

December 23, 2021

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 # 518020
Semi-Annual Groundwater Monitoring Report (December 2021)

Dear Mr. Squire:

Enclosed is the Semi-Annual Groundwater Monitoring Report July through December 2021 for the Johnstown (N. Market St.) MGP Site located in Johnstown, New York. The report includes the groundwater monitoring results from October 6, 2021.

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

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

Sincerely,



for

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

Cc: Carolyn Rooney -National Grid
Nathan Freeman- NYSDOH

National Grid

Semi-Annual Groundwater Monitoring Report



National Grid
109 North Market Street
Johnstown, NY 12095

December 2021

Version 1





Semi-Annual Groundwater Monitoring Report

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

Prepared for:
National Grid
300 Erie Boulevard West, C-1
Syracuse, NY 13202

Prepared by:
Groundwater & Environmental Services, Inc.
6780 Northern Boulevard, Suite 100
East Syracuse, NY 13057
TEL: 800-220-3069
www.gesonline.com

GES Project:
0603275.120950.221

Date:
December 23, 2021

A handwritten signature in black ink, appearing to read "D. Shay", is positioned above a horizontal line.

Devin T. Shay, PG
Program Manager / Principal Hydrogeologist



Table of Contents

1	Introduction	1
1.1	Overview	1
1.2	Purpose and Objective	1
2	Background	2
2.1	Site Description	2
2.2	Site History	2
2.2.1	Site Assessment and Investigations	3
2.2.2	Interim Remedial Measures Completed	3
2.3	Environmental Setting	3
2.3.1	Site Geology	4
2.3.2	Site Hydrogeology	4
3	Monitoring Activities	5
3.1	Groundwater Gauging and Sampling Procedures	5
3.1.1	Gauging	5
3.1.2	Sampling	5
3.1.3	Natural Attenuation Parameters	6
3.2	Groundwater Analytical Results	7
3.2.1	Site Related Parameters	8
3.2.2	Monitored Natural Attenuation Parameters	8
3.2.3	Natural Attenuation Trending	9
4	Conclusions and Recommendations	10
4.1	Conclusions	10
4.1.1	Groundwater Levels	10
4.1.2	Site-Related Constituents	10
4.1.3	Natural Attenuation	11
4.2	Recommendations	11
5	References	11



Figures

- Figure 1 – Site Location Map
- Figure 2 – Site Map
- Figure 3 – Groundwater Monitoring Map
- Figure 4 – Natural Attenuation Map
- Figure 5 – BTEX Concentration Map
- Figure 6 – Naphthalene Concentration Map

Tables

- Table 1 – Contaminant Trend Analysis
- Table 2 – Groundwater Level Measurements
- Table 3 – Analytical Data Results

Appendices

- Appendix A – Field Data
- Appendix B – Data Usability Summary Report



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 2021 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 October 2021 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 8 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 2021 as well as previous events. **Appendix A** also presents the field documentation from the October 2021 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 (± 0.1 Standard Unit (SU) for pH, $\pm 3\%$ for specific conductivity, ± 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 (Fe^{3+}) to ferrous iron (Fe^{2+}). Relatively low ferrous iron concentrations may be present in areas where natural attenuation is occurring if free ferrous iron is re-precipitating as sulfides or carbonates.



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

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

The buffering capacity of groundwater is a function of alkalinity. Typically, alkalinity is primarily due to carbonate alkalinity. The organic acids or 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 6, 2021, 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 of BTEX were observed in the groundwater samples collected from monitoring well MW-13. Monitoring well MW-13 is located east of former gas holder #2.

PAHs – PAHs above NYSDEC WQ Values were detected in samples collected on October 6, 2021, from monitoring wells MW-10, MW-13, MW-14, MW-15, and MW-16. Naphthalene (MW-15) has typically been detected at the highest concentration of any PAH.

Cyanide - Concentrations of cyanide were below the NYSDEC WQ Value (0.2 mg/L) in all groundwater samples October 6, 2021.

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 2021 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-14, 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 April 2013 (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	Decreasing
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	No Trend	No Trend	No Trend	No Trend
MW-15	Decreasing	Stable	Stable	Stable	No Trend
MW-16	Stable	No Trend	Stable	Stable	Prob. Increasing

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) includes 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 2021 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 2022.

5 References

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

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

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

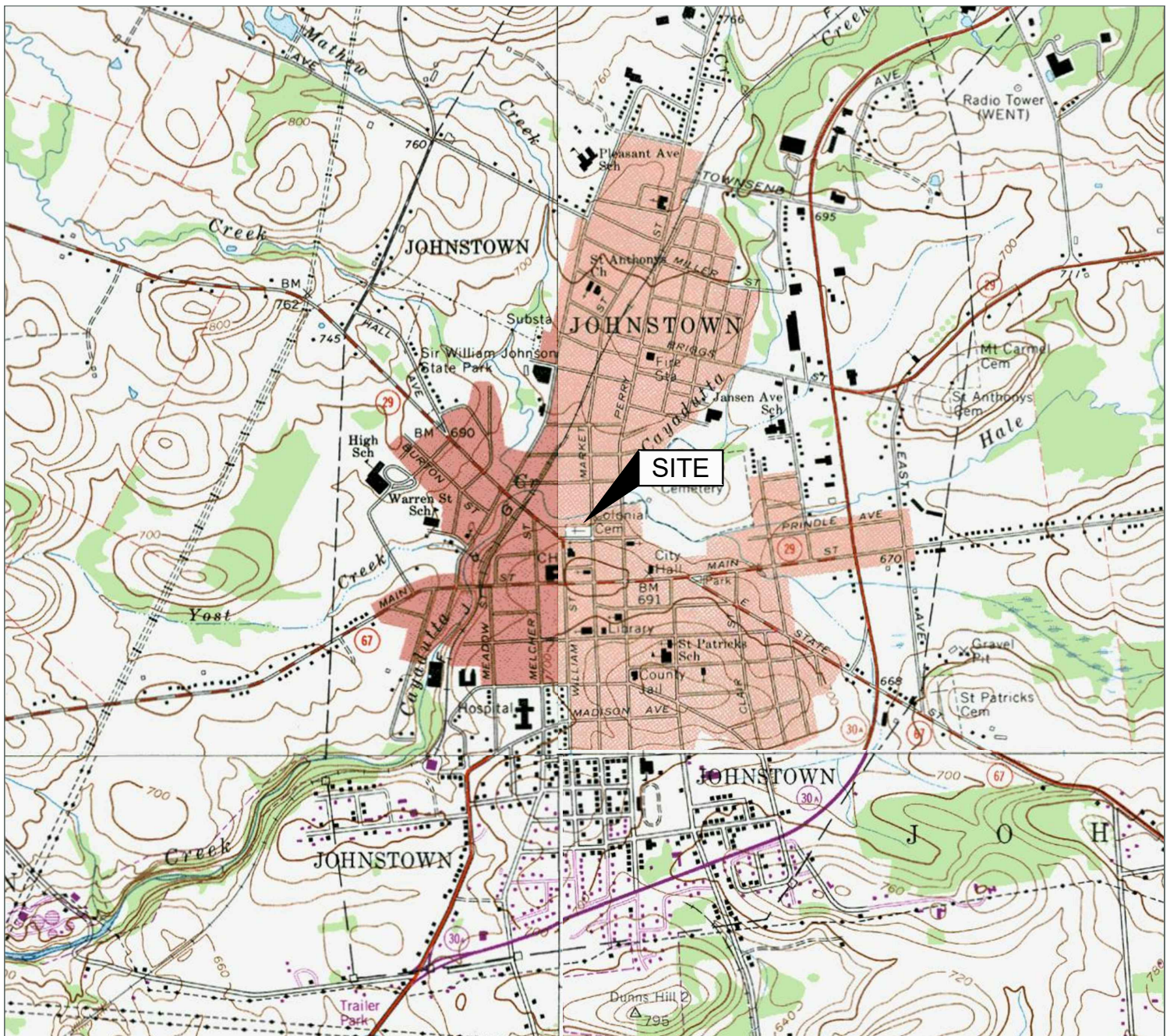
Niagara Mohawk Power Corporation. "Interim Remedial Measure (IRM) Summary Report for the Johnstown (N. Market Street) Site. Johnstown, Fulton County, New York. Site No. 5-18-020:.. Tetra Tech FW, June 2007.

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

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



Figures



Source:
USGS 7.5 Minute Series
Topographic Quadrangle, 1970
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
11/15/19
Figure
1

