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August 17, 2020

Mr. John Ruspantini, CHMM, PMP
NYSEG
18 Link Drive
Binghamton, NY 13904

Re: 2019 and 2020 Annual Periodic Review Reports Response Letter
Madison Avenue Former MGP Site, Elmira
Site #808018

Dear Mr. Ruspantini (as the Certifying Party):

The New York State Department of Environmental Conservation (the Department), along with the New York State Department of Health (NYSDOH), have reviewed the Annual Periodic Review Reports (PRR) and IC/EC Certifications for the above referenced Site for the following periods: 2019 (Q21 through Q24) and 2020 (Q25 through Q28). These reports serve to confirm and document Site status in the interim between completion of the remedial action and receiving the Final Engineering Report, environmental easements, and entering into Site management. The Department hereby accepts the PRRs and associated Certifications. The next PRR will be due in April 2021. If you have any questions, please feel free to contact me at 518-402-2029 or email: greta.white@dec.ny.gov.

Sincerely,

Greta White, P.G.
Project Manager
Remedial Action Bureau C
Division of Environmental Remediation

EC: D. Eaton, NYSDEC
J. Brown, NYSDEC
S. Lawrence, NYSDOH
J. Deming, NYSDOH
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NEW YORK STATE OF OPPORTUNITY. Department of Health

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Governor

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Commissioner

SALLY DRESLIN, M.S., R.N.
Executive Deputy Commissioner

August 14, 2020

Greta White
Division of Environmental Remediation
NYS Dept of Environmental Conservation
625 Broadway
Albany, NY 12233

RE: **Annual Periodic Review Report (Q25 through Q28) (revised)**
Madison Avenue Former MGP Site
Site # 808018
Elmira, Chemung County

Ms. White:

I reviewed the revised August 2020 *Annual Periodic Review Report* for the referenced site. I understand that that the remedy is in accordance with the 2014 *Site Management Plan*, *2008 Record of Decision*, and is now properly certified. I have no comments and find this report acceptable.

If you have any questions, please contact me at 402-7860.

Sincerely,

Stephen Lawrence
Public Health Specialist
Bureau of Environmental Exposure Investigation

ec: J. Deming / A. Martin / e-File
A. Bonamici / C. Nicastro – NYSDOH WRO
P. Buzzetti – CCHD
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ARCADIS Design & Consultancy for natural and built assets

NYSEG

ANNUAL PERIODIC REVIEW REPORT (Q21 THROUGH Q24)

Madison Avenue Former MGP Site
Elmira, New York
NYSDEC Site Number: 808018

April 2019, Revised August 2020

ANNUAL PERIODIC REVIEW REPORT (Q21 THROUGH Q24)

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ACRONYMS AND ABBREVIATIONS

AW	Application Well
BDL	below detection limits
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, xylene
COC	Compound of Concern
cy	cubic yard
DNAPL	dense non-aqueous phase liquid
DUSR	data usability summary report
GV	guidance value
ISS	in-situ soil stabilization
MGP	manufactured gas plant
O&M	operation and maintenance
NAPL	non-aqueous phase liquid
NYSDEC	New York State Department of Environmental Conservation
PAH	polycyclic aromatic hydrocarbon
PMW	performance monitoring well
PRR	Periodic Review Report
ROD	Record of Decision
sf	square feet
SMP	Site Management Plan
ug/L	micrograms per liter
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds

1 INTRODUCTION

This *Annual Periodic Review Report (Q21 through Q24)* (Annual PRR) summarizes monitoring results collected and operation and maintenance (O&M) activities conducted during the sixth year of operation of the New York State Department of Environmental Conservation- (NYSDEC-) selected remedy for the Madison Avenue former manufactured gas plant (MGP) site. The former MGP site is located in the City of Elmira, Chemung County, New York (**Figure 1**). The site is approximately 6 acres in size and occupies most of the city block bounded by East Clinton Street, Madison Avenue and East Fifth Street (**Figure 2**). This report includes the monitoring results obtained and maintenance activities performed during the May 2018 (Q21 quarterly site visit) through February 2019 (Q24 annual site visit).

Recommendations based on evaluation of data collected during the reporting period are also included. Verification from NYSEG that site controls were in place and effective, and that no changes have occurred at the site that would impair the ability of the controls to protect public health and the environment, is included as an appendix.

1.1 Background

The NYSDEC-selected soil and groundwater remedies for the site are presented in the *Record of Decision* (NYSDEC, 2008) (ROD). The soil remedy for the site was completed in January 2012; remedial components associated with the groundwater treatment and non-aqueous phase liquid (NAPL) recovery systems were subsequently installed in October 2012.

