |          |                       | Sulfide                       | EPA Method 376.1       |  |
|                       |        |          |                       | Sulfate                       | EPA Method 375.4       |  |
| 2                     | 40 mL  | Glass    | Benzalkonium Chloride | Methane/Ethane/<br>Ethene/CO2 | RSK-175                |  |

Sample ID: MW-4-1018 Duplicate? Yes ☐ No ☒  
Sample Time: 1013 MS/MSD? Yes ☐ No ☒  
Shipped: Drop-off Albany Service Center ☒  
Pace Courier ☒  
Laboratory: Pace Analytical  
Greensburg, Pennsylvania

National Grid  
109 North Market Street, Johnstown New York

Sampling Personnel: PD  
Job Number: 0603040-120950-221  
Well Id. **MW-7**

Date: 10/16  
Weather: 42° - clear  
Time In: 1118 Time Out: 1200

| Well Information         |        |              | TOC | Other |
|--------------------------|--------|--------------|-----|-------|
| Depth to Water:          | (feet) | <u>14.40</u> |     |       |
| Depth to Bottom:         | (feet) | <u>22.10</u> |     |       |
| Depth to Product:        | (feet) | <u>NP</u>    |     |       |
| Length of Water Column:  | (feet) | <u>7.7</u>   |     |       |
| Volume of Water in Well: | (gal)  | <u>1.0</u>   |     |       |
| Three Well Volumes:      | (gal)  | <u>3.0</u>   |     |       |

Well Type: ☐ Flushmount ☒ Stick-Up

Well Locked: Yes ☒ No ☐

Measuring Point Marked: Yes ☒ No ☐

Well Material: PVC ☒ SS ☐ Other: ☐

Well Diameter: 1" ☐ 2" ☒ Other: ☐

Comments:

| Purging Information   |                                 |  |  | Conversion Factors                   |       |       |       |       |
|---|---------------------------------|--|--|--------------------------------------|-------|-------|-------|-------|
| Purging Method:   | Bailer <input type="checkbox"/> | Peristaltic <input type="checkbox"/>   | Well Wizard Dedicated Pump <input checked="" type="checkbox"/>                       | gal/ft. of                           | 1" ID | 2" ID | 4" ID | 6" ID |
| Tubing/Bailer Material:   | Teflon <input type="checkbox"/> | Stainless St. <input type="checkbox"/> | Polyethylene <input checked="" type="checkbox"/> other <input type="checkbox"/>      | water                                | 0.04  | 0.16  | 0.66  | 1.47  |
| Sampling Method:  | Bailer <input type="checkbox"/> | Peristaltic <input type="checkbox"/>   | Well Wizard Dedicated Pump <input checked="" type="checkbox"/>                       | 1 gallon=3.785L=3785mL=133.7cu. feet |       |       |       |       |
| Average Pumping Rate:   | (ml/min)                        | <u>240</u>                             |  |                                      |       |       |       |       |
| Duration of Pumping:  | (min)                           | <u>30</u>                              |  |                                      |       |       |       |       |
| Total Volume Removed:   | (gal)                           | <u>30</u>                              | Did well go dry? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |                                      |       |       |       |       |
| Horiba U-52 Water Quality Meter Used? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |                                 |  |  |                                      |       |       |       |       |

| Time        | DTW (feet)   | Temp (°C)    | pH (S.U.)   | ORP (mV)    | Conductivity (mS/cm) | Turbidity (NTU) | DO (mg/L)   | TDS (g/L)    |
|-------------|--------------|--------------|-------------|-------------|----------------------|-----------------|-------------|--------------|
| <u>1120</u> | <u>14.85</u> | <u>13.81</u> | <u>7.05</u> | <u>-32</u>  | <u>1.90</u>          | <u>48</u>       | <u>9.18</u> | <u>1.20</u>  |
| <u>1125</u> | <u>15.65</u> | <u>13.31</u> | <u>7.10</u> | <u>-103</u> | <u>1.41</u>          | <u>64</u>       | <u>7.97</u> | <u>0.901</u> |
| <u>1130</u> | <u>15.89</u> | <u>13.28</u> | <u>7.09</u> | <u>-104</u> | <u>1.42</u>          | <u>50</u>       | <u>7.20</u> | <u>0.918</u> |
| <u>1135</u> | <u>16.05</u> | <u>13.25</u> | <u>7.09</u> | <u>-105</u> | <u>1.44</u>          | <u>30</u>       | <u>6.80</u> | <u>0.920</u> |
| <u>1140</u> | <u>16.50</u> | <u>13.25</u> | <u>7.09</u> | <u>-105</u> | <u>1.45</u>          | <u>20</u>       | <u>6.07</u> | <u>0.924</u> |
| <u>1145</u> | <u>16.75</u> | <u>13.21</u> | <u>7.11</u> | <u>-111</u> | <u>1.47</u>          | <u>13</u>       | <u>5.46</u> | <u>0.938</u> |
| <u>1150</u> | <u>17.00</u> | <u>13.18</u> | <u>7.10</u> | <u>-115</u> | <u>1.48</u>          | <u>5</u>        | <u>5.38</u> | <u>0.940</u> |
|             |              |              |             |             |                      |                 |             |              |
|             |              |              |             |             |                      |                 |             |              |
|             |              |              |             |             |                      |                 |             |              |

| Sampling Information: |        |          |                       |                               |                        |
|-----------------------|--------|----------|-----------------------|-------------------------------|------------------------|
| Quantity              | Size   | Material | Preservative          | Compounds analyzed            | Method                 |
| 2                     | 1 L    | Glass    | Unpreserved           | SVOC PAH's                    | EPA SW-846 Method 8270 |
| 1                     | 250 mL | Plastic  | Unpreserved           | Ferrous Iron                  | SM 3500 FE D           |
|                       |        |          |                       | Chloride                      | SM 4500 Cl E           |
|                       |        |          |                       | Total Alkalinity              | EPA Method 310.2       |
| 1                     | 250 mL | Plastic  | H2SO4                 | Nitrogen                      | EPA Method 351.2       |
| 1                     | 250 mL | Plastic  | HNO3                  | Lead & Manganese              | EPA Method 6010        |
| 3                     | 40 mL  | Glass    | HCl                   | VOC's & BTEX                  | EPA SW-846 Method 8260 |
| 1                     | 250 mL | Plastic  | NaOH                  | Total Cyanide                 | EPA Method 9012B       |
| 1                     | 250 mL | Plastic  | NaOH & Zinc Acetate   | Nitrate & Nitrite             | EPA Method 353.2       |
|                       |        |          |                       | Sulfide                       | EPA Method 376.1       |
|                       |        |          |                       | Sulfate                       | EPA Method 375.4       |
| 2                     | 40 mL  | Glass    | Benzalkonium Chloride | Methane/Ethane/<br>Ethene/CO2 | RSK-175                |