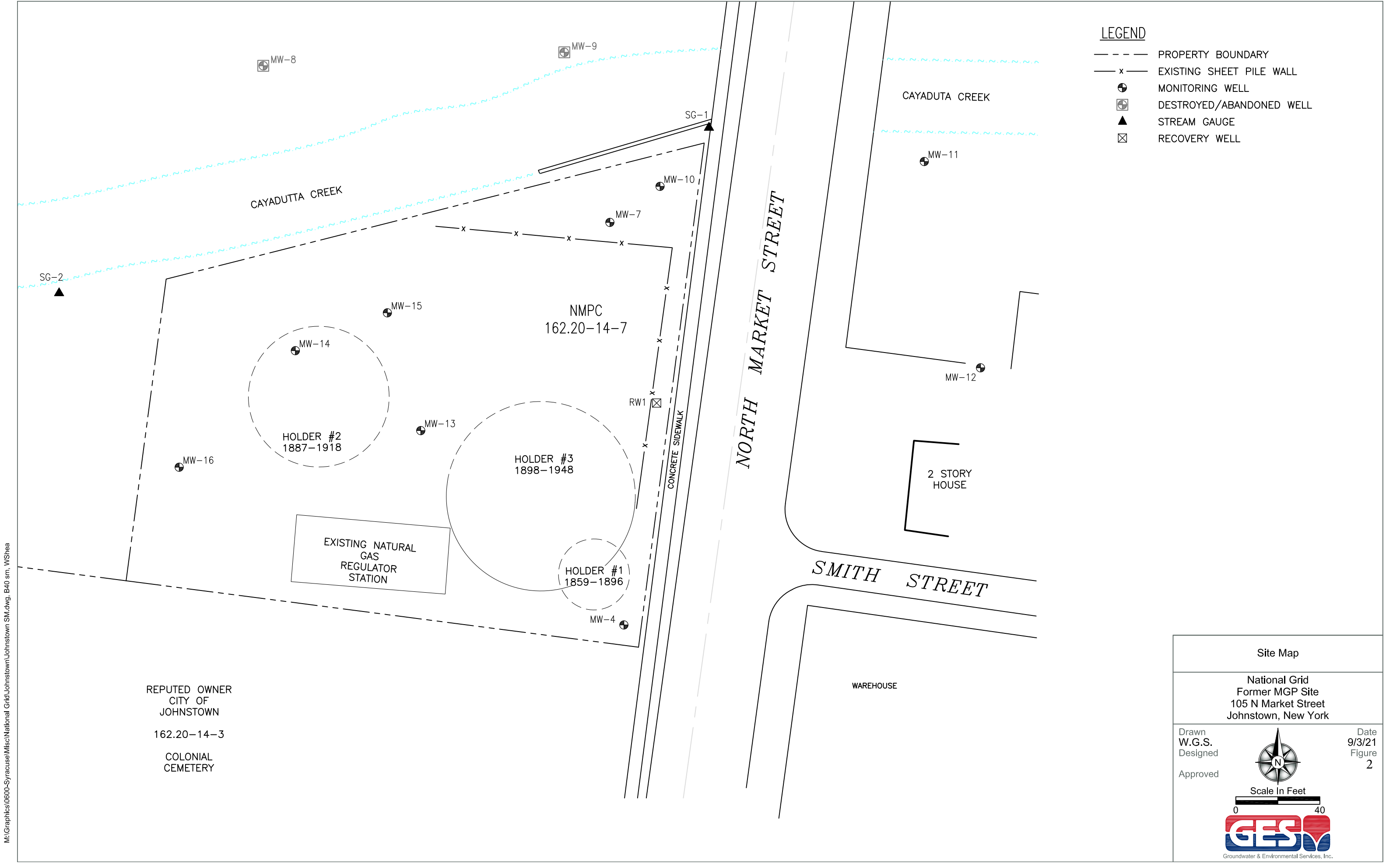


Scale In Feet

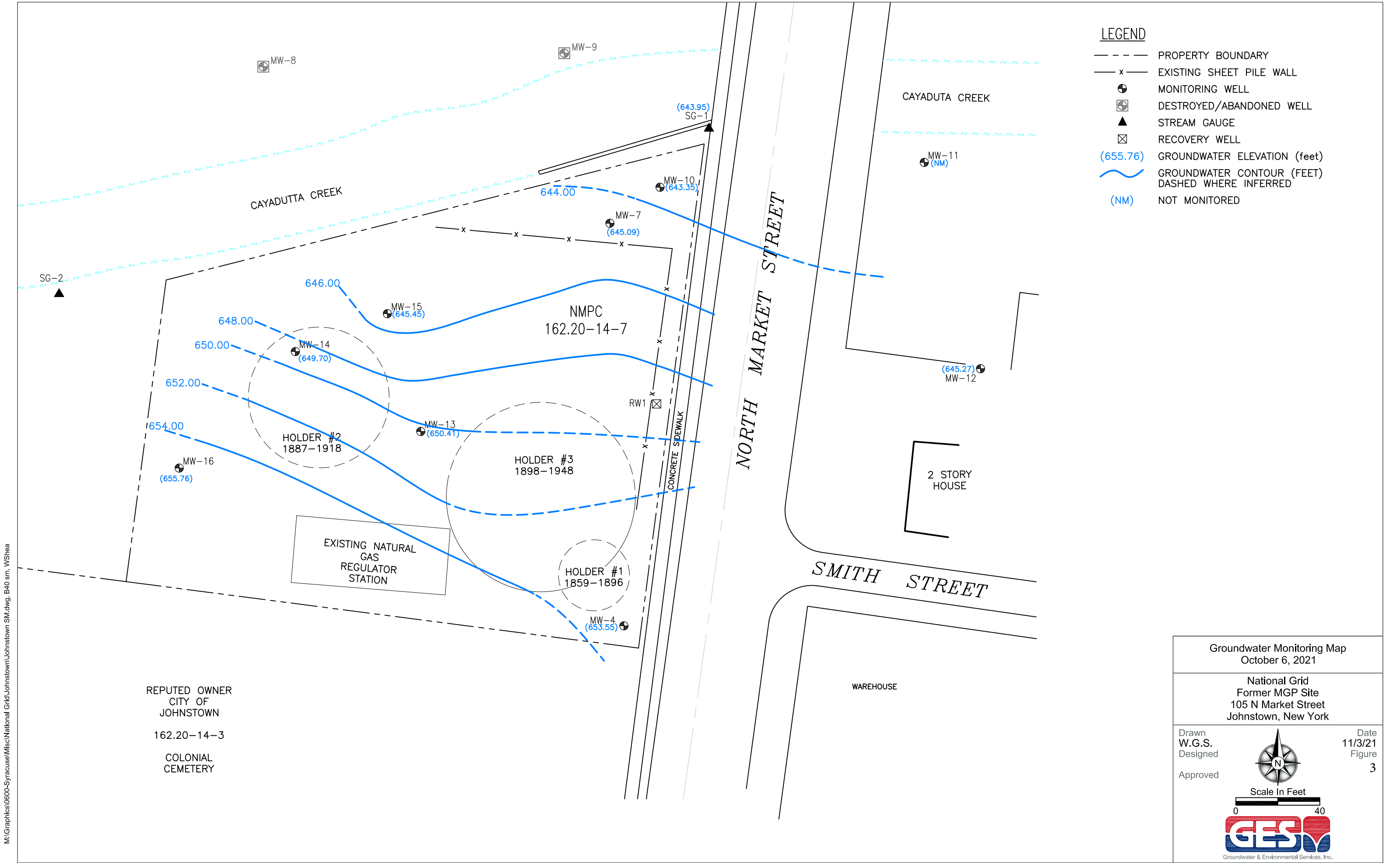


Groundwater & Environmental Services, Inc.

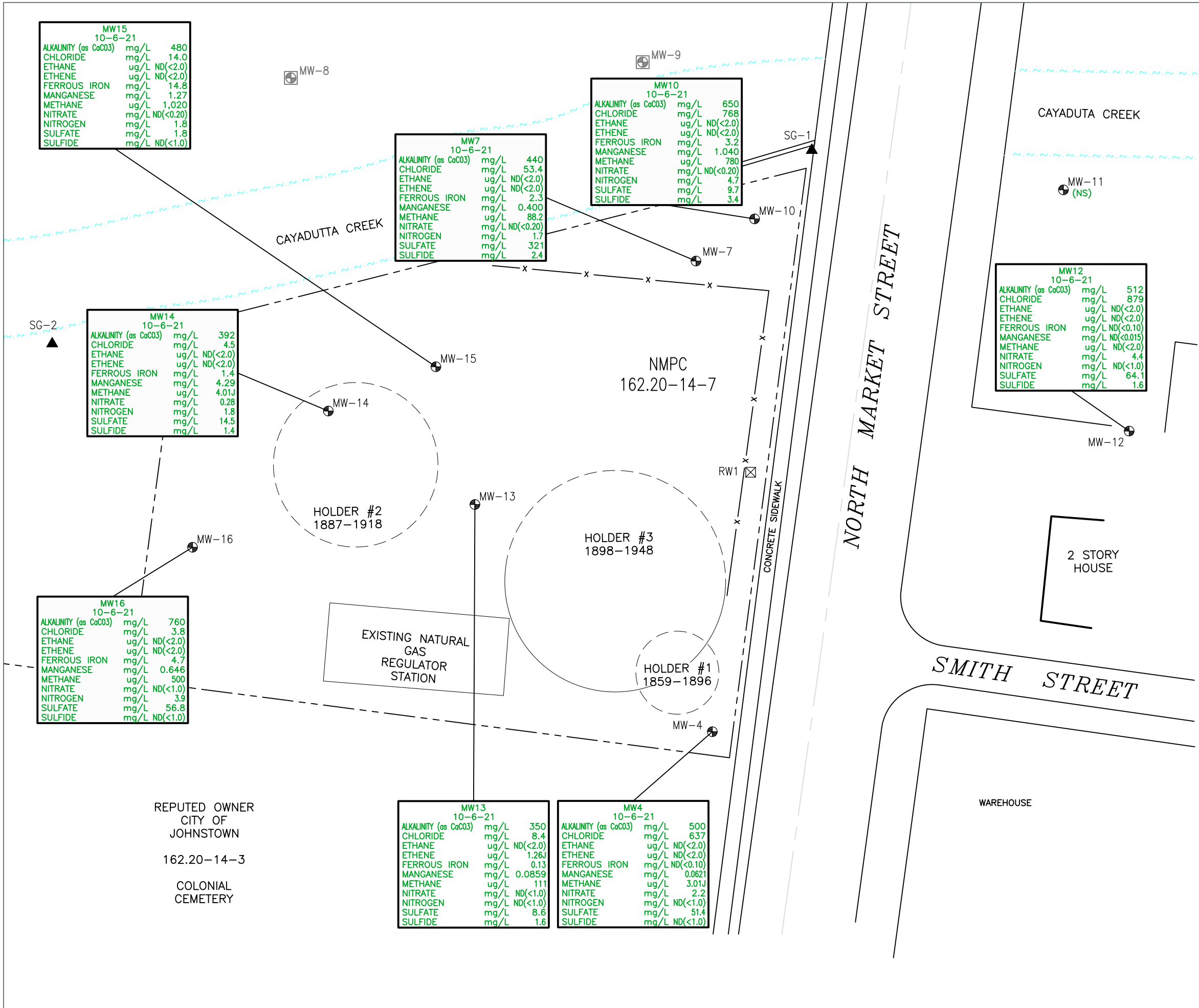
M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B40 sm, VShea



M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B40 sm, WShea



M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B40 sm, V\Shea



Natural Attenuation Map
October 6, 2021

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

Drawn
W.G.S.
Designed
Approved



Date
11/3/21
Figure
4

Scale In Feet
0 40



M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B40 sm, VShea



M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B40 sm, VShea





Tables



Table 3
Groundwater Analytical Data
MW-4

CONSTITUENT	UNITS	NYSDEC 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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21
BTEX Compounds																												
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)	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)	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)	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)	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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
PAHs																												
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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	0.21	ND (<0.096)	ND (<0.10)
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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
Benzo(b)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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
Benzo(k)fluoranthene	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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
Dibenz(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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
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)	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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	2.4	0.17	ND (<0.10)
Phenanthrene	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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
Pyrene	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)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.098)	ND (<0.096)	ND (<0.10)
Cyanide and Lead																												
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)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<20)
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)	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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21
MNA/WQ Parameters																											
Alkalinity (as CaCO3)	mg/L	385	420	R	R	405J	431J	R	405	354	442	398	400	384	412	394	414	392	418	424	424	452	410	360	390	388	500
Chloride	mg/L	354	269	265	385 B	288J	R	228	222	275	411	304	329	295	365	304	421	377	ND (<300)	233	308	360	269	296	200	315	637
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 (<0.10)	ND (<1.0)	0.036 J	ND (<1.00)	ND (<5.00)	ND (<5.00)	ND (<2.00)
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)	ND (<1.0)	ND (<1.0)	ND (<1.00)	ND (<5.00)	ND (<5.00)	ND (<2.00)
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)	ND (<0.10)	ND (<0.10)	ND (<0.10)	0.10	ND (<0.10)	ND (<0.10)
Manganese	mg/L	NA	ND (<10)	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	0.0091	0.0053	ND (<0.005)	ND (<0.005)	ND (<0.005)	0.0065	ND (<0.005)	0.0318	ND (<0.005)	0.0641	ND (<0.005)	0.0621
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)	0.30J	0.47J	0.27J	0.29J	ND (<0.30)	ND (<2.5)	ND (<2.5)	ND (<1.00)	ND (<5.00)	ND (<5.00)	3.01 J
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	3.9	2.7	2.8	2.2	3.9	2.2
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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
Sulfate	mg/L	NA	49.2	46.7	74.2 B	R	R	58.6	62.2	64.7	74.7	70.7	50.6	60	80	75.9	60.9	23.0	46.7	50.0	ND (<50.0)	35.9	42.1	23.7	37.0	35.9	51.4
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)	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