In general, the soil remedy consisted of:

- Excavation of approximately 9,820 tons of soil/fill containing visual evidence of heavy MGP-related impacts from three areas of the site at depths up to 15 feet below ground surface (bgs).
- In-situ soil stabilization (ISS) of approximately 7,811 cubic yards (cy) of soil exhibiting visual evidence of heavy MGP-related impacts at depths up to 28 feet bgs in 10 discrete areas of the site.
- Excavation and removal of an oil/tar separator.

In addition, a shallow area (approximately 6,250 square feet [sf]) containing purifier waste that was observed on the eastern portion of the site during excavation of a test pit was removed, along with an abandoned electrical line encased in concrete and an abandoned section of railroad.

The groundwater remedy consisted of increasing the oxygen content of groundwater in the southwest corner of the site to enhance natural biodegradation of MGP-related compounds of concern (COCs) to mitigate their migration beyond the site boundary. The ROD identifies the following COCs for groundwater:

- Four (4) volatile organic compounds (VOCs) that includes benzene, toluene, ethylbenzene, and xylene (BTEX).
- Six (6) polycyclic aromatic hydrocarbons (PAHs), including benzo(a)anthracene, benzo(b) fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(k)fluoranthene, and chrysene.

The technology of enhancing the population of naturally occurring indigenous bacteria targets the single-ringed, less complex, more mobile BTEX compounds rather than the multi-ringed, complex PAH compounds; however, PAHs (particularly the six identified as COCs) are also considered when evaluating the groundwater remedy.

From May 2013 to August 2018, oxygen-enhancement of groundwater was accomplished through application of oxygen releasing compounds (i.e., oxygen-releasing socks) deployed in 19 4-inch diameter Application Wells (AWs). Treatment system performance was measured using three Performance Monitoring Wells (PMWs) located hydraulically upgradient from the AWs and three located hydraulically downgradient.

NAPL monitoring and passive removal is also a component of the site remedy. The NAPL collection network during the first 5-years of operation consisted of five NAPL collection wells (NRW-1 through NRW-4, and NMW-0402S), along with AW-17.

Based on site data collected over the initial 5-year monitoring period, the fifth Annual PRR (Arcadis 2018) recommended:

- Suspending the application of oxygen-releasing material (and the associated performance monitoring tasks) for a 5-year period.
- Eliminating collection of groundwater samples from four monitoring wells (MW-2S, MW-7, MW-0402S, and MW-0403S) from the effectiveness monitoring program.
- Eliminating quarterly gauging at three NAPL monitoring wells (NRW-1, NRW- 3, and NRW-4).

The NYSDEC concurred with these recommendations in an email correspondence dated July 26, 2018. An addendum letter dated August 13, 2018 was sent to the NYSDEC and added to the *Site Management Plan* (ARCADIS, 2014) (SMP) to document the revisions These modifications to the scope of work were implemented during the August 2018 (Q22) site visit.

Locations of all site wells, including the groundwater treatment wells, monitoring wells, and NAPL collection wells are shown on **Figure 2**. Soil boring and well construction logs are included in the SMP.

1.2 Objectives

As stated in the addended SMP, the objectives of this Annual PRR are to:

- Present and evaluate site-wide data collected during the monitoring period (i.e., Q21 through Q24).
- Present conclusions indicating whether the treatment system objectives, as defined in the ROD and SMP (including NYSDEC-approved modifications), and presented herein, are being achieved.
- Present recommendations for modifications to the treatment system and/or monitoring requirements based on the evaluation of site data.

As required by the addended SMP, during this reporting period:

- Effectiveness monitoring was conducted semi-annually.

- NAPL gauging, and removal if required, was performed on a quarterly basis from NRW-2, NMW-0402S, and AW-17; gauging of NRW-1, NRW-3, and NRW-4 was performed during semi-annual site visits.
- Well inspections and a site inspection were conducted annually.

A summary of monitoring and O&M tasks completed, along with associated dates tasks were conducted, is presented in **Table 1**.

2 PERFORMANCE MONITORING

Performance monitoring is the assessment of physical and chemical parameters of the treatment system to determine if the remedy is performing as designed.

As stated above, based on site data collected over the initial 5-year monitoring period (May 2013 to February 2018), the NYSDEC approved suspending application of oxygen-releasing material and the associated performance monitoring tasks for a 5-year period; therefore, no performance monitoring was conducted during the reporting period.

3 EFFECTIVENESS MONITORING

Effectiveness monitoring is the periodic chemical and physical analysis of a media (e.g., groundwater) to determine if the remedial action objectives are being achieved.

As presented in the addended SMP, the objectives of effectiveness monitoring are to:

- Assess groundwater movement patterns at the site using water-level data.
- Document concentrations of dissolved BTEX downgradient from the treatment area.
- Document dissolved COC (BTEX and six PAHs) concentration trends across the site.

Effectiveness monitoring for the sixth year