Sample ID: **MW-7-1018** Duplicate? Yes ☐ No ☒

Sample Time: 1150 MS/MSD? Yes ☐ No ☒

Shipped: Drop-off Albany Service Center ☐ Pace Courier ☒

Laboratory: Pace Analytical  
Greensburg, Pennsylvania

Sampling Personnel: PD  
Job Number: 0603040-120950-221  
Well Id: **MW-10**

Date: 10/16  
Weather: 40 - Clear  
Time In: 1028 Time Out: \_\_\_\_\_

| Well Information         |        |              | TOC | Other |
|--------------------------|--------|--------------|-----|-------|
| Depth to Water:          | (feet) | <u>14.60</u> |     |       |
| Depth to Bottom:         | (feet) | <u>22.05</u> |     |       |
| Depth to Product:        | (feet) | <u>NP</u>    |     |       |
| Length of Water Column:  | (feet) | <u>7.45</u>  |     |       |
| Volume of Water in Well: | (gal)  | <u>119</u>   |     |       |
| Three Well Volumes:      | (gal)  | <u>3.6</u>   |     |       |

|  |   |
|--|---|
| Well Type: _____<br>Well Locked: _____<br>Measuring Point Marked: _____<br>Well Material: _____<br>Well Diameter: _____<br>Comments: _____ | Flushmount: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Stick-Up: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>PVC: <input checked="" type="checkbox"/> 1" <input type="checkbox"/> 2" <input type="checkbox"/> Other: _____<br>SS: <input type="checkbox"/> 1" <input checked="" type="checkbox"/> 2" <input type="checkbox"/> Other: _____ |
|--|---|

| Purging Information  |                                 |  |   |
|--|---------------------------------|--|---|
| Purging Method:  | Bailer <input type="checkbox"/> | Peristaltic <input type="checkbox"/>   | Well Wizard Dedicated Pump <input checked="" type="checkbox"/>                  |
| Tubing/Bailer Material:  | Teflon <input type="checkbox"/> | Stainless St. <input type="checkbox"/> | Polyethylene <input checked="" type="checkbox"/> other <input type="checkbox"/> |
| Sampling Method:   | Bailer <input type="checkbox"/> | Peristaltic <input type="checkbox"/>   | Well Wizard Dedicated Pump <input checked="" type="checkbox"/>                  |
| Average Pumping Rate:  | (ml/min)                        | <u>~200</u>                            |   |
| Duration of Pumping:   | (min)                           | <u>30</u>                              |   |
| Total Volume Removed:  | (gal)                           | <u>~2.5</u>                            |   |
| Did well go dry? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>                      |                                 |  | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>             |
| Horiba U-52 Water Quality Meter Used? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> |                                 |  |   |

| Conversion Factors                   |       |       |       |       |
|--------------------------------------|-------|-------|-------|-------|
|                                      | 1" ID | 2" ID | 4" ID | 6" ID |
| gal/ft. of water                     | 0.04  | 0.16  | 0.66  | 1.47  |
| 1 gallon=3.785L=3785mL=133.7cu. feet |       |       |       |       |

| Time | DTW (feet) | Temp (°C) | pH (S.U.) | ORP (mV) | Conductivity (mS/cm) | Turbidity (NTU) | DO (mg/L) | TDS (g/L) |
|------|------------|-----------|-----------|----------|----------------------|-----------------|-----------|-----------|
| 1030 | 15.00      | 13.41     | 7.00      | -102     | 3.15                 | 21.9            | 3.00      | 2.03      |
| 1035 | 15.20      | 13.70     | 6.99      | -112     | 3.30                 | 36              | 1.31      | 2.11      |
| 1040 | 15.35      | 14.00     | 6.99      | -140     | 3.33                 | 20              | 0.98      | 2.10      |
| 1045 | 16.00      | 14.05     | 6.98      | -125     | 3.51                 | 10.5            | 0.00      | 2.25      |
| 1050 | 16.30      | 14.12     | 7.00      | -140     | 3.55                 | 6.9             | 0.00      | 2.27      |
| 1055 | 16.50      | 14.18     | 7.02      | -142     | 3.56                 | 5.8             | 0.00      | 2.28      |
| 1100 | 16.70      | 14.15     | 7.02      | -144     | 3.54                 | 4.0             | 0.00      | 2.27      |
|      |            |           |           |          |                      |                 |           |           |
|      |            |           |           |          |                      |                 |           |           |
|      |            |           |           |          |                      |                 |           |           |
|      |            |           |           |          |                      |                 |           |           |

| Sampling Information: |        |          |                       |                               |                        |  |
|-----------------------|--------|----------|-----------------------|-------------------------------|------------------------|--|
| Quantity              | Size   | Material | Preservative          | Compounds analyzed            | Method                 |  |
| 2                     | 1 L    | Glass    | Unpreserved           | SVOC PAH's                    | EPA SW-846 Method 8270 |  |
| 1                     | 250 mL | Plastic  | Unpreserved           | Ferrous Iron                  | SM 3500 FE D           |  |
|                       |        |          |                       | Chloride                      | SM 4500 Cl E           |  |
|                       |        |          |                       | Total Alkalinity              | EPA Method 310.2       |  |
| 1                     | 250 mL | Plastic  | H2SO4                 | Nitrogen                      | EPA Method 351.2       |  |
| 1                     | 250 mL | Plastic  | HNO3                  | Lead & Manganese              | EPA Method 6010        |  |
| 3                     | 40 mL  | Glass    | HCl                   | VOC's & BTEX                  | EPA SW-846 Method 8260 |  |
| 1                     | 250 mL | Plastic  | NaOH                  | Total Cyanide                 | EPA Method 9012B       |  |
| 1                     | 250 mL | Plastic  | NaOH & Zinc Acetate   | Nitrate & Nitrite             | EPA Method 353.2       |  |
|                       |        |          |                       | Sulfide                       | EPA Method 376.1       |  |
|                       |        |          |                       | Sulfate                       | EPA Method 375.4       |  |
| 2                     | 40 mL  | Glass    | Benzalkonium Chloride | Methane/Ethane/<br>Ethene/CO2 | RSK-175                |  |

Sample ID: **MW-10-1018** Duplicate? Yes ☐ No ☒  
 Sample Time: 1100 MS/MSD? Yes ☐ No ☒

Shipped: Drop-off Albany Service Center ☐  
 Pace Courier ☒  
 Laboratory: Pace Analytical  
 Greensburg, Pennsylvania





National Grid  
109 North Market Street, Johnstown New York

Sampling Personnel: PD  
Job Number: 0603040-120950-221  
Well Id. **MW-12**

Date: 10/6  
Weather: 45-clear  
Time In: 0830 Time Out: 0930

| Well Information         |        | TOC          | Other |
|--------------------------|--------|--------------|-------|
| Depth to Water:          | (feet) | <u>15.10</u> |       |
| Depth to Bottom:         | (feet) | <u>22.24</u> |       |
| Depth to Product:        | (feet) | <u>NF</u>    |       |
| Length of Water Column:  | (feet) | <u>7.14</u>  |       |
| Volume of Water in Well: | (gal)  | <u>1.14</u>  |       |
| Three Well Volumes:      | (gal)  | <u>3.4</u>   |       |