CONSTITUENT	UNITS	NYSED 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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21
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)	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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
m-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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
p-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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
PAHs																												
Acenaphthene	µg/L	20	0.075J	ND (<1.0)	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 (<0.48)	ND (<0.48)	ND (<0.48)	0.10	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	ND (<0.097)	ND (<0.10)	0.13	ND (<0.096)	ND (<0.11)
Acenaphthylene	µg/L	NC	0.15	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 (<0.48)	ND (<0.48)	ND (<0.48)	0.25	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	0.10	ND (<0.10)	0.17	0.11	ND (<0.11)
Acenaphthene	µg/L	20	ND (<0.19)	ND (<0.19)	ND (<0.50)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	ND (<0.097)	ND (<0.10)	0.12	ND (<0.096)	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 (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	ND (<0.097)	ND (<0.10)	0.17	ND (<0.096)	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 (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	ND (<0.097)	ND (<0.10)	0.11	ND (<0.096)	ND (<0.11)
Benzo(b)fluoranthene	µg/L	0.001	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 (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	ND (<0.097)	ND (<0.10)	0.12	ND (<0.096)	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 (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.099)	ND (<0.096)	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 (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.099)	ND (<0.096)	ND (<0.11)
Benzo(a)fluoranthene	µg/L	0.001	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 (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.099)	ND (<0.096)	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 (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.099)	ND (<0.096)	ND (<0.11)
Fluorene	µg/L	0.002	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 (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	0.16	ND (<0.10)	0.29	ND (<0.096)	ND (<0.11)
Indene(1,2,3-cd)pyrene	µg/L	0.001	ND (<0.19)	0.057J	ND (<0.50)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.099)	ND (<0.096)	ND (<0.11)
Indene(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 (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	ND (<0.097)	ND (<0.10)	ND (<0.099)	ND (<0.096)	ND (<0.11)
Naphthalene	µg/L	10	0.43	ND (<1.0)	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 (<0.48)	ND (<0.48)	5.2	ND (<0.49)	3.0	ND (<0.97)	ND (<0.98)	ND (<0.98)	ND (<0.11)	ND (<0.11)	ND (<0.97)	ND (<0.10)	0.83	ND (<0.96)	ND (<0.11)
Anthracene	µg/L	10	ND (<0.19)	ND (<0.19)	ND (<0.50)	ND (<0.48)	ND (<0.48)	0.19J	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.098)	ND (<0.11)	ND (<0.11)	ND (<0.097)	ND (<0.10)	0.75	ND (<0.096)	ND (<0.11)	
Pyrene	µg/L	50	ND (<0.19)	0.038J	ND (<0.50)	ND (<0.48)	ND (<0.48)	0.35J	0.069J	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.49)	ND (<0.49)	ND (<0.10)	ND (<0.097)	ND (<0.097)	ND (<0.098)	ND (<0.11)	ND (<0.11)	0.26	ND (<0.10)	0.43	ND (<0.096)	ND (<0.11)
Cyanide and Lead																												
Cyanide	mg/L	25	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.3)	19	12	3.2J	19	33	7.4	0.16	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)	ND (<0.010)
Cyanide	mg/L	0.2	0.33J	0.21J	NC	0.68J	0.996	NC	0.22	8.9	1.4	0.1	0.13	0.18	0.18	0.18	0.15	0.18	0.16	0.14	0.17	0.129	0.17	ND (<0.010)	0.35	0.11	0.13	

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
F	• MS and/or MS/MS Recovery outside acceptance limits.
F2	• MS/MSD PPO above control limits.
F3	• Estimated Concentration Value
mg/L	• Milligrams per Liter
NC	• No Criteria
ND (#)	• Not detected above laboratory reporting limit (indicated by #)
NS	• Not Sampled
NYSDDEC	• New York State Department of Environmental Conservation
PAHs	• Polycyclic Aromatic Hydrocarbons
P	• Polydisperse
ug/L	• Micrograms per Liter
Bolded	• values indicated exceedance of the NYSDDEC 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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21
MNA/WQ Parameters																											
Alkalinity (as CaCO3)	mg/L	321	330J	R	R	327J	370J	R	310	324	367	375	392	340	403	395	406	412	380	390	440	370	400	446	430	422	440
Chloride	mg/L	108	104	122	93.6 B	111J	R	91.2	101	114	84	79	62.6	67.7	66.7	66.2	79.4	68.9	64.6	63.6	59.4	63.9	50.9	58.1	56.5	62.6	53.4
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	0.66J	0.20J	0.32J	0.18J	0.13 J	ND (<1.0)	ND (<1.00)	ND (<5.00)	ND (<5.00)	ND (<2.00)
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)	ND (<1.0)	ND (<1.0)	ND (<1.00)	ND (<5.00)	ND (<5.00)	ND (<2.00)
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	6.24	ND (<0.1)	ND (<0.1)	ND (<0.1)	0.14	0.59	3.7	3.3	2.8	3.2	2.6	2.1	4.3	2.9	0.66	2.3
Manganese	mg/L	NA	0.54	0.67	0.62	0.86	0.94	0.51	0.96	1.1	0.564	0.49	0.49	0.46	0.53	0.43	0.478	0.476	0.476	0.459	0.487	0.395	0.513	0.420	0.440	0.400	
Methane	µg/L	290J	510	190	210	190	300	210	240	40	23	150	93	35	96	17	160	240	120	170	150	140	160	111	30.3	ND (<5.00)	88.2
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)	ND (<0.05)	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<0.10)	ND (<0.20)
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	1.6	0.11	1.6	ND (<0.10)	1.7	1.7
Sulfate	mg/L	NA	376	745 B	611 B	R	R	674 B	509	654	516	540	457	442	533	364	476	396	394	389	331	334	259	307	268	280	321
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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	2.4

B
D
J
mg/L
MNA
NA
ND (<#)
NS
R
µg/L
WQ

= Present in Associated Blank Sample
= Diluted Sample
= Estimated Concentration
= Milligrams per Liter
= Monitored Natural Attenuation
= Not Analyzed
= Not detected above laboratory reporting limit (indicated by #)
= Not Sampled
= Rejected
= Micrograms per Liter
= Water Quality

Table 3
Groundwater Analytical Data
MW-10

CONSTITUENT	UNITS	NYSDEC 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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21
BTEX Compounds																												
Benzene	µg/L	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	7.1	1.3	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	2.3	ND (<1.0)	ND (<1.0)	1.9	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)	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)
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)	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)	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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
PAHs																												
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	1.4	1.8	0.52	1.9	2.0	1.6
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	0.22	0.27	ND (<0.099)	0.43	0.38	0.27
Anthracene	µg/L	50	0.061J	0.047J	ND (<0.47)	ND (<0.47)	0.28J	ND (<0.47)	0.28J	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)	ND (<0.11)	ND (<0.096)	ND (<0.095)	0.14	0.14	ND (<0.11)
Benzo(a)anthracene	µg/L	0.002	0.13J	0.057J	ND (<0.47)	ND (<0.47)	1	ND (<0.47)	0.49 B	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.10)	0.11	ND (<0.099)	ND (<0.10)	ND (<0.11)	0.13	0.16	ND (<0.095)	0.63	0.61	0.16
Benzo(a)pyrene	µg/L	0.002	0.14J	0.057J	ND (<0.47)	ND (<0.47)	0.81	ND (<0.47)	0.19J	ND (<0.48)	0.55	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.10)	0.10	ND (<0.099)	ND (<0.10)	ND (<0.11)	0.12	0.15	ND (<0.095)	0.56	0.67	0.16
Benzo(b)fluoranthene	µg/L	0.002	0.071J	0.047J	ND (<0.47)	ND (<0.47)	0.8	ND (<0.47)	0.24J	ND (<0.48)	0.86	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.10)	0.17	ND (<0.099)	ND (<0.10)	ND (<0.11)	0.13	0.16	ND (<0.095)	0.46	0.89	0.23
Benzo(g,h)perylene	µg/L	NC	0.051J	ND (<0.19)	ND (<0.47)	ND (<0.47)	0.37J	ND (<0.47)	0.05J	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.10)	ND (<0.097)	ND (<0.099)	ND (<0.10)	ND (<0.11)	ND (<0.11)	ND (<0.096)	ND (<0.095)	0.24	0.32	ND (<0.11)
Benzo(k)fluoranthene	µg/L	0.002	0.092J	0.047J	ND (<0.47)	ND (<0.47)	0.53	ND (<0.47)	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)	0.15	ND (<0.099)	ND (<0.10)	ND (<0.11)	ND (<0.11)	ND (<0.096)	ND (<0.095)	0.25	0.55	0.19
Chrysene	µg/L	0.002	0.12J	0.047J	ND (<0.47)	ND (<0.47)	0.91	ND (<0.47)	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 (<0.50)	ND (<0.10)	0.099	ND (<0.099)	ND (<0.10)	ND (<0.11)	ND (<0.11)	0.12	ND (<0.095)	0.53	0.81	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)	ND (<0.11)	ND (<0.096)	ND (<0.095)	ND (<0.099)	0.11	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 (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	0.10	0.16	ND (<0.099)	ND (<0.10)	ND (<0.11)	0.18	0.22	ND (<0.095)	0.78	0.78	0.18
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 (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.10)	ND (<0.097)	ND (<0.099)	ND (<0.10)	ND (<0.11)	ND (<0.11)	ND (<0.096)	ND (<0.095)	0.21	ND (<0.096)	ND (<0.11)
Indeno(1,2,3-cd)pyrene	µg/L	0.002	0.051J	ND (<0.19)	ND (<0.47)	ND (<0.47)	0.34J	ND (<0.47)	0.076J	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.48)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.10)	ND (<0.097)	ND (<0.099)	ND (<0.10)	ND (<0.11)	ND (<0.11)	ND (<0.096)	ND (<0.095)	0.23	0.30	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)	ND (<0.11)	ND (<0.096)	ND (<0.095)	0.49	ND (<0.096)	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 (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.10)	ND (<0.097)	ND (<0.099)	ND (<0.10)	ND (<0.11)	ND (<0.11)	ND (<0.096)	ND (<0.095)	0.18	0.20	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 (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	0.15	0.20	ND (<0.099)	ND (<0.10)	0.13	0.22	0.27	ND (<0.095)	0.97	0.90	0.26
Cyanide and Lead																												
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)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	8.0	ND (<20)
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	0.114	0.093	0.097	0.10	0.060	0.066

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
µg/L = Micrograms 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-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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21
MNA/MQ Parameters																											
Alkalinity (as CaCO3)	mg/L	556	536J	R	R	523J	541J	R	589	584	552	566	548	512	581	586	660	628	616	606	650	550	640	624	502	524	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	440	566	314	472	945	768
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)	0.161	0.33J	0.20J	0.24J	0.42J	0.29 J	0.34 J	ND (<1.00)	ND (<5.00)	ND (<2.0)	
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 (<7.0)	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)	ND (<1.0)	ND (<1.0)	ND (<1.00)	ND (<5.00)	ND (<2.0)	
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)	0.11	1.0	4.2	4.7	3.2	4.8	2.6	2.2	5.3	1.2	1.1	3.2	
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	0.862	0.994	0.946	1.15	0.953	0.771	1.09	1.040
Methane	µg/L	64J	75	34	9.8	33	85	40	72	32	28	110	130	83	62	56	420	300	330	470	680	460	1300	390	451	ND (<5.00)	780
Nitrate	mg/L	NA	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)	ND (<0.05)	0.11	ND (<0.05)	0.12	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<0.50)	ND (<0.20)	
Nitrogen	mg/L	0.02	4.91	8.5	4.9	4.9	R	5.4	5.7	6.1	4.1	4.8	8.2	5.6	6.3	4	6.5	5.1	3.8	3.3	4.5	4	ND (<1.0)	2.5	1.0	4.0	4.7
Sulfide	mg/L	NA	197	306	296 B	R	R	238 B	175	174	171	153	88.7	167	53.9	44.4	56.6	148	38.2	ND (<100)	23.0	59.4	20.9	55.2	23.9	7.8	9.7
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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	3.4

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

MW-11

Cyanide and Lead

= 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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21
MNA/WQ Parameters																											
Alkalinity (as CaCO ₃)	mg/L	502	504	R	R	518J	536J	R	623	507	573	465	457	428	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chloride	mg/L	612	606	345	414 B	514J	R	321	390	202	295	454	364	314	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ethane	µg/L	ND (<1.0)	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)	NS	NS	NS	NS	NS	NS	NS	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 (<15)	ND (<15)	ND (<350)	ND (<350)	ND (<350)	ND (<350)	ND (<7.0)	ND (<7.0)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ferrous Iron	mg/L	ND (<0.2)	ND (<0.5)	R	9.4J	0.8J	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	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	NS	NS	NS	NS	NS	NS
Methane	µg/L	730J	420	4.8	68	190	350	160	320	12	25	120	180	13	NS	NS	NS	NS	NS	NS	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	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	NS	NS	NS	NS	NS	NS
Sulfate	mg/L	NA	48.3	128 B	65.1 B	R	R	8.5 B	16.9	112	94.1	59	44.3	62.9	NS	NS	NS	NS	NS	NS	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	NS	NS	NS	NS	NS	NS

B
D
J
mg/L
MNA
NA
ND (<#)
NS
R
µg/L
WQ

= Present in Associated Blank Sample
= Diluted Sample
= Estimated Concentration
= Milligrams per Liter
= Monitored Natural Attenuation
= Not Analyzed
= Not detected above laboratory reporting limit (indicated by #)
= Not Sampled
= Rejected
= Micrograms per Liter
= Water Quality



Table 3
Groundwater Analytical Data
MW-12

CONSTITUENT	UNITS	NYSDEC 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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21	
BTEX Compounds																										
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)	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)	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)	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)	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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	
PAHs																										
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)	ND (<0.11)	ND (<0.097)	ND (<0.11)	ND (<0.097)	ND (<0.096)	ND (<0.11)	
Acenaphthylene	µg/L	NC	0.09J	ND (<0.49)	0.25J	0.18J	100	ND (<0.2)	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	ND (<0.11)	1.0	0.1	0.61	0.41	0.14	
Anthracene	µg/L	50	0.07J	ND (<0.49)	0.21J	0.13J	2.6	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)	ND (<0.11)	0.099	ND (<0.11)	ND (<0.097)	ND (<0.096)	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)	ND (<0.11)	0.24	0.34	ND (<0.097)	ND (<0.096)	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)	ND (<0.11)	0.3	0.41	ND (<0.097)	ND (<0.096)	ND (<0.11)	
Benzo(b)fluoranthene	µg/L	0.002	0.08J	ND (<0.49)	0.36	0.21J	1.3	0.91	3.4	0.71	2.1	ND (<0.49)	ND (<0.47)	ND (<0.51)	2.3	0.13	0.18	ND (<0.099)	ND (<0.11)	ND (<0.11)	0.24	0.34	ND (<0.097)	ND (<0.096)	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)	ND (<0.11)	0.15	0.21	ND (<0.097)	ND (<0.096)	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)	ND (<0.11)	ND (<0.097)	ND (<0.11)	ND (<0.097)	ND (<0.096)	ND (<0.11)	
Chrysene	µg/L	0.002	0.13J	ND (<0.49)	0.55 B	0.66 B	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)	ND (<0.11)	0.18	0.22	ND (<0.097)	ND (<0.096)	ND (<0.11)		
Dibenz(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)	ND (<0.11)	ND (<0.097)	ND (<0.11)	ND (<0.097)	ND (<0.096)	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)	ND (<0.11)	0.33	0.43	ND (<0.097)	ND (<0.096)	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	ND (<0.11)	ND (<0.097)	ND (<0.11)	0.12	ND (<0.096)	ND (<0.11)	
Indeno(1,2,3-cd)pyrene	µg/L	0.002	0.06J	ND (<0.49)	ND (<0.49)	0.53J	0.97	ND (<0.49)	1.2	ND (<0.49)	0.81	ND (<0.47)	ND (<0.51)	1.2	ND (<0.097)	ND (<0.10)	ND (<0.099)	ND (<0.11)	ND (<0.11)	0.11	0.17	ND (<0.097)	ND (<0.096)	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)	1.8	ND (<0.49)	1.9	ND (<0.51)	0.96	ND (<0.097)	0.15	ND (<0.099)	ND (<0.11)	ND (<0.11)	1.8	ND (<0.11)	0.97	ND (<0.096)	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)	ND (<0.11)	0.23	0.34	0.14	ND (<0.096)	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)	ND (<0.11)	0.49	0.61	ND (<0.097)	ND (<0.096)	ND (<0.11)	
Cyanide and Lead																										
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 (<5.0)	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 (<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)	ND (<0.010)	0.011	0.011	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-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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21
MNA/WQ Parameters																								
Alkalinity (as CaCO ₃)	mg/L	502	455J	478J	R	434	391	415	329	414	368	401	415	436	466	366	456	430	416	400	380	360	430	512
Chloride	mg/L	488	165J	R	129 B	468	123	662	150	493	139	591	276	556	152	587	345	757	334	490	267	633	391	879
Ethene	µg/L	ND (<1.0)	ND (<1.5)	ND (<1.5)	ND (<1.5)	ND (<7.0)	ND (<7.5)	ND (<7.5)	ND (<7.5)	ND (<7.5)	ND (<7.0)	ND (<7.0)	ND (<7.5)	0.47J	ND (<0.025)	ND (<0.030)	ND (<0.030)	ND (<0.16)	ND (<1.0)	ND (<1.0)	ND (<1.00)	ND (<5.00)	ND (<5.00)	ND (<2.0)
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)	ND (<1.0)	ND (<1.0)	ND (<1.00)	ND (<5.00)	ND (<5.00)	ND (<2.0)
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)	ND (<0.10)	ND (<0.10)	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	0.0152	0.0153	0.0636	0.0396	0.0074	ND (<0.005)	ND (<0.015)
Methane	µg/L	ND (<2.0)	ND (<1.0)	1.1	0.56J	47	ND (<1.0)	ND (<1.0)	ND (<4.0)	ND (<4.0)	ND (<4.0)	ND (<4.0)	ND (<4.0)	1.95	0.24J	0.27J	1.0J	0.35J	ND (<2.5)	ND (<2.5)	ND (<5.10)	ND (<5.00)	ND (<5.00)	ND (<2.0)
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	4.3	ND (<0.10)	5.9	2.5	3	4.4
Nitrogen	mg/L	0.48	ND (<0.2)	R	0.16J	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	ND (<1.0)	3.9	ND (<0.10)	ND (<1.0)	ND (<1.0)	ND (<1.0)
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	53.9	55.1	77.2	48.3	65.9	64.1
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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	1.6

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 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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21	
BTEX Compounds																													
Benzene	µg/L	1	430	360	71	200	89	300	370	360	480	480	200	300	17	360	360	348	15.5	363	11.6	32.8	16.9	328	126	268	11.7	187	
Ethylbenzene	µg/L	5	850	730	87	200	110	520	570	490	600	320	200	340	17	190	270	266	7.4	210	4.5	23.3	12.4	330	85.6	193	4.5	164	
m,p-Xylene	µg/L	5	920	810	110	240	140	550	740	590	730	420	250	480	24	270	360	467	12.1	267	8.6	34.8	16.6	229	89.5	179	8.7	152	
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	9.7	112	48.6	90.7	5.5	74.2	
Toluene	µg/L	5	800	660	89	260	89	550	740	520 E	710	440	270	430	17	320	410	552	7.6	332	3.0	25.1	11.1	288	96.7	278	5.8	158	
PAHs																													
Acenaphthene	µg/L	20	120	140	17	46	60	76	76	82J	170	130	77	71	130	ND (<4.9)	65 E	130	225	0.34	78.4	0.16	4.3	6.8	141	4.6	124	0.35	106
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	6.7	57.0	0.78	43.4	0.89	10.5	
Anthracene	µg/L	50	12	15	3.6	12 B	15	15	15	ND (<97)	ND (<47)	ND (<47)	ND (<47)	6.8	14	ND (<4.9)	9.2 F1 F2	10	19.2	0.55	7.2	0.25	0.73	0.82	7.3	0.15	5.1	0.33	6.1
Benzo(a)anthracene	µg/L	0.002	1.8J	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	0.14	0.79	0.18	0.51	0.38	0.98	
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	ND (<0.10)	0.55	0.20	0.31	0.82	0.97	
Benzo(b)fluoranthene	µg/L	0.002	0.75J	0.78J	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)	4.5	1.2	1.6	0.47	0.22	0.12	0.48	0.17	0.27	0.83	0.97	
Benzo(g,h,i)perylene	µg/L	NC	0.75J	ND (<3.9)	2.5 B	ND (<10)	3.8	ND (<97)	ND (<47)	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)	ND (<0.10)	0.23	ND (<0.10)	0.13	0.45	0.42	
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	0.11	0.21	ND (<0.10)	0.11	0.79	0.94	
Chrysene	µg/L	0.002	1.7J	1.4J	0.26J	3.5 B	5.5J	4.9 B	ND (<97)	ND (<47)	ND (<47)	ND (<47)	ND (<47)	1.8	ND (<0.001)	0.59 F1 F2	ND (<9.7)	6.1	0.81	1.3	0.22	0.20	ND (<0.10)	0.64	0.13	0.38	0.34	0.42	
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 (<0.10)	ND (<0.098)	ND (<0.10)	ND (<0.098)	0.11	ND (<0.11)		
Fluoranthene	µg/L	50	7.7	8.4	2.6	12 B	16	14	ND (<97)	ND (<47)	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	0.66	4.6	1.3	4.0	0.58	4.4
Fluorene	µg/L	50	78	84	18	48	52J	53	37J	116	88	68	30	94J	ND (<4.9)	43 F1 F2	55	74.8	0.46	37.9	0.19	2.8	3.7	45.7	0.16	33.2	0.27	42.5	
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)	0.46	ND (<0.001)	ND (<0.49)	ND (<9.7)	2.7	0.46	ND (<0.98)	0.17	ND (<0.099)	ND (<0.10)	0.19	ND (<0.10)	0.11	0.34	0.34	
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	0.14	9.700	0.19	2.190	0.76	1.6	
Phenanthrene	µg/L	50	58	68	7.2	44 B	66	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	2.40	38.8	0.14	31	0.76	24.0	
Pyrene	µg/L	50	5.8J	8.6	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	0.63	4.8	0.86	4.1	0.71	4.6	
Cyanide and Lead																													
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)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<20)	
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	0.09	0.16	0.11	0.16	0.050	0.095	

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-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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21	
MNA/WQ Parameters																											
Alkalinity (as CaCO3)	mg/L	80	96.4	R	R	455J	165J	R	158	218	187	176	255	283 F1	311	364	234	308	226	280	230	380	268	320	232	350	
Chloride	mg/L	12.3	10.5	29.1	18.6 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	8.4	19.5	9.3	6.9	11.8	8.4	
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	0.11 J	0.74 J	ND (<1.00)	ND (<5.0)	ND (<5.00)	ND (<2.0)	
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 (<7.0)	3.3	ND (<0.035)	2.3	ND (<0.10)	0.46J	0.19 J	2.1	ND (<1.00)	2.34 J	ND (<5.00)	1.25 J	
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 (<0.1)	0.18	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<0.10)	0.15	ND (<0.10)	ND (<0.10)	0.13		
Manganese	mg/L	NA	0.84	0.12	0.077	0.83	0.16	0.096	0.062	0.11	0.088	0.14	0.031	0.064	ND (<7.5)	0.0938	0.0417	0.0705	0.0570	0.0619	0.0298	0.0710	0.0446	0.0709	0.0601	0.0859	
Methane	µg/L	77J	110 D	32	66	28J	72	66	120	36	15	74	ND (<4.0)	110	50	280	0.34J	190	12	73	41	250	84.7	218	ND (<5.00)	111	
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)	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<1.0)	ND (<1.0)	ND (<0.50)	ND (<1.0)
Nitrogen	mg/L	2.27	1.89	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	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<1.0)	2.3	ND (<1.0)	
Sulfate	mg/L	NA	88.8	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	18.0	42.3	20.4	28.6	26.1	23.4	10.8	17.3	32.1	8.5	
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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	1.8	

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

Cyanide and Lead

AWQS = Ambient Water Quality Standards
B = Present in Associated Blank Sample
BTEX = Benzene, Ethylbenzene, Toluene

D = Diluted Sample
E = Result exceeded calibration range
F1 = MS and/or MSD Recovery outside acceptance limits.