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

| Purging Information   |  | Conversion Factors                   |       |       |       |      |
|---|--|--------------------------------------|-------|-------|-------|------|
| Purging Method:   | Bailer <input type="checkbox"/> Peristaltic <input type="checkbox"/> Well Wizard Dedicated Pump <input checked="" type="checkbox"/>                    | 1" ID                                | 2" ID | 4" ID | 6" ID |      |
| Tubing/Bailer Material:   | Teflon <input type="checkbox"/> Stainless St. <input type="checkbox"/> Polyethylene <input checked="" type="checkbox"/> other <input type="checkbox"/> | gal/ft. of water                     | 0.04  | 0.16  | 0.66  | 1.47 |
| Sampling Method:  | Bailer <input type="checkbox"/> Peristaltic <input type="checkbox"/> Well Wizard Dedicated Pump <input checked="" type="checkbox"/>                    | 1 gallon=3.785L=3785mL=133.7cu. feet |       |       |       |      |
| Average Pumping Rate:   | (ml/min) <u>~200</u>   |                                      |       |       |       |      |
| Duration of Pumping:  | (min) <u>30</u>  |                                      |       |       |       |      |
| Total Volume Removed:   | (gal) <u>~2.5</u>  |                                      |       |       |       |      |
| Did well go dry? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                      |  |                                      |       |       |       |      |
| Horiba U-52 Water Quality Meter Used? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |  |                                      |       |       |       |      |

| Time | DTW (feet) | Temp (°C) | pH (S.U.) | ORP (mV) | Conductivity (mS/cm) | Turbidity (NTU) | DO (mg/L) | TDS (g/L) |
|------|------------|-----------|-----------|----------|----------------------|-----------------|-----------|-----------|
| 0840 | 15.10      | 11.73     | 6.93      | 35       | 2.52                 | 27              | 6.92      | 1.62      |
| 0845 | 15.15      | 11.51     | 6.83      | 126      | 2.80                 | 22              | 4.42      | 1.79      |
| 0850 | 15.15      | 11.49     | 6.87      | 148      | 2.92                 | 12.5            | 3.63      | 1.87      |
| 0855 | 15.15      | 11.39     | 6.86      | 154      | 2.96                 | 11.4            | 3.49      | 1.89      |
| 0900 | 15.18      | 11.36     | 6.86      | 164      | 2.99                 | 7.5             | 3.26      | 1.92      |
| 0905 | 15.18      | 11.33     | 6.86      | 167      | 2.99                 | 6.5             | 3.16      | 1.92      |
| 0910 | 15.18      | 11.30     | 6.86      | 169      | 2.99                 | 5.5             | 3.10      | 1.92      |
|      |            |           |           |          |                      |                 |           |           |
|      |            |           |           |          |                      |                 |           |           |
|      |            |           |           |          |                      |                 |           |           |

| Sampling Information: |        |          |                       |                               |                        |  |
|-----------------------|--------|----------|-----------------------|-------------------------------|------------------------|--|
| Quantity              | Size   | Material | Preservative          | Compounds analyzed            | Method                 |  |
| 2                     | 1 L    | Glass    | Unpreserved           | SVOC PAH's                    | EPA SW-846 Method 8270 |  |
| 1                     | 250 mL | Plastic  | Unpreserved           | Ferrous Iron                  | SM 3500 FE D           |  |
|                       |        |          |                       | Chloride                      | SM 4500 Cl E           |  |
|                       |        |          |                       | Total Alkalinity              | EPA Method 310.2       |  |
| 1                     | 250 mL | Plastic  | H2SO4                 | Nitrogen                      | EPA Method 351.2       |  |
| 1                     | 250 mL | Plastic  | HNO3                  | Lead & Manganese              | EPA Method 6010        |  |
| 3                     | 40 mL  | Glass    | HCl                   | VOC's & BTEX                  | EPA SW-846 Method 8260 |  |
| 1                     | 250 mL | Plastic  | NaOH                  | Total Cyanide                 | EPA Method 9012B       |  |
| 1                     | 250 mL | Plastic  | NaOH & Zinc Acetate   | Nitrate & Nitrite             | EPA Method 353.2       |  |
|                       |        |          |                       | Sulfide                       | EPA Method 376.1       |  |
|                       |        |          |                       | Sulfate                       | EPA Method 375.4       |  |
| 2                     | 40 mL  | Glass    | Benzalkonium Chloride | Methane/Ethane/<br>Ethene/CO2 | RSK-175                |  |

Sample ID: **MW-12-1018** Duplicate? Yes ☒ No ☒  
Sample Time: 0910 MS/MSD? Yes ☒ No ☒  
Shipped: Drop-off Albany Service Center ☐  
Pace Courier ☒  
Laboratory: Pace Analytical  
Greensburg, Pennsylvania

Sampling Personnel: K  
Job Number: 0603040-120950-221  
Well Id. **MW-13**

Date: 10/14/18  
Weather: Sunny 42  
Time In: 08:30 Time Out: 10:45

| Purging Information  |                                 |  |   |
|--|---------------------------------|--|---|
| Purging Method:  | Bailer <input type="checkbox"/> | Peristaltic <input type="checkbox"/>   | Well Wizard Dedicated Pump <input type="checkbox"/>                             |
| Tubing/Bailer Material:  | Teflon <input type="checkbox"/> | Stainless St. <input type="checkbox"/> | Polyethylene <input checked="" type="checkbox"/> other <input type="checkbox"/> |
| Sampling Method:   | Bailer <input type="checkbox"/> | Peristaltic <input type="checkbox"/>   | Well Wizard Dedicated Pump <input type="checkbox"/>                             |
| Average Pumping Rate:  | (ml/min)                        | 750                                    |   |
| Duration of Pumping:   | (min)                           | 30                                     |   |
| Total Volume Removed:  | (gal)                           | 2                                      |   |
| Did well go dry?      Yes <input type="checkbox"/> No <input type="checkbox"/>                                 |                                 |  |   |
| Horiba U-52 Water Quality Meter Used?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |                                 |  |   |

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

[illegible]

| Quantity | Size   | Material | Preservative          | Compounds analyzed            | Method                 |
|----------|--------|----------|-----------------------|-------------------------------|------------------------|
| 2        | 1 L    | Glass    | Unpreserved           | SVOC PAH's                    | EPA SW-846 Method 8270 |
| 1        | 250 mL | Plastic  | Unpreserved           | Ferrous Iron                  | SM 3500 FE D           |
|          |        |          |                       | Chloride                      | SM 4500 Cl E           |
|          |        |          |                       | Total Alkalinity              | EPA Method 310.2       |
| 1        | 250 mL | Plastic  | H2SO4                 | Nitrogen                      | EPA Method 351.2       |
| 1        | 250 mL | Plastic  | HNO3                  | Lead & Manganese              | EPA Method 6010        |
| 3        | 40 mL  | Glass    | HCl                   | VOC's & BTEX                  | EPA SW-846 Method 8260 |
| 1        | 250 mL | Plastic  | NaOH                  | Total Cyanide                 | EPA Method 9012B       |
| 1        | 250 mL | Plastic  | NaOH & Zinc Acetate   | Nitrate & Nitrite             | EPA Method 353.2       |
|          |        |          |                       | Sulfide                       | EPA Method 376.1       |
|          |        |          |                       | Sulfate                       | EPA Method 375.4       |
| 2        | 40 mL  | Glass    | Benzalkonium Chloride | Methane/Ethane/<br>Ethene/CO2 | RSK-175                |