F2 = MS/MSD RPD above control line
I = 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 except



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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21
MNA/WQ Parameters																										
Alkalinity (as CaCO3)	mg/L	528	450	R	R	410	453J	R	494	417	456	483	372	445	507	520	360	404	392	450	384	380	342	400	364	392
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	3.5	ND (<3.0)	ND (<3.0)	6.7	6.9	4.5
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)	ND (<1.0)	ND (<1.0)	1.57	ND (<5.00)	ND (<5.00)	ND (<2.0)
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 (<0.035)	ND (<0.035)	ND (<0.10)	ND (<0.032)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.00)	ND (<5.00)	ND (<5.00)	ND (<2.0)
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	0.39	0.12	1.90	2.1	0.44	1.4
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)	0.788	0.0262	0.416	0.201	0.0121	0.0208	0.051	3.79	0.940	0.268	4.29
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	ND (<2.5)	19	1,020	ND (<5.00)	6.54	4.01 J
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	0.4	ND (<1.0)	ND (<1.0)	ND (<0.50)	0.6	0.28
Nitrogen	mg/L	0.81	0.77	0.85	0.32	0.36	R	0.86	2.5	0.54	0.66	1.5	0.22	0.72	1	1.2	ND (<1.0)	ND (<1.0)	1.0	ND (<1.0)	ND (<1.0)	ND (<1.0)	4.2	8.6	1.0	1.8
Sulfate	mg/L	NA	53.3	ND (<5.0)	19.6 B	6.6JB	R	173 B	639	ND (<5.0)	ND (<5.0)	365	ND (<5.0)	ND (<5.0)	324	153	12.5	32.4	15.2	20.3	ND (<10)	17.7	11.2	102.0	15.1	14.5
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)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	1.4

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 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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21
BTEX Compounds																												
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	41.2	364	55.8	271	92.7	18.7
Ethylbenzene	µg/L	5	200	250	190 D	210 D	120	190 D	220	200	75	50	38	74	1.9	92	110	244	24.5	124	10.2	45.2	15.7	155	19.4	99.9	31.0	7.8
m,p-Xylene	µg/L	5	12	8.7	17	19	18J	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)	2.9	ND (<2.0)	17.5	ND (<2.0)	12.3	ND (<2.0)	3.4
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	8.1	28.2	4.6	23	4.2	15.4
Toluene	µg/L	5	3.6J	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	1.3	8.5	1.4	6.9	ND (<1.0)	1.1
PAHs																												
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	12.6	28.4	4.7	17.2	28.3	40.3
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	1.6	1.9	0.66	1.2	2.6	3.7
Anthracene	µg/L	50	2.7	3.3	2.1	1.3 B	2.4	2	1.5J	2.8	2.6	1.4	0.96	0.61	ND (<0.49)	0.57	ND (<5.1)	1.9	0.36	0.56	0.31	0.55	0.46	0.74	0.25	0.52	0.35	0.82
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)	0.44	0.13	0.55	0.14	ND (<0.099)	0.14	0.14	0.16	0.20	0.16	0.37
Benzo(a)pyrene	µg/L	0.000	2.1J	0.76J	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)	0.12	ND (<0.097)	0.16	0.20	0.13	0.37
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	0.19	ND (<0.099)	0.17	0.11	0.16	0.21	0.16	0.48
Benzo(g,h,i)perylene	µg/L	NC	1.2J	0.35J	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 (<0.48)	ND (<0.49)	ND (<0.47)	ND (<5.1)	ND (<0.10)	ND (<0.098)	0.4	ND (<0.099)	ND (<0.099)	ND (<0.10)	ND (<0.097)	0.11	0.12	ND (<0.096)	0.21	
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)	0.15	0.16	ND (<0.10)	ND (<0.097)	0.15	0.41
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	0.89	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 (<0.10)	ND (<0.097)	ND (<0.10)	ND (<0.097)	ND (<0.098)	ND (<0.10)	
Dibenz(a,h)anthracene	µg/L	NC	0.9J	ND (<1.9)	ND (<0.49)	ND (<0.48)	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)	ND (<0.10)	ND (<0.097)	ND (<0.10)	ND (<0.097)	ND (<0.098)	ND (<0.10)	
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	0.6	0.89	0.41	0.68	0.52	0.76
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	3.4	6.6	1.4	4.0	4.4	3.3
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 (<0.48)	ND (<0.49)	ND (<0.47)	ND (<5.1)	ND (<0.10)	ND (<0.098)	0.31	ND (<0.099)	ND (<0.099)	ND (<0.10)	ND (<0.097)	ND (<0.10)	ND (<0.097)	ND (<0.096)	0.17	
Naphthalene	µg/L	10	110JD	89	560 D	450 D	570 D	140 D	51	27	94	19	29	210	1.5	48 E	110	363	34.1	69.3	16.8	138	43	512	1.1	272	16.0	152
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	1.8	3.7	0.82	2.1	1.2	2.7
Pyrene	µg/L	50	5.5J	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	0.73	1.0	0.54	0.83	0.71	1.0
Cyanide and Lead																												
Cyanide	mg/L	0.2	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)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<20)
Lead	µg/L	25	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	0.171	0.61	0.32	0.67	0.23	0.18

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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21
MNA/MQ Parameters																											
Alkalinity (as CaCO3)	mg/L	558	550	R	R	502J	547J	R	629	527	585	482	557	480	600	601	676	562	610	616	600	478	590	446	550	534	480
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	43.9	38	20.3	37.4	24.6	14.0
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)	8.2	3.2	5.1	2.8	2.1	3.4	5.1	ND (<1.00)	3.53 J	ND (<5.00)	ND (<2.0)
Ethene	µg/L	ND (<10)	ND (<10)	ND (<1.5)	ND (<300)	ND (<300)	ND (<300)	ND (<300)	ND (<380)	ND (<380)	ND (<380)	ND (<380)	ND (<380)	ND (<380)	ND (<75)	0.038 J	0.037 J	ND (<0.10)	ND (<0.10)	0.042 J	ND (<1.0)	ND (<1.0)	ND (<1.00)	ND (<5.00)	ND (<5.00)	ND (<2.0)	
Ferrous Iron	mg/L	0.15	1.36	R	0.51 J	0.47 J	0.13 J	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	2.5	3.2	4.2	6.0	8.7	14.8
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	0.775	0.952	0.312	0.685	0.894	1.27
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	3.100	1.400	3.600	416	2.400	346	1.020
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)	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<0.10)	ND (<0.20)	
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	1.4	3.1	1.9	2.0	2.2	1.8
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	25.1	65.9	31.9	71.0	46.8	1.8
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)	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

[illegible]



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	04/18/19	10/16/19	05/20/20	10/07/20	04/14/21	10/06/21
MNA/MQ Parameters																											
Alkalinity (as CaCO3)	mg/L	442	410	R	R	586J	600J	R	436	530	585	454	595	532	638	615	636	706	630	724	740	560	650	156	670	680	760
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	5.9	4.9	5.7	6.8	3.4	6.5	5.6	4.8	11.8	4.8	3.6	5.2	3.6	3.8
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	0.98J	0.92 J	1.1	ND (<1.00)	ND (<5.00)	ND (<5.00)	ND (<2.0)
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 (<70)	ND (<70)	ND (<75)	ND (<75)	0.24J	0.036J	0.16J	0.13J	0.17J	0.15 J	0.20 J	ND (<1.00)	ND (<5.00)	ND (<5.00)	ND (<2.0)
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	2.6	1.9	2.8	3.0	0.79	4.7
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	0.603	0.658	0.373	0.650	0.373	0.646
Methane	µg/L	210J	680 D	270	170	37	400 B	140	550	170	150	75	410	160	1100	110	900	190	780	820	830	860	1100	4.95 J	488	ND (<5.00)	500
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)	ND (<0.10)	ND (<0.10)	ND (<1.0)	ND (<1.0)	ND (<0.10)	ND (<1.0)
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	3.4	3.9	2	2.8	2.4	3.9
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	79.6	67.7	39	95.7	37.5	56.8
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)	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 2
Groundwater Level Measurements

Well ID	ELEVATION REFERENCE POINT	6/30/2010		9/29/2010		1/5/2011		4/8/2011		6/16/2011		10/13/2011		12/15/2011	
		Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (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
NRP = No Reference Point

Table 2
Groundwater Level Measurements

Well ID	ELEVATION REFERENCE POINT	3/15/2012		10/9/2012		4/18/2013		10/7/2013		4/9/2014		10/13/2014		4/16/2015	
		Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (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
NRP = No Reference Point

Table 2
Groundwater Level Measurements

Well ID	ELEVATION REFERENCE POINT	10/13/2015		4/6/2016		10/25/2016		4/26/2017		10/11/2017		4/26/2018		10/17/2018	
		Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (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
NRP = No Reference Point

Table 2
Groundwater Level Measurements

Well ID	ELEVATION REFERENCE POINT	4/18/2019		10/16/2019		5/20/2020		10/7/2020		4/14/2021		10/6/2021	
		Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)	Depth to Water (ft TOC)	GW Elevation (ft AMSL)
MW-4	676.54	22.60	653.94	23.47	653.07	22.11	654.43	24.21	652.33	23.46	653.08	22.99	653.55
MW-7	659.08	13.85	645.23	14.73	644.35	15.15	643.93	15.02	644.06	14.31	644.77	13.99	645.09
MW-10	657.59	14.50	643.09	15.02	642.57	15.02	642.57	15.15	642.44	14.77	642.82	14.24	643.35
MW-11	657.29	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-
MW-12	660.08	14.40	645.68	15.54	644.54	14.62	645.46	15.85	644.23	15.29	644.79	14.81	645.27
MW-13	664.89	13.07	651.82	14.74	650.15	15.42	649.47	16.05	648.84	14.02	650.87	14.48	650.41
MW-14	663.91	13.80	650.11	13.8	650.11	14.23	649.68	16.15	647.76	13.95	649.96	14.21	649.70
MW-15	661.85	15.60	646.25	17.05	644.80	16.52	645.33	17.69	644.16	16.61	645.24	16.40	645.45
MW-16	665.57	10.39	655.18	9.78	655.79	9.81	655.76	10.93	654.64	9.94	655.63	9.81	655.76
RW-1	-	15.22	NRP	13.00	NRP	11.40	NRP	13.83	NRP	12.72	NRP	11.49	NRP
GAUGE1	659.97	15.50	644.47	16.28	643.69	16.05	643.92	16.38	643.59	16.73	643.24	16.02	643.95

ft AMSL = Feet above mean sea level
ft TOC = Feet from top of inner casing
GW = Groundwater
NM = Not measured
NRP = No Reference Point



Appendix A – Field Data and Inspections

Site Management Plan Inspection Form
109 North Market Street
Former MGP Site
Johnstown, New York

Date: 7/23/2021
 Technician: PL/GE

Time: 10:00
 Weather: Sunny 70

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

Miscellaneous				
Evidence of Trespassing	YES	NO		COMMENTS:
Litter	NONE	MINOR	SIGNIFICANT	COMMENTS: picked up

General Comments:
 cleared the fenceline

Site Management Plan Inspection Form
109 North Market Street
Former MGP Site
Johnstown, New York

Date: 10/6/2021
 Technician: PL/GE

Time: 11:45
 Weather: Partly Cloudy 60

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

Miscellaneous				
Evidence of Trespassing	YES	NO		COMMENTS:
Litter	NONE	MINOR	SIGNIFICANT	COMMENTS: picked up

General Comments:

Well ID	Sample?	Well Size?	DTW	DTP	DTB	Comments
RW-1	No	4 2"	11.49	NP	21.50	
MW-4	Yes	2"	22.99	NP	27.32	
MW-7	Yes	2"	13.99	NP	22.10	
MW-10	Yes	2"	14.24	NP	22.05	
MW-11	No	2"	NA	NA	22.90	inaccessable- debris
MW-12	Yes	2"	14.81	NP	22.24	
MW-13	Yes	2"	14.48	NP	22.75	MS/MSD
MW-14	Yes	2"	14.21	NP	23.55	Field Duplicate
MW-15	Yes	2"	16.40	NP	23.00	
MW-16	Yes	2"	9.81	NP	19.45	
Gauge-1 (bridge)	No		16.02	NP	19.76	

DTW-depth to water

DTP-depth to product

DTB-depth to bottom

All from top of casing

Unable to access MW-11. Area is on adjacent property and was full of concrete/metal and wood debris.

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Peter Lyon
Job Number: 0603275-120950-221
Well Id. MW-7

Date: 10/6/21
Weather: 65° Sunny
Time In: 11:28 Time Out: 12:10

Well Information

		TOC	Other
Depth to Water:	(feet)	<u>13.99</u>	
Depth to Bottom:	(feet)	<u>22.10</u>	
Depth to Product:	(feet)	<u>-</u>	
Length of Water Column:	(feet)	<u>8.11</u>	
Volume of Water in Well:	(gal)	<u>1.29</u>	
Three Well Volumes:	(gal)	<u>3.89</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 ☐ Peristaltic ☐ Well Wizard Dedicated Pump ☒
Tubing/Bailer Material: Teflon ☐ Stainless St. ☐ Polyethylene ☒ other ☐
Sampling Method: Bailer ☐ Peristaltic ☐ Well Wizard Dedicated Pump ☒
Average Pumping Rate: (ml/min) 200
Duration of Pumping: (min) 30
Total Volume Removed: (gal) 2 Did well go dry? Yes ☐ No ☒

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				

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

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
<u>11:30</u>	<u>14.80</u>	<u>17.77</u>	<u>7.01</u>	<u>-139</u>	<u>0.003</u>	<u>137</u>	<u>7.76</u>	<u>.002</u>
<u>11:35</u>	<u>15.46</u>	<u>18.47</u>	<u>7.05</u>	<u>-127</u>	<u>1.28</u>	<u>120</u>	<u>1.45</u>	<u>.822</u>
<u>11:40</u>	<u>15.63</u>	<u>16.21</u>	<u>6.90</u>	<u>-138</u>	<u>1.29</u>	<u>72.8</u>	<u>1.19</u>	<u>.825</u>
<u>11:45</u>	<u>15.89</u>	<u>15.95</u>	<u>6.87</u>	<u>-141</u>	<u>1.28</u>	<u>60.5</u>	<u>0.71</u>	<u>.822</u>
<u>11:50</u>	<u>16.11</u>	<u>16.44</u>	<u>6.87</u>	<u>-143</u>	<u>1.29</u>	<u>39.4</u>	<u>0.61</u>	<u>.823</u>
<u>11:55</u>	<u>16.34</u>	<u>15.77</u>	<u>6.88</u>	<u>-145</u>	<u>1.29</u>	<u>19.4</u>	<u>0.57</u>	<u>.829</u>
<u>12:00</u>	<u>16.53</u>	<u>15.61</u>	<u>6.90</u>	<u>-147</u>	<u>1.30</u>	<u>10.4</u>	<u>0.52</u>	<u>.833</u>

Sampling Information:

Quantity	Size	Material	Preservative	Compounds analyzed	Method
2	100 mL	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/ Ethene/CO2	RSK-175

Sample ID: MW-7-1021
Sample Time: 12:00

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:

Peter Lyon

Job Number: 0603275-120950-221

Well Id. MW-10

Date:

10/6/21

Weather:

65° Cloudy

Time In:

1039

Time Out:

1125

Well Information

		TOC	Other
Depth to Water:	(feet)	14.24	
Depth to Bottom:	(feet)	22.05	
Depth to Product:	(feet)	-	
Length of Water Column:	(feet)	2.81	
Volume of Water in Well:	(gal)	1.24	
Three Well Volumes:	(gal)	3.74	

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:

Tubing/Bailer Material:

Sampling Method:

Average Pumping Rate: (ml/min)

200

Duration of Pumping: (min)

30

Total Volume Removed: (gal)

2

Bailer

Peristaltic

Teflon

Stainless St.

Bailer

Peristaltic

Well Wizard Dedicated Pump

Polyethylene

Well Wizard Dedicated Pump

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

Did well go dry?

Yes ☐ No ☒

Horiba U-52 Water Quality Meter Used?

Yes ☒ No ☐

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1040	14.64	15.57	7.88	-72	2.24	47.5	4.11	1.43
1045	14.82	15.32	7.93	-90	2.32	32.3	4.19	1.49
1050	15.14	15.34	8.04	-123	2.50	30.1	1.85	1.60
1055	15.49	15.22	8.19	-131	2.56	23.1	0.87	1.64
1100	15.73	15.05	8.24	-137	2.60	21.2	0.67	1.67
1105	15.95	15.05	8.31	-145	2.62	20.8	0.60	1.68
1110	16.08	15.35	8.42	-153	2.63	18.3	0.59	1.68

Sampling Information:

Quantity	Size	Material	Preservative	Compounds analyzed	Method
2	100 mL	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/ Ethene/CO2	RSK-175

Sample ID: MW-10-1021

Sample Time: 1110

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: G. Ernst

Job Number: 0603275-120950-221

Well Id. **MW-12**Date: 10/6/21Weather: cloudy 60°STime In: 0930Time Out: 10:40

Well Information

		TOC	Other
Depth to Water:	(feet)	<u>14.81</u>	
Depth to Bottom:	(feet)	<u>22.24</u>	
Depth to Product:	(feet)	<u>—</u>	
Length of Water Column:	(feet)	<u>7.43</u>	
Volume of Water in Well:	(gal)		
Three Well Volumes:	(gal)		

Well Type:

Flushmount ☒Stick-Up ☐

Well Locked:

Yes ☐No ☐

Measuring Point Marked:

Yes ☐No ☐

Well Material:

PVC ☒SS ☐Other: ☐

Well Diameter:

1" ☐2" ☒Other: ☐

Comments:

Purging Information

Purging Method:

Bailer ☐Peristaltic ☐Well Wizard Dedicated Pump ☒

Tubing/Bailer Material:

Teflon ☐Stainless St. ☐Polyethylene ☒other ☐

Sampling Method:

Bailer ☐Peristaltic ☐Well Wizard Dedicated Pump ☒Average Pumping Rate: (ml/min) 200Duration of Pumping: (min) 30Total Volume Removed: (gal) —

Did well go dry?

Yes ☐ No ☐

Horiba U-52 Water Quality Meter Used?

Yes ☒ No ☐

Conversion Factors

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

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
<u>0945</u>	<u>14.81</u>	<u>11.91</u>	<u>6.39</u>	<u>175</u>	<u>2.01</u>	<u>99.2</u>	<u>9.76</u>	<u>1.30</u>
<u>0950</u>	<u>14.81</u>	<u>10.74</u>	<u>6.39</u>	<u>175</u>	<u>2.80</u>	<u>56.3</u>	<u>5.90</u>	<u>1.81</u>
<u>0955</u>	<u>14.81</u>	<u>10.78</u>	<u>6.41</u>	<u>173</u>	<u>3.04</u>	<u>19.8</u>	<u>3.74</u>	<u>1.95</u>
<u>1000</u>	<u>14.81</u>	<u>10.73</u>	<u>6.42</u>	<u>172</u>	<u>3.11</u>	<u>12.8</u>	<u>3.52</u>	<u>1.99</u>
<u>1005</u>	<u>14.81</u>	<u>10.67</u>	<u>6.44</u>	<u>170</u>	<u>3.13</u>	<u>8.3</u>	<u>3.48</u>	<u>2.00</u>
<u>1010</u>	<u>14.81</u>	<u>10.70</u>	<u>6.44</u>	<u>169</u>	<u>3.12</u>	<u>6.5</u>	<u>3.47</u>	<u>2.00</u>
<u>1015</u>	<u>14.81</u>	<u>10.67</u>	<u>6.44</u>	<u>168</u>	<u>3.12</u>	<u>4.6</u>	<u>3.45</u>	<u>1.99</u>

Sampling Information:

Quantity	Size	Material	Preservative	Compounds analyzed	Method
2	100 mL	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/ Ethene/CO2	RSK-175

Sample ID: **MW-12-1021**Sample Time: 1015

Duplicate?

Yes ☐ No ☒

MS/MSD?

Yes ☐ No ☒Shipped: Drop-off Albany Service Center ☐Pace Courier ☒Laboratory: Pace Analytical
Greensburg, Pennsylvania

Sampling Personnel: AS
 Job Number: 0603275-120950-221
 Well Id. **MW-13**

Date: 10/4/21
 Weather: 60°F, cloudy
 Time In: 0930 Time Out: 1045

Well Information

		TOC	Other
Depth to Water:	(feet)	<u>14.48</u>	
Depth to Bottom:	(feet)	<u>22.75</u>	
Depth to Product:	(feet)	<u>NP</u>	
Length of Water Column:	(feet)	<u>8.27</u>	
Volume of Water in Well:	(gal)	<u>1.32</u>	
Three Well Volumes:	(gal)	<u>3.97</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 ☐ Peristaltic ☐ Well Wizard Dedicated Pump ☒
 Tubing/Bailer Material: Teflon ☐ Stainless St. ☐ Polyethylene ☒ other ☐
 Sampling Method: Bailer ☐ Peristaltic ☐ Well Wizard Dedicated Pump ☒
 Average Pumping Rate: 250 (ml/min)
 Duration of Pumping: 30 (min)
 Total Volume Removed: 2 (gal) Did well go dry? Yes ☐ No ☒

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

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

Horiba U-52 Water Quality Meter Used?