**MW-13-MS-1018 and MW-13-MSD-1018**

Sample ID: MW-13-1018 Duplicate? Yes ☐ No ☒

Sample Time: 09:15 MS/MSD? Yes ☒ No ☐

MS 09:20

Shipped: Drop-off Albany Service Center ☐

Pace Courier ☒

Laboratory: Pace Analytical  
Greensburg, Pennsylvania

National Grid  
109 North Market Street, Johnstown New York

Sampling Personnel: JK  
Job Number: 0603040-120950-221  
Well Id. **MW-14**

Date: 10/16/18  
Weather: \_\_\_\_\_  
Time In: 11:40 Time Out: 12:10

| Well Information         |        | TOC          | Other |
|--------------------------|--------|--------------|-------|
| Depth to Water:          | (feet) | <u>13.90</u> |       |
| Depth to Bottom:         | (feet) | <u>23.55</u> |       |
| Depth to Product:        | (feet) |              |       |
| Length of Water Column:  | (feet) | <u>9.67</u>  |       |
| Volume of Water in Well: | (gal)  | <u>4.54</u>  |       |
| Three Well Volumes:      | (gal)  | <u>4.64</u>  |       |

|                         |   |                                   |
|-------------------------|---|-----------------------------------|
| Well Type:              | Flushmount <input checked="" type="checkbox"/>                      | Stick-Up <input type="checkbox"/> |
| Well Locked:            | Yes <input checked="" type="checkbox"/>                             | No <input type="checkbox"/>       |
| Measuring Point Marked: | Yes <input checked="" type="checkbox"/>                             | No <input type="checkbox"/>       |
| Well Material:          | PVC <input checked="" type="checkbox"/> SS <input type="checkbox"/> | Other: _____                      |
| Well Diameter:          | 1" <input type="checkbox"/> 2" <input checked="" type="checkbox"/>  | Other: _____                      |
| Comments:               |   |                                   |

|   |  |  |                         |
|---|--|--|-------------------------|
| Purging Information   |  | Conversion Factors   |                         |
| Purging Method:   | Bailer <input type="checkbox"/> Peristaltic <input type="checkbox"/>   | gal/ft. of water   | 1" ID 2" ID 4" ID 6" ID |
| Tubing/Bailer Material:   | Teflon <input type="checkbox"/> Stainless St. <input type="checkbox"/> |  | 0.04 0.16 0.66 1.47     |
| Sampling Method:  | Bailer <input type="checkbox"/> Peristaltic <input type="checkbox"/>   | 1 gallon=3.785L=3785mL=133.7cu. feet   |                         |
| Average Pumping Rate:   | (ml/min) <u>200</u>  |  |                         |
| Duration of Pumping:  | (min) <u>30</u>  |  |                         |
| Total Volume Removed:   | (gal) <u>2</u>   |  |                         |
| Horiba U-52 Water Quality Meter Used? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |  | Did well go dry? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |                         |

| Time  | DTW (feet) | Temp (°C) | pH (S.U.) | ORP (mV) | Conductivity (mS/cm) | Turbidity (NTU) | DO (mg/L) | TDS (g/L) |
|-------|------------|-----------|-----------|----------|----------------------|-----------------|-----------|-----------|
| 11:15 | 14.06      | 12.41     | 7.11      | -13      | 0.798                | 40.3            | 4.07      | 0.511     |
| 11:20 | 14.10      | 12.77     | 7.03      | -16      | 0.822                | 17.0            | 1.47      | 0.527     |
| 11:25 | 14.10      | 12.80     | 7.04      | -5       | 0.835                | 25.13           | 1.02      | 0.534     |
| 11:30 | 14.10      | 12.85     | 7.03      | 2        | 0.837                | 25.2            | 0.66      | 0.532     |
| 11:35 | 14.10      | 13.05     | 7.03      | 3.3      | 0.839                | 18.9            | 0.74      | 0.537     |
| 11:40 | 14.10      | 13.08     | 7.03      | 42       | 0.839                | 17.7            | 0.69      | 0.537     |
| 11:45 | 14.10      | 13.11     | 7.03      | 51       | 0.839                | 16.0            | 0.73      | 0.537     |
|       |            |           |           |          |                      |                 |           |           |
|       |            |           |           |          |                      |                 |           |           |
|       |            |           |           |          |                      |                 |           |           |
|       |            |           |           |          |                      |                 |           |           |
|       |            |           |           |          |                      |                 |           |           |

Sampling Information:

| Quantity | Size   | Material | Preservative          | Compounds analyzed            | Method                 |
|----------|--------|----------|-----------------------|-------------------------------|------------------------|
| 2        | 1 L    | Glass    | Unpreserved           | SVOC PAH's                    | EPA SW-846 Method 8270 |
| 1        | 250 mL | Plastic  | Unpreserved           | Ferrous Iron                  | SM 3500 FE D           |
|          |        |          |                       | Chloride                      | SM 4500 CI E           |
|          |        |          |                       | Total Alkalinity              | EPA Method 310.2       |
| 1        | 250 mL | Plastic  | H2SO4                 | Nitrogen                      | EPA Method 351.2       |
| 1        | 250 mL | Plastic  | HNO3                  | Lead & Manganese              | EPA Method 6010        |
| 3        | 40 mL  | Glass    | HCl                   | VOC's & BTEX                  | EPA SW-846 Method 8260 |
| 1        | 250 mL | Plastic  | NaOH                  | Total Cyanide                 | EPA Method 9012B       |
|          |        |          |                       | Nitrate & Nitrite             | EPA Method 353.2       |
| 1        | 250 mL | Plastic  | NaOH & Zinc Acetate   | Sulfide                       | EPA Method 376.1       |
|          |        |          |                       | Sulfate                       | EPA Method 375.4       |
| 2        | 40 mL  | Glass    | Benzalkonium Chloride | Methane/Ethane/<br>Ethene/CO2 | RSK-175                |

Field Duplicate-1018

Sample ID: MW-14-1018  
Sample Time: 11:45

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

Shipped: Drop-off Albany Service Center ☒  
Pace Courier  
Laboratory: Pace Analytical  
Greensburg, Pennsylvania

National Grid  
109 North Market Street, Johnstown New York

Sampling Personnel:                       
Job Number: 0603040-120950-221  
Well Id. **MW-15**

Date: 10/16/10  
Weather: PC 46°  
Time In: 12:20 Time Out: 13:40

| Well Information               |                   |       |
|--------------------------------|-------------------|-------|
|                                | TOC               | Other |
| Depth to Water: (feet)         | <u>16.20</u>      |       |
| Depth to Bottom: (feet)        | <u>23.00</u>      |       |
| Depth to Product: (feet)       | <u>          </u> |       |
| Length of Water Column: (feet) | <u>6.3</u>        |       |
| Volume of Water in Well: (gal) | <u>1.00</u>       |       |
| Three Well Volumes: (gal)      | <u>3.00</u>       |       |

|                         |   |                                   |
|-------------------------|---|-----------------------------------|
| Well Type:              | Flushmount <input checked="" type="checkbox"/>                      | Stick-Up <input type="checkbox"/> |
| Well Locked:            | Yes <input checked="" type="checkbox"/>                             | No <input type="checkbox"/>       |
| Measuring Point Marked: | Yes <input checked="" type="checkbox"/>                             | No <input type="checkbox"/>       |
| Well Material:          | PVC <input checked="" type="checkbox"/> SS <input type="checkbox"/> | Other: <input type="checkbox"/>   |
| Well Diameter:          | 1" <input type="checkbox"/> 2" <input checked="" type="checkbox"/>  | Other: <input type="checkbox"/>   |
| Comments:               |   |                                   |

| Purging Information            |                                 |   |
|--------------------------------|---------------------------------|---|
| Purging Method:                | Bailer <input type="checkbox"/> | Peristaltic <input type="checkbox"/>  |
| Tubing/Bailer Material:        | Teflon <input type="checkbox"/> | Stainless St. <input type="checkbox"/>  |
| Sampling Method:               | Bailer <input type="checkbox"/> | Peristaltic <input type="checkbox"/>  |
| Average Pumping Rate: (ml/min) | <u>2.00</u>                     | Well Wizard Dedicated Pump <input checked="" type="checkbox"/>                  |
| Duration of Pumping: (min)     | <u>30</u>                       | Polyethylene <input checked="" type="checkbox"/> other <input type="checkbox"/> |
| Total Volume Removed: (gal)    | <u>2</u>                        | Well Wizard Dedicated Pump <input checked="" type="checkbox"/>                  |

|                                       |   |
|---------------------------------------|---|
| Horiba U-52 Water Quality Meter Used? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------|---|

| Conversion Factors                   |       |       |       |       |
|--------------------------------------|-------|-------|-------|-------|
|                                      | 1" ID | 2" ID | 4" ID | 6" ID |
| gal/ft. of water                     | 0.04  | 0.16  | 0.66  | 1.47  |
| 1 gallon=3.785L=3785mL=133.7cu. feet |       |       |       |       |

| Time  | DTW (feet) | Temp (°C) | pH (S.U.) | ORP (mV) | Conductivity (mS/cm) | Turbidity (NTU) | DO (mg/L) | TDS (g/L) |
|-------|------------|-----------|-----------|----------|----------------------|-----------------|-----------|-----------|
| 12:15 | 16.85      | 13.31     | 6.86      | -50      | 0.860                | 35.4            | 1.40      | 0.556     |
| 12:20 | 17.05      | 13.28     | 6.83      | -87      | 0.980                | 20.5            | 1.27      | 0.361     |
| 12:25 | 17.28      | 13.21     | 6.84      | -94      | 0.873                | 21.2            | 1.10      | 0.339     |
| 12:30 | 17.40      | 13.14     | 6.83      | -98      | 0.879                | 17.4            | 1.02      | 0.304     |
| 12:35 | 17.94      | 13.15     | 6.83      | -99      | 0.978                | 17.2            | 0.93      | 0.304     |
| 12:40 | 18.26      | 13.13     | 6.84      | -100     | 0.981                | 16.4            | 0.82      | 0.546     |
| 12:45 | 18.51      | 13.09     | 6.84      | -102     | 0.986                | 16.3            | 0.78      | 0.546     |
|       |            |           |           |          |                      |                 |           |           |
|       |            |           |           |          |                      |                 |           |           |
|       |            |           |           |          |                      |                 |           |           |

| Sampling Information: |        |          |                       |                               |                        |
|-----------------------|--------|----------|-----------------------|-------------------------------|------------------------|
| Quantity              | Size   | Material | Preservative          | Compounds analyzed            | Method                 |
| 2                     | 1 L    | Glass    | Unpreserved           | SVOC PAH's                    | EPA SW-846 Method 8270 |
| 1                     | 250 mL | Plastic  | Unpreserved           | Ferrous Iron                  | SM 3500 FE D           |
|                       |        |          |                       | Chloride                      | SM 4500 Cl E           |
|                       |        |          |                       | Total Alkalinity              | EPA Method 310.2       |
|                       |        |          |                       | Nitrogen                      | EPA Method 351.2       |
| 1                     | 250 mL | Plastic  | H2SO4                 | Lead & Manganese              | EPA Method 6010        |
| 1                     | 250 mL | Plastic  | HNO3                  | VOC's & BTEX                  | EPA SW-846 Method 8260 |
| 3                     | 40 mL  | Glass    | HCl                   | Total Cyanide                 | EPA Method 9012B       |
| 1                     | 250 mL | Plastic  | NaOH                  | Nitrate & Nitrite             | EPA Method 353.2       |
| 1                     | 250 mL | Plastic  | NaOH & Zinc Acetate   | Sulfide                       | EPA Method 376.1       |
|                       |        |          |                       | Sulfate                       | EPA Method 375.4       |
|                       |        |          |                       | Methane/Ethane/<br>Ethene/CO2 | RSK-175                |
| 2                     | 40 mL  | Glass    | Benzalkonium Chloride |                               |                        |

|                              |  |   |
|------------------------------|--|---|
| Sample ID: <b>MW-15-1018</b> | Duplicate? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Shipped: Drop-off Albany Service Center <input checked="" type="checkbox"/> |
| Sample Time: <u>12:45</u>    | MS/MSD? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>    | Pace Courier <input checked="" type="checkbox"/>                            |
|                              |  | Laboratory: Pace Analytical<br>Greensburg, Pennsylvania                     |

Sampling Personnel: \_\_\_\_\_  
Job Number: 0603040-120950-221  
Well Id. **MW-16**

Date: 10/16/18  
Weather: pc 42°  
Time In: 12:00 Time Out: 11:10

| Well Information         |        |       | TOC | Other |
|--------------------------|--------|-------|-----|-------|
| Depth to Water:          | (feet) | 9.80  |     |       |
| Depth to Bottom:         | (feet) | 19.45 |     |       |
| Depth to Product:        | (feet) |       |     |       |
| Length of Water Column:  | (feet) | 9.57  |     |       |
| Volume of Water in Well: | (gal)  | 4.53  |     |       |
| Three Well Volumes:      | (gal)  | 4.59  |     |       |

|                         |              |                                     |          |                                     |
|-------------------------|--------------|-------------------------------------|----------|-------------------------------------|
| Well Type:              | Flushmount   | <input checked="" type="checkbox"/> | Stick-Up | <input type="checkbox"/>            |
| Well Locked:            | Yes          | <input checked="" type="checkbox"/> | No       | <input type="checkbox"/>            |
| Measuring Point Marked: | Yes          | <input checked="" type="checkbox"/> | No       | <input type="checkbox"/>            |
| Well Material:          | PVC          | <input checked="" type="checkbox"/> | SS       | <input type="checkbox"/>            |
| Well Diameter:          | 1"           | <input type="checkbox"/>            | 2"       | <input checked="" type="checkbox"/> |
| Comments:               | Other: _____ |                                     |          |                                     |
| Other: _____            |              |                                     |          |                                     |

| Purging Information   |                                 |  |   |
|---|---------------------------------|--|---|
| Purging Method:   | Bailer <input type="checkbox"/> | Peristaltic <input type="checkbox"/>   | Well Wizard Dedicated Pump <input checked="" type="checkbox"/>                  |
| Tubing/Bailer Material:   | Teflon <input type="checkbox"/> | Stainless St. <input type="checkbox"/> | Polyethylene <input checked="" type="checkbox"/> other <input type="checkbox"/> |
| Sampling Method:  | Bailer <input type="checkbox"/> | Peristaltic <input type="checkbox"/>   | Well Wizard Dedicated Pump <input checked="" type="checkbox"/>                  |
| Average Pumping Rate: (ml/min)  | 200                             |  |   |
| Duration of Pumping: (min)  | 30                              |  |   |
| Total Volume Removed: (gal)   | 2                               |  |   |
| Did well go dry? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                      |                                 |  |   |
| Horiba U-52 Water Quality Meter Used? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |                                 |  |   |

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

[illegible]

| Quantity | Size   | Material | Preservative          | Compounds analyzed            | Method                 |
|----------|--------|----------|-----------------------|-------------------------------|------------------------|
| 2        | 1 L    | Glass    | Unpreserved           | SVOC PAH's                    | EPA SW-846 Method 8270 |
| 1        | 250 mL | Plastic  | Unpreserved           | Ferrous Iron                  | SM 3500 FE D           |
|          |        |          |                       | Chloride                      | SM 4500 CI E           |
|          |        |          |                       | Total Alkalinity              | EPA Method 310.2       |
| 1        | 250 mL | Plastic  | H2SO4                 | Nitrogen                      | EPA Method 351.2       |
| 1        | 250 mL | Plastic  | HNO3                  | Lead & Manganese              | EPA Method 6010        |
| 3        | 40 mL  | Glass    | HCl                   | VOC's & BTEX                  | EPA SW-846 Method 8260 |
| 1        | 250 mL | Plastic  | NaOH                  | Total Cyanide                 | EPA Method 9012B       |
| 1        | 250 mL | Plastic  | NaOH & Zinc Acetate   | Nitrate & Nitrite             | EPA Method 353.2       |
|          |        |          |                       | Sulfide                       | EPA Method 376.1       |
|          |        |          |                       | Sulfate                       | EPA Method 375.4       |
| 2        | 40 mL  | Glass    | Benzalkonium Chloride | Methane/Ethane/<br>Ethene/CO2 | RSK-175                |