Yes ☒ No ☐

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
<u>0935</u>	<u>14.52</u>	<u>13.98</u>	<u>6.62</u>	<u>-166</u>	<u>0.582</u>	<u>22.0</u>	<u>32.85</u>	<u>0.372</u>
<u>0940</u>	<u>14.55</u>	<u>13.36</u>	<u>6.76</u>	<u>-202</u>	<u>0.583</u>	<u>36.1</u>	<u>14.84</u>	<u>0.373</u>
<u>0945</u>	<u>14.58</u>	<u>13.19</u>	<u>7.36</u>	<u>-239</u>	<u>0.583</u>	<u>30.6</u>	<u>3.04</u>	<u>0.373</u>
<u>0950</u>	<u>14.58</u>	<u>13.11</u>	<u>7.55</u>	<u>-249</u>	<u>0.575</u>	<u>22.0</u>	<u>1.47</u>	<u>0.368</u>
<u>0955</u>	<u>14.58</u>	<u>13.04</u>	<u>7.66</u>	<u>-250</u>	<u>0.566</u>	<u>17.7</u>	<u>0.65</u>	<u>0.362</u>
<u>1000</u>	<u>14.70</u>	<u>13.00</u>	<u>7.63</u>	<u>-242</u>	<u>0.550</u>	<u>11.5</u>	<u>0.43</u>	<u>0.353</u>
<u>1005</u>	<u>14.71</u>	<u>12.98</u>	<u>7.65</u>	<u>-239</u>	<u>0.531</u>	<u>7.2</u>	<u>0.34</u>	<u>0.340</u>

Sampling Information:

Quantity	Size	Material	Preservative	Compounds analyzed	Method
2	100 mL	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/ Ethene/CO2	RSK-175

MW-13-MS-1021 and MW-13-MSD-1021

Sample ID: **MW-13-1021**
 Sample Time: 1010

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: AS
Job Number: 0603275-120950-221
Well Id. **MW-14**

Date: 10/6/21
Weather: 61°F, cloudy
Time In: 1050 Time Out: 1150

Well Information

		TOC	Other
Depth to Water:	(feet)	<u>14.21</u>	
Depth to Bottom:	(feet)	<u>23.55</u>	
Depth to Product:	(feet)	<u>NP</u>	
Length of Water Column:	(feet)	<u>9.34</u>	
Volume of Water in Well:	(gal)	<u>1.49</u>	
Three Well Volumes:	(gal)	<u>4.48</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: Water is rusty in color

Purging Information

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

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

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

Did well go dry? Yes ☐ No ☒

Horiba U-52 Water Quality Meter Used?

Yes ☒ No ☐

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
<u>1055</u>	<u>14.41</u>	<u>14.24</u>	<u>7.65</u>	<u>-139</u>	<u>0.556</u>	<u>178</u>	<u>4.08</u>	<u>0.354</u>
<u>1100</u>	<u>14.41</u>	<u>15.55</u>	<u>7.39</u>	<u>14</u>	<u>0.592</u>	<u>0.0</u>	<u>4.24</u>	<u>0.379</u>
<u>1105</u>	<u>14.62</u>	<u>15.05</u>	<u>7.19</u>	<u>72</u>	<u>0.597</u>	<u>0.0</u>	<u>0.73</u>	<u>0.382</u>
<u>1110</u>	<u>14.71</u>	<u>14.78</u>	<u>7.16</u>	<u>83</u>	<u>0.604</u>	<u>154</u>	<u>6.22</u>	<u>0.387</u>
<u>1115</u>	<u>14.76</u>	<u>14.75</u>	<u>7.15</u>	<u>90</u>	<u>0.609</u>	<u>0.0</u>	<u>0.03</u>	<u>0.390</u>
<u>1120</u>	<u>14.81</u>	<u>14.87</u>	<u>7.14</u>	<u>78</u>	<u>0.610</u>	<u>446</u>	<u>0.00</u>	<u>0.390</u>
<u>1125</u>	<u>14.81</u>	<u>15.11</u>	<u>7.14</u>	<u>101</u>	<u>0.608</u>	<u>856</u>	<u>0.00</u>	<u>0.389</u>

Sampling Information:

Quantity	Size	Material	Preservative	Compounds analyzed	Method
2	100 mL	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/ Ethene/CO2	RSK-175

Field Duplicate-1021

Sample ID: **MW-14-1021**
Sample Time: 1130

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: Peter Lyon
Job Number: 0603275-120950-221
Well Id. **MW-15**

Date: 10/6/21
Weather: Cloudy 63
Time In: 0935 Time Out: 1030

Well Information		TOC	Other
Depth to Water:	(feet)	<u>16.40</u>	
Depth to Bottom:	(feet)	<u>23.00</u>	
Depth to Product:	(feet)	<u>-</u>	
Length of Water Column:	(feet)	<u>6.6</u>	
Volume of Water in Well:	(gal)	<u>1.03</u>	
Three Well Volumes:	(gal)	<u>3.16</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 water	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"/>		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=1337cu. feet				
Average Pumping Rate:	(ml/min) <u>200</u>					
Duration of Pumping:	(min) <u>20</u>					
Total Volume Removed:	(gal) <u>2</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)
0945	17.09	12.19	6.68	-165	.932	36.9	1.53	.596
0950	17.10	12.40	6.88	-166	.925	36.4	1.37	.592
0955	17.12	13.18	7.47	-167	.898	25.8	1.01	.574
1000	17.13	13.53	7.97	-167	.888	26.5	0.81	.568
1005	17.24	14.26	8.63	-165	.879	10.0	0.71	.563
1010	17.46	13.29	8.89	-167	.880	11.2	0.50	.563
1015	17.48	13.50	9.00	-169	.877	11.7	0.44	.561

Sampling Information:						
Quantity	Size	Material	Preservative	Compounds analyzed	Method	
2	100 mL	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/ Ethene/CO2	RSK-175	

Sample ID: **MW-15-1021** Duplicate? Yes ☐ No ☒
Sample Time: 1015 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: AS
Job Number: 0603275-120950-221
Well Id. **MW-16**

Date: 10/6/21
Weather: 64°F, mostly cloudy
Time In: 1155 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	<u>9.81</u>	
Depth to Bottom:	(feet)	<u>19.45</u>	
Depth to Product:	(feet)	<u>ND</u>	
Length of Water Column:	(feet)	<u>9.64</u>	
Volume of Water in Well:	(gal)	<u>1.54</u>	
Three Well Volumes:	(gal)	<u>4.62</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 ☐ Peristaltic ☐ Well Wizard Dedicated Pump ☒
Tubing/Bailer Material: Teflon ☐ Stainless St. ☐ Polyethylene ☒ other ☐
Sampling Method: Bailer ☐ Peristaltic ☐ Well Wizard Dedicated Pump ☒
Average Pumping Rate: 250 (ml/min)
Duration of Pumping: 30 (min)
Total Volume Removed: (gal) ☐ Did well go dry? Yes ☐ No ☒
Horiba U-52 Water Quality Meter Used? Yes ☒ No ☐

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

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
<u>1200</u>	<u>10.15</u>	<u>15.04</u>	<u>7.15</u>	<u>-54</u>	<u>0.797</u>	<u>288</u>	<u>2.93</u>	<u>0.498</u>
<u>1205</u>	<u>10.99</u>	<u>13.82</u>	<u>7.06</u>	<u>-193</u>	<u>0.984</u>	<u>77.2</u>	<u>3.81</u>	<u>0.629</u>
<u>1210</u>	<u>11.41</u>	<u>13.27</u>	<u>6.95</u>	<u>-191</u>	<u>0.101</u>	<u>16.2</u>	<u>0.21</u>	<u>0.646</u>
<u>1215</u>	<u>11.72</u>	<u>13.43</u>	<u>6.95</u>	<u>-203</u>	<u>1.02</u>	<u>6.3</u>	<u>0.00</u>	<u>0.652</u>
<u>1220</u>	<u>12.05</u>	<u>13.34</u>	<u>6.95</u>	<u>-225</u>	<u>1.02</u>	<u>3.9</u>	<u>0.00</u>	<u>0.654</u>
<u>1225</u>	<u>12.29</u>	<u>13.17</u>	<u>6.93</u>	<u>-239</u>	<u>1.03</u>	<u>3.1</u>	<u>0.00</u>	<u>0.659</u>
<u>1230</u>	<u>12.48</u>	<u>13.06</u>	<u>6.94</u>	<u>-249</u>	<u>1.04</u>	<u>2.5</u>	<u>0.00</u>	<u>0.665</u>

Sampling Information:

Quantity	Size	Material	Preservative	Compounds analyzed	Method
2	100 mL	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/ Ethene/CO2	RSK-175

Sample ID: **MW-16-1021**
Sample Time: 1235

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

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



Appendix B – Data Usability Summary Report



Groundwater & Environmental Services, Inc.

708 North Main Street, Suite 201
Blacksburg, VA 24060

T. 800.662.5067

November 12, 2021

Devin Shay

Groundwater & Environmental Services, Syracuse
6780 Northern Blvd., Suite 100
East Syracuse, NY 13057

RE: Data Usability Summary Report for National Grid: Johnstown, NY Site Data Package
Pace Analytical Job No. 30444220

Groundwater & Environmental Services, Inc. (GES) reviewed one data package (Laboratory Project Number 30444220) from Pace Analytical Services, Inc., for the analysis of groundwater samples collected on October 6, 2021 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, ASTM D516-11, EPA 351.2, EPA 6010C, SM 4500NO3F-2011, SM4500CIE-2011, SM 4500S2F-2011, SM 3500-FeB-2011, SM 2320B-2011, and the USEPA SW846 methods 8260C/8270DSIM/9012B, with additional QC requirements of the NYSDEC ASP. A trip blank was analyzed to insure that there was no impact to the data from transport operations.

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 (M S / M S D) 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	Matrix	Date Collected
30444220001	MW-4-1021	Water	10/06/21 11:20
30444220002	MW-7-1021	Water	10/06/21 12:00
30444220003	MW-10-1021	Water	10/06/21 11:10
30444220004	MW-12-1021	Water	10/06/21 10:15
30444220005	MW-13-1021	Water	10/06/21 10:10
30444220006	MW-13-MS-1021	Water	10/06/21 10:10
30444220007	MW-13-MSD-1021	Water	10/06/21 10:10
30444220008	MW-14-1021	Water	10/06/21 11:30
30444220009	MW-15-1021	Water	10/06/21 10:15
30444220010	MW-16-1021	Water	10/06/21 12:35
30444220011	Field Duplicate - 1021	Water	10/06/21 00:00
30444220012	Trip Blank	Water	10/06/21 00:01

Table 2. Validation Qualifiers

Sample ID	Qualifier	Analyte	Reason for qualification
MW-4	Cyanide	J-	Low MS recovery
All Samples	J-	Ferrous Iron	Analyzed outside of hold time
MW-14 Duplicate	J	Ferrous Iron, Sulfide, Alkalinity	Field RPD > 30%
MW-13	J+	Anthracene Naphthalene Benzo(a)anthracene Benzo(a)pyrene Chrysene Fluoranthene Phenanthrene Pyrene	MS/MSD High recoveries Poor precision
	UJ	2-Methylnaphthalene Acenaphthene Acenaphthylene	Poor precision, RPD>30%
	J-	Iron Sulfate	MS low recovery
	J	Sulfide Alkalinity	Poor precision, RPD >30%
MW-7 MW-13 MW-14 MW-15 MW-16 Field Dup	J	Benzo(b)fluoranthene and Benzo(k)fluoranthene	Not resolved from each other on the instrument

In summary, sample results were usable as reported, with the following exceptions:

The following non-compliances were not used to qualify data:

- Benzene, toluene and ethylbenzene all reported recoveries low out of specification in the MS/MSD; no qualification is necessary as the initial concentration in the sample is >4X the spiking concentration.