Sample ID: MW-16-1018      Duplicate?    Yes ☐ No ☒   
 Sample Time: 10-40      MS/MSD?    Yes ☐ No ☒

Shipped: Drop-off Albany Service Center ☒   
                  Pace Courier ☒   
 Laboratory: Pace Analytical   
                  Greensburg, Pennsylvania



## Appendix B – Data Usability Summary Report

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November 30, 2018

Devin Shay  
Groundwater & Environmental Services  
Syracuse  
5 Technology Place, Suite 4  
East Syracuse, NY 13057

RE: Data Usability Summary Report for National Grid: Johnstown, NY Site Data Package  
Pace Analytical Job No. 30250982

Groundwater & Environmental Services, Inc. (GES) reviewed one data package (Laboratory Project Number 30268504) from Pace Analytical Services, Inc., for the analysis of groundwater samples collected on October 16, 2018 from monitoring wells located at the National Grid: Johnstown, NY Site. Eight aqueous samples and a field duplicate were analyzed for dissolved gases, PAHs, Nitrogen, Metals, Alkalinity, Chloride, Ferrous Iron, Cyanide, Sulfide and Sulfate. Methodologies utilized were those of PAES, EPA 351.2, EPA 6010C, SM4500CIE-97, SM4500NO3F-00, SM3500-FeD-00, SM4500S2F-00, and the USEPA SW846 methods 8260C/8270DSIM/9012B, with additional QC requirements of the NYSDEC ASP.

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

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

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

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

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

The laboratory case narratives and sample identification summary forms are attached to this text, and should be reviewed in conjunction with this report.



**Table 1. Laboratory – Field Cross Reference**

| Lab ID      | Sample ID              | Date Collected | Date Received  |
|-------------|------------------------|----------------|----------------|
| 30268504001 | MW-4-1018              | 10/16/18 10:13 | 10/17/18 10:00 |
| 30268504002 | MW-7-1018              | 10/16/18 11:50 | 10/17/18 10:00 |
| 30268504003 | MW-10-1018             | 10/16/18 11:00 | 10/17/18 10:00 |
| 30268504004 | MW-12-1018             | 10/16/18 09:10 | 10/17/18 10:00 |
| 30268504005 | MW-13-1018             | 10/16/18 09:15 | 10/17/18 10:00 |
| 30268504006 | MW-13-MS-1018          | 10/16/18 09:20 | 10/17/18 10:00 |
| 30268504007 | MW-13-MSD-1018         | 10/16/18 09:25 | 10/17/18 10:00 |
| 30268504008 | MW-14-1018             | 10/16/18 11:45 | 10/17/18 10:00 |
| 30268504009 | MW-15-1018             | 10/16/18 12:45 | 10/17/18 10:00 |
| 30268504010 | MW-16-1018             | 10/16/18 10:40 | 10/17/18 10:00 |
| 30268504011 | Field Duplicate - 1018 | 10/16/18 00:00 | 10/17/18 10:00 |
| 30268504012 | Trip Blank             | 10/16/18 00:00 | 10/17/18 10:00 |

**Table 2. Validation Qualifiers**

| Sample ID               | Qualifier | Analyte   | Reason for qualification          |
|-------------------------|-----------|---|-----------------------------------|
|                         | J         | 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Fluoranthene, Fluorene, Naphthalene, Phenanthrene, Pyrene                                    | RPD MS/MSD out of specification   |
|                         | R         | Nitrogen Kjeldahl total   | Recovery 0% MS/MSD                |
|                         | J-/UJ-    | Chloride<br>Nitrogen - nitrate-nitrite<br>Sulfate<br>Cyanide  | Low MS/MSD recovery               |
| All Samples             | J-        | Ferrous Iron  | Hold time 15 minutes              |
| MW-14<br>MW-15<br>MW-16 | J-        | Sulfide   | Incorrect preservation            |
| MW-10<br>MW-13          | J+        | Benzo(b)fluoranthene<br>Benzo(k)fluoranthene  | Resolution issue; peak co-elution |
| MW-14<br>MW-15<br>MW-16 | J-        | Benzo(a)anthracene, Benzo(a)pyrene<br>Benzo(b)fluoranthene<br>Benzo(k)fluoranthene<br>Chrysene Dibenzanthracene,<br>Fluoranthene,<br>Indeno(1,2,3-cd)pyrene | Internal standard low             |
| MW-7S                   | UJ-       | PAHs  | Surrogate recovery low            |
| Field Dup               | R         | Fluoranthene<br>Phenanthrene<br>Pyrene  | Not confirmed in original sample  |

In summary, sample results were usable as reported, with caution using estimated data due to noncompliance in the QC elements.

The laboratory case narratives and sample identification summary forms are attached to this text, and should be reviewed in conjunction with this report.

#### **BTEX and TCL Volatiles by EPA 8260C/NYSDEC ASP**

Sample holding times were met and instrumental tune fragmentations were within acceptance ranges. Surrogate and internal standard recoveries were within required limits. Calibrations standards show acceptable responses within analytical protocol and validation action limits. The blind field duplicate correlations of MW-12-2018 fall within guidance limits. The MS/MSD showed acceptable accuracy and precision. Surrogate recovery was within bounds, and LCS recoveries were used to determine method efficacy.

#### **PAHs by EPA8270D/NYSDEC ASP**

Holding times were met. Instrumental tune fragmentations were within acceptance ranges. Surrogate recoveries were within analytical and validation guidelines, with the exception of a low recovery of terphenyl-d14 (TD14) in MW-7S which resulted in qualification of the analytes that are associated with this surrogate as estimates with a possible low bias. The listed qualifications are noted in Table 2.

The MS/MSD also had low TD14 recoveries, however, the analytes are already qualified due to analyte precision and recovery, and the low surrogate recovery does not further affect the data.

Blanks show no contamination. Calibration standards, both initial and continuing, show acceptable responses within analytical method protocols and validation guidelines. The blind field duplicate correlations of MW-14-2018 fall within guidance limits, three analytes are qualified as unusable in the field duplicate as the original sample does not confirm the presence at the location. The data for the field duplicate for these analytes is qualified as unusable.

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

#### **Lead and Manganese by EPA 6010/NYDESC ASP**

The matrix spikes of MW-13-2018 show acceptable accuracy and precision. The blind field duplicate correlations of MW-12-2018 fall within guidance limits with the exception of manganese, which is qualified as estimated due to precision issues. Instrument performance is compliant, and blanks show no contamination above the reporting limit. The ICP serial dilution evaluations were within specification for samples with detections of the target elements above the action limit.

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

Review was conducted for method compliance, holding times, transcription, calculations, standard and blank acceptability, accuracy and precision, etc., as applicable to each procedure. All were found acceptable for the validated samples with the following exceptions in the MW-13 MS/MSDs:

- Alkalinity: reported recoveries low out of specification; no qualification is necessary as the initial concentration in the sample is >4X the spiking concentration.
- Cyanide: recovery was low, the data is qualified as estimated with a possible low bias
- Sulfate: recovery was low, the data is qualified as estimated with a possible low bias
- Sulfide: recovery was low, the data is qualified as estimated with a possible low bias
- Chloride: recovery was low, the data is qualified as estimated with a possible low bias

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

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

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

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

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

Review was conducted for method compliance, holding times, transcription, calculations, standard and blank acceptability, accuracy and precision, etc., as applicable to each procedure. All were found acceptable for the validated samples. Calibration standard responses were compliant. Blanks show no detections above the reporting limits. The MS/MSD recoveries were out of specification for MW-13 associated samples:

- Nitrogen, NO<sub>2</sub> plus NO<sub>3</sub> recovered low in both MS and MSD. The data is qualified as estimated non-detect with a possible low bias.
- Nitrogen, Kjeldahl, Total recovered below usable standards (0% recovery, EPA minimum is 10%) in the MS. The non-detect data is qualified as rejected and unusable.