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 MS/MSD recoveries were outside of criteria, however the original concentration was >>4x the spiking concentration and the recoveries do not represent the method efficacy. Matrix spike RPDs fell within criteria. Precision calculations showed that the recoveries were consistent, as RPDs were within expected ranges. Surrogate recovery was within bounds, and LCS recoveries were compliant, and used to determine method efficacy.

The field duplicate correlations were calculated and fell within criteria.

PAHs by EPA8270D/NYSDEC ASP

Holding times were met. Instrumental tune fragmentations were within acceptance ranges. Surrogate recoveries were within analytical and validation guidelines. Blanks show no contamination. Calibration standards, both initial and continuing, show acceptable responses within analytical method protocols and validation guidelines. Two analytes were not resolved in the chromatogram, so all associated results are qualified as estimated.

The MS/MSD calculations indicated that there was poor reproducibility and the accuracy of the MSD was poor. Some compounds were spiked with >25% of the original concentration, and the accuracy data are not applicable. Where non-conformance indicated an issue with the reported data, data are qualified.

Surrogate recovery was within bounds for all samples. The field duplicate correlations showed good reproducibility.

Ferrous Lead by SM 3500-FeB-2011/NYDESC ASP

Instrument performance is compliant, and blanks show no contamination above the reporting limit. All QC recoveries and precision calculations show good efficacy for the method, with the exception of recovery of the MS and the field duplicate precision. Lead showed poor precision in the field duplicate and is qualified as estimated.

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.
- Sulfide and Sulfate showed poor reproducibility in the field sample and are qualified as estimated.
- Alkalinity showed poor reproducibility in the field sample and is qualified as estimated in MW-13.

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

Ferrous Iron by SM3500-FeD-00/ NYSDEC ASP

Review was conducted for method compliance, holding times, transcription, calculations, standard and blank acceptability, and accuracy and precision. Holding time was exceeded for all samples, and all data is qualified as estimated with an indeterminate bias, except for the MS/MSD recoveries associated with MW-13, which were low, outside of criteria. The non-detect data in MW-13 is therefore qualified as estimated non-detect, with a possible low bias.

Field correlations indicate that ferrous iron results are not reproducible (RPD > 30%). The data is qualified as estimated for holding time and for precision.

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 within specification for MW-13 associated samples:

Data Precision

Table 3
Field Precision
JOHNSTOWN NY SITE
Fall 2021

Field Identification	Analyte	Sample Result (µg/L)	Duplicate Result (µg/L)	RPD (%)	Qualified
MW-14/FIELD DUP	Acenaphthene	0.20	0.15	28.6	A
	Acenaphthylene	1.6	1.5	6.5	A
	Anthracene	0.62	0.57	8.4	A
	Benzo(a)anthracene	3.5	3.5	0.0	A
	Benzo(a)pyrene	3.9	3.9	0.0	A
	Benzo(b)fluoranthene	5.4	5.5	1.8	A
	Benzo(g,h,i)perylene	2.7	2.7	0.0	A
	Benzo(k)fluoranthene	4.7	4.7	0.0	A
	Chrysene	2.7	2.7	0.0	A
	Dibenz(a,h)anthracene	0.59	0.57	3.4	A
	Fluoranthene	4.5	4.5	0.0	A
	Fluorene	0.26	0.22	16.7	A
	Indeno(1,2,3-cd)pyrene	2.2	2.2	0.0	A
	Naphthalene	0.18	0.19	5.4	A
	Phenanthrene	1.5	1.4	6.9	A
	Pyrene	7.3	7.4	1.4	A
	Alkalinity	302.0	450	39.4	J
	Fe	1.4	5	112.5	J
	Sulfide	1.4	3	72.7	J
	Sulfate	14.5	13.2	9.4	A
	Kjeldahl Nitrogen	1.8	2.1	15.4	A
	Chloride	4.5	4.5	0.0	A
	Nitrate	0.3	0.27	3.6	A
	Cyanide	0.1	0.058	21.5	A

J: Qualified as estimated, RPD exceeds maximum 30%

A: Acceptable RPD

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.

A handwritten signature in blue ink, reading 'B Janowiak', with a long horizontal flourish extending to the right.

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.: 30444220

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30444220001	MW-4-1021	Water	10/06/21 11:20	10/07/21 10:00
30444220002	MW-7-1021	Water	10/06/21 12:00	10/07/21 10:00
30444220003	MW-10-1021	Water	10/06/21 11:10	10/07/21 10:00
30444220004	MW-12-1021	Water	10/06/21 10:15	10/07/21 10:00
30444220005	MW-13-1021	Water	10/06/21 10:10	10/07/21 10:00
30444220006	MW-13-MS-1021	Water	10/06/21 10:10	10/07/21 10:00
30444220007	MW-13-MSD-1021	Water	10/06/21 10:10	10/07/21 10:00
30444220008	MW-14-1021	Water	10/06/21 11:30	10/07/21 10:00
30444220009	MW-15-1021	Water	10/06/21 10:15	10/07/21 10:00
30444220010	MW-16-1021	Water	10/06/21 12:35	10/07/21 10:00
30444220011	Field Duplicate - 1021	Water	10/06/21 00:00	10/07/21 10:00
30444220012	Trip Blank	Water	10/06/21 00:01	10/07/21 10:00

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30444220

Method: EPA 8270D by SIM

Description: 8270D PAH SIM Reduced Volume

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

Date: October 26, 2021

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

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

Matrix Spikes:

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

QC Batch: 467903

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30444220005

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

- MS (Lab ID: 2259195)
 - 2-Methylnaphthalene
 - Benzo(a)anthracene
- MSD (Lab ID: 2259196)
 - 2-Methylnaphthalene
 - Acenaphthene
 - Acenaphthylene
 - Anthracene
 - Benzo(a)anthracene

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30444220

Method: EPA 8270D by SIM

Description: 8270D PAH SIM Reduced Volume

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

Date: October 26, 2021

QC Batch: 467903

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30444220005

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

- Benzo(a)pyrene
- Chrysene
- Fluoranthene
- Fluorene
- Naphthalene
- Phenanthrene
- Pyrene

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

- MS (Lab ID: 2259195)
 - Acenaphthene
 - Acenaphthylene
 - Fluorene
 - Phenanthrene

R1: RPD value was outside control limits.

- MSD (Lab ID: 2259196)
 - 2-Methylnaphthalene
 - Acenaphthene
 - Acenaphthylene
 - Anthracene
 - Fluorene
 - Naphthalene
 - Phenanthrene

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30444220

Method: EPA 8260C

Description: 8260C MSV

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

Date: October 26, 2021

General Information:

12 samples were analyzed for EPA 8260C by Pace Analytical Services Greensburg. 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.

QC Batch: 468628

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30444220005

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

- MS (Lab ID: 2262783)
 - Benzene
 - Ethylbenzene
 - Toluene
 - m&p-Xylene
 - o-Xylene
- MSD (Lab ID: 2262784)
 - Benzene
 - Ethylbenzene
 - Toluene

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30444220

Method: SM 2320B-2011

Description: 2320B Alkalinity

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

Date: October 26, 2021

General Information:

11 samples were analyzed for SM 2320B-2011 by Pace Analytical Services Greensburg. 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

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30444220

Method: SM 3500-FeB-2011

Description: Iron, Ferrous

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

Date: October 26, 2021

General Information:

11 samples were analyzed for SM 3500-FeB-2011 by Pace Analytical Services Greensburg. 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-10-1021 (Lab ID: 30444220003)
- MW-12-1021 (Lab ID: 30444220004)
- MW-13-1021 (Lab ID: 30444220005)
- MW-13-MS-1021 (Lab ID: 30444220006)
- MW-13-MSD-1021 (Lab ID: 30444220007)
- MW-14-1021 (Lab ID: 30444220008)
- MW-15-1021 (Lab ID: 30444220009)
- MW-16-1021 (Lab ID: 30444220010)
- MW-4-1021 (Lab ID: 30444220001)
- MW-7-1021 (Lab ID: 30444220002)

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

- Field Duplicate - 1021 (Lab ID: 30444220011)

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

- Field Duplicate - 1021 (Lab ID: 30444220011)
- MW-10-1021 (Lab ID: 30444220003)
- MW-12-1021 (Lab ID: 30444220004)
- MW-13-1021 (Lab ID: 30444220005)
- MW-13-MS-1021 (Lab ID: 30444220006)
- MW-13-MSD-1021 (Lab ID: 30444220007)
- MW-14-1021 (Lab ID: 30444220008)
- MW-15-1021 (Lab ID: 30444220009)
- MW-16-1021 (Lab ID: 30444220010)
- MW-4-1021 (Lab ID: 30444220001)
- MW-7-1021 (Lab ID: 30444220002)

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.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30444220

Method: SM 3500-FeB-2011

Description: Iron, Ferrous

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

Date: October 26, 2021

QC Batch: 467183

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30444220005

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

- MS (Lab ID: 2256074)
 - Iron, Ferrous
- MS (Lab ID: 2256075)
 - Iron, Ferrous

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30444220

Method: SM 4500-S2-F-2011

Description: 4500-S2-F Sulfide, Iodometric

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

Date: October 26, 2021

General Information:

11 samples were analyzed for SM 4500-S2-F-2011 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

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

Matrix Spikes:

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

Duplicate Sample:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30444220

Method: 300.0 Rev.2.1, 1993

Description: 300.0 IC Anions 28 Days

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

Date: October 26, 2021

General Information:

11 samples were analyzed for 300.0 Rev.2.1, 1993 by Pace Analytical Services Greensburg. 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: 468979

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30444220005

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

- MS (Lab ID: 2264521)
 - Sulfate
- MSD (Lab ID: 2264522)
 - Sulfate

Duplicate Sample:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30444220

Method: EPA 351.2

Description: 351.2 Total Kjeldahl Nitrogen

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

Date: October 26, 2021

General Information:

11 samples were analyzed for EPA 351.2 by Pace Analytical Services Greensburg. 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: 467300

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30444028002,30444220009

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

- MS (Lab ID: 2256510)
 - Nitrogen, Kjeldahl, Total
- MSD (Lab ID: 2256511)
 - Nitrogen, Kjeldahl, Total

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30444220

Method: SM 4500-Cl-E-2011

Description: 4500 Chloride

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

Date: October 26, 2021

General Information:

11 samples were analyzed for SM 4500-Cl-E-2011 by Pace Analytical Services Greensburg. 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

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30444220

Method: SM 4500NO3-F-2011

Description: SM4500NO3-F, NO3-NO2

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

Date: October 26, 2021

General Information:

11 samples were analyzed for SM 4500NO3-F-2011 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

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

Matrix Spikes:

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

Additional Comments:

Analyte Comments:

QC Batch: 469023

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- MW-10-1021 (Lab ID: 30444220003)
 - Nitrogen, NO2 plus NO3
- MW-13-1021 (Lab ID: 30444220005)
 - Nitrogen, NO2 plus NO3
- MW-15-1021 (Lab ID: 30444220009)
 - Nitrogen, NO2 plus NO3
- MW-7-1021 (Lab ID: 30444220002)
 - Nitrogen, NO2 plus NO3

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY

Pace Project No.: 30444220

Method: EPA 9012B

Description: 9012B Cyanide, Total

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

Date: October 26, 2021

General Information:

11 samples were analyzed for EPA 9012B by Pace Analytical Services Greensburg. 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: 468559

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30444220001,30444220011

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

- MS (Lab ID: 2262505)
 - Cyanide
- MSD (Lab ID: 2262506)
 - Cyanide
- MSD (Lab ID: 2262513)
 - Cyanide

Additional Comments:

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

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.