## **Data Precision**

**Table 3**  
**Field Precision**  
**JOHNSTOWN NY SITE**  
**October 2018**

| Field Identification | Analyte                        | Sample Result (µg/L) | Duplicate Result (µg/L) | RPD (%) | Qualified     |
|----------------------|--------------------------------|----------------------|-------------------------|---------|---------------|
| MW-14/FIELD DUP      | Alkalinity                     | 430                  | 400                     | 7       | A             |
|                      | Manganese                      | 15.2                 | 13.8                    | 10      | J             |
|                      | Sulfate                        | 0.47                 | 0.52                    | 10      | A             |
|                      | Nitrogen, nitrate plus nitrite | 5.1                  | 5.7                     | 11      | A             |
|                      | Chloride                       | 757                  | 716                     | 6       | A             |
|                      | Sulfate                        | 66.8                 | 76                      | 13      | A             |
|                      | Acenaphthylene                 | 0.62                 | 0.55                    | 11      | A             |
|                      | Fluorene                       | 0.13                 | 0.12                    | 1       | A             |
|                      | Flouranthene                   | ND                   | 0.12                    | -       | Not confirmed |
|                      | Phenanthrene                   | ND                   | 0.12                    | -       | Not confirmed |
|                      | Pyrene                         | ND                   | 0.13                    | -       | Not confirmed |

A\*: Data is not confirmed or peak is part of a co-eluted pair – original data is low level and variance allows a non-detect concentration. No qualifications for the data.

## **Data Package Completeness**

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

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



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

## VALIDATION DATA QUALIFIER DEFINITIONS

- U** The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
- J** The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
- J-** The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased low.
- J+** The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased high.
- UJ** The analyte was analyzed for, but was not detected. The associated reported quantitation limit is approximate and may be inaccurate or imprecise.
- NJ** The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control limits. The analyte may or may not be present.

# **Sample Summaries and Laboratory Case Narratives**

## SAMPLE SUMMARY

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

| Lab ID      | Sample ID              | Matrix | Date Collected | Date Received  |
|-------------|------------------------|--------|----------------|----------------|
| 30268504001 | MW-4-1018              | Water  | 10/16/18 10:13 | 10/17/18 10:00 |
| 30268504002 | MW-7-1018              | Water  | 10/16/18 11:50 | 10/17/18 10:00 |
| 30268504003 | MW-10-1018             | Water  | 10/16/18 11:00 | 10/17/18 10:00 |
| 30268504004 | MW-12-1018             | Water  | 10/16/18 09:10 | 10/17/18 10:00 |
| 30268504005 | MW-13-1018             | Water  | 10/16/18 09:15 | 10/17/18 10:00 |
| 30268504006 | MW-13-MS-1018          | Water  | 10/16/18 09:20 | 10/17/18 10:00 |
| 30268504007 | MW-13-MSD-1018         | Water  | 10/16/18 09:25 | 10/17/18 10:00 |
| 30268504008 | MW-14-1018             | Water  | 10/16/18 11:45 | 10/17/18 10:00 |
| 30268504009 | MW-15-1018             | Water  | 10/16/18 12:45 | 10/17/18 10:00 |
| 30268504010 | MW-16-1018             | Water  | 10/16/18 10:40 | 10/17/18 10:00 |
| 30268504011 | Field Duplicate - 1018 | Water  | 10/16/18 00:00 | 10/17/18 10:00 |
| 30268504012 | Trip Blank             | Water  | 10/16/18 00:00 | 10/17/18 10:00 |

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

---

**Method:** EPA 6010C

**Description:** 6010C MET ICP

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

**General Information:**

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

**Hold Time:**

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

**Sample Preparation:**

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

**Initial Calibrations (including MS Tune as applicable):**

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

**Continuing Calibration:**

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

**Method Blank:**

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

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

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

**Duplicate Sample:**

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

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

**Method:** EPA 8270D by SIM

**Description:** 8270D MSSV PAH by SIM

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

### General Information:

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

ip: Benzo(b)fluoranthene and benzo(k)fluoranthene were separated in the check standard but did not meet the resolution criteria in SW846 Method 8270D. Whereas sample results included are reported as individual isomers, the lab and the customer must recognize them as an isomeric pair.

- Field Duplicate - 1018 (Lab ID: 30268504011)
- MW-10-1018 (Lab ID: 30268504003)
- MW-12-1018 (Lab ID: 30268504004)
- MW-13-1018 (Lab ID: 30268504005)
- MW-14-1018 (Lab ID: 30268504008)
- MW-15-1018 (Lab ID: 30268504009)
- MW-16-1018 (Lab ID: 30268504010)

### Hold Time:

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

### Sample Preparation:

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

### Initial Calibrations (including MS Tune as applicable):

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

### Continuing Calibration:

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

### Internal Standards:

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

QC Batch: 317406

IS: The internal standard response is below criteria. Results may be biased high.

- MS (Lab ID: 1548487)
  - Benzo(a)anthracene
  - Benzo(a)pyrene
  - Benzo(b)fluoranthene
  - Benzo(g,h,i)perylene
  - Benzo(k)fluoranthene
  - Chrysene
  - Dibenzo(a,h)anthracene
  - Indeno(1,2,3-cd)pyrene
- MSD (Lab ID: 1548488)
  - Benzo(a)anthracene
  - Benzo(a)pyrene
  - Benzo(b)fluoranthene
  - Benzo(g,h,i)perylene

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

**Method:** EPA 8270D by SIM

**Description:** 8270D MSSV PAH by SIM

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

QC Batch: 317406

IS: The internal standard response is below criteria. Results may be biased high.

- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- MW-13-MS-1018 (Lab ID: 30268504006)
  - Benzo(a)anthracene
  - Benzo(a)pyrene
  - Benzo(b)fluoranthene
  - Benzo(g,h,i)perylene
  - Benzo(k)fluoranthene
  - Chrysene
  - Dibenz(a,h)anthracene
  - Indeno(1,2,3-cd)pyrene
- MW-13-MSD-1018 (Lab ID: 30268504007)
  - Benzo(a)anthracene
  - Benzo(a)pyrene
  - Benzo(b)fluoranthene
  - Benzo(g,h,i)perylene
  - Benzo(k)fluoranthene
  - Chrysene
  - Dibenz(a,h)anthracene
  - Indeno(1,2,3-cd)pyrene
- MW-14-1018 (Lab ID: 30268504008)
  - Benzo(a)anthracene
  - Benzo(a)pyrene
  - Benzo(b)fluoranthene
  - Benzo(g,h,i)perylene
  - Benzo(k)fluoranthene
  - Chrysene
  - Dibenz(a,h)anthracene
  - Indeno(1,2,3-cd)pyrene
- MW-15-1018 (Lab ID: 30268504009)
  - Benzo(a)anthracene
  - Benzo(a)pyrene
  - Benzo(b)fluoranthene
  - Benzo(g,h,i)perylene
  - Benzo(k)fluoranthene
  - Chrysene
  - Dibenz(a,h)anthracene
  - Indeno(1,2,3-cd)pyrene
- MW-16-1018 (Lab ID: 30268504010)
  - Benzo(a)anthracene
  - Benzo(a)pyrene
  - Benzo(b)fluoranthene

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

**Method:** EPA 8270D by SIM

**Description:** 8270D MSSV PAH by SIM

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

QC Batch: 317406

IS: The internal standard response is below criteria. Results may be biased high.

- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Indeno(1,2,3-cd)pyrene

### Surrogates:

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

QC Batch: 317406

SR: Surrogate recovery was below laboratory control limits. Results may be biased low.

- MS (Lab ID: 1548487)
  - Terphenyl-d14 (S)
- MSD (Lab ID: 1548488)
  - Terphenyl-d14 (S)
- MW-13-MS-1018 (Lab ID: 30268504006)
  - Terphenyl-d14 (S)
- MW-13-MSD-1018 (Lab ID: 30268504007)
  - Terphenyl-d14 (S)
- MW-7-1018 (Lab ID: 30268504002)
  - Terphenyl-d14 (S)

### Method Blank:

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

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

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

QC Batch: 317406

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30268504005

MH: Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.

- MS (Lab ID: 1548487)
  - Acenaphthene
  - Acenaphthylene
  - Fluorene
- MSD (Lab ID: 1548488)
  - 2-Methylnaphthalene
  - Acenaphthene
  - Anthracene
  - Fluorene

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

---

**Method:** EPA 8270D by SIM

**Description:** 8270D MSSV PAH by SIM

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

QC Batch: 317406

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30268504005

MH: Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.

- Naphthalene
- Phenanthrene

R1: RPD value was outside control limits.

- MSD (Lab ID: 1548488)
  - 2-Methylnaphthalene
  - Acenaphthene
  - Acenaphthylene
  - Anthracene
  - Fluoranthene
  - Fluorene
  - Naphthalene
  - Phenanthrene
  - Pyrene

### Additional Comments:

Analyte Comments:

QC Batch: 317406

1c: This sample was re-extracted past the method required holding time. Surrogate recovery in the re-extract was acceptable and the re-extract results were comparable to the original results. The original, in hold, results are reported.

- MW-7-1018 (Lab ID: 30268504002)
  - Terphenyl-d14 (S)

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

---

**Method:** EPA 8260C

**Description:** 8260C MSV

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

**General Information:**

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

**Hold Time:**

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

**Initial Calibrations (including MS Tune as applicable):**

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

**Continuing Calibration:**

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

**Internal Standards:**

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

**Surrogates:**

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

**Method Blank:**

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

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

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

**Additional Comments:**

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

---

**Method:** SM2320B-2011

**Description:** 2320B Alkalinity

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

### General Information:

11 samples were analyzed for SM2320B-2011. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

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

### Method Blank:

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

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

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

QC Batch: 317093

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30268504005

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MS (Lab ID: 1546969)
  - Alkalinity, Total (CaCO<sub>3</sub> pH4.5)
- MSD (Lab ID: 1546970)
  - Alkalinity, Total (CaCO<sub>3</sub> pH4.5)

### Additional Comments:

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

**Method:** SM3500-FeD-00

**Description:** Iron, Ferrous

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

### General Information:

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

### Hold Time:

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

H1: Analysis conducted outside the EPA method holding time.

- MW-10-1018 (Lab ID: 30268504003)
- MW-14-1018 (Lab ID: 30268504008)
- MW-15-1018 (Lab ID: 30268504009)
- MW-16-1018 (Lab ID: 30268504010)
- MW-4-1018 (Lab ID: 30268504001)
- MW-7-1018 (Lab ID: 30268504002)

H3: Sample was received or analysis requested beyond the recognized method holding time.

- Field Duplicate - 1018 (Lab ID: 30268504011)
- MW-12-1018 (Lab ID: 30268504004)
- MW-13-1018 (Lab ID: 30268504005)
- MW-13-MS-1018 (Lab ID: 30268504006)
- MW-13-MSD-1018 (Lab ID: 30268504007)

H6: Analysis initiated outside of the 15 minute EPA required holding time.

- Field Duplicate - 1018 (Lab ID: 30268504011)
- MW-10-1018 (Lab ID: 30268504003)
- MW-12-1018 (Lab ID: 30268504004)
- MW-13-1018 (Lab ID: 30268504005)
- MW-13-MS-1018 (Lab ID: 30268504006)
- MW-13-MSD-1018 (Lab ID: 30268504007)
- MW-14-1018 (Lab ID: 30268504008)
- MW-15-1018 (Lab ID: 30268504009)
- MW-16-1018 (Lab ID: 30268504010)
- MW-4-1018 (Lab ID: 30268504001)
- MW-7-1018 (Lab ID: 30268504002)

### Method Blank:

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

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

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

### Additional Comments:

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

---

**Method:** SM4500S2F-00

**Description:** 4500S2F Sulfide, Iodometric

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

### General Information:

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

P4: Sample field preservation does not meet EPA or method recommendations for this analysis.

- Field Duplicate - 1018 (Lab ID: 30268504011)
- MW-15-1018 (Lab ID: 30268504009)
- MW-16-1018 (Lab ID: 30268504010)

### Hold Time:

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

### Method Blank:

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

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

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

### Additional Comments:

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

---

**Method:** EPA 351.2

**Description:** 351.2 Total Kjeldahl Nitrogen

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

### General Information:

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

### Hold Time:

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

### Sample Preparation:

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

### Method Blank:

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

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

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

QC Batch: 317118

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30267837001,30268504005

MH: Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.

- MS (Lab ID: 1547107)
  - Nitrogen, Kjeldahl, Total
- MSD (Lab ID: 1547108)
  - Nitrogen, Kjeldahl, Total

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MS (Lab ID: 1547109)
  - Nitrogen, Kjeldahl, Total
- MSD (Lab ID: 1547110)
  - Nitrogen, Kjeldahl, Total

### Additional Comments:

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

---

**Method:** SM4500CIE-2011

**Description:** 4500 Chloride

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

### General Information:

11 samples were analyzed for SM4500CIE-2011. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

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

### Method Blank:

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

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

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

QC Batch: 317178

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30268504005

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MSD (Lab ID: 1547324)
- Chloride

### Additional Comments:

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

---

**Method:** SM4500NO3F-00

**Description:** SM4500NO3-F, NO3-NO2

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

**General Information:**

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

**Hold Time:**

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

**Method Blank:**

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

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

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

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

---

**Method:** EPA 9012B

**Description:** 9012B Cyanide, Total

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

### General Information:

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

### Hold Time:

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

### Sample Preparation:

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

### Method Blank:

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

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

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

QC Batch: 317217

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30268504005,30268646005

MH: Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.

- MS (Lab ID: 1547506)
  - Cyanide
- MSD (Lab ID: 1547507)
  - Cyanide

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MS (Lab ID: 1547508)
  - Cyanide
- MSD (Lab ID: 1547509)
  - Cyanide

### Additional Comments:

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30268504

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**Method:** ASTM D516-90,02

**Description:** ASTM D516 Sulfate Water

**Client:** Groundwater & Environmental Services, Inc. (Syracuse)

**Date:** October 29, 2018

### General Information:

11 samples were analyzed for ASTM D516-90,02. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

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

### Method Blank:

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

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

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

QC Batch: 317072

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30268504005

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MS (Lab ID: 1546796)
  - Sulfate
- MSD (Lab ID: 1546797)
  - Sulfate

### Additional Comments:

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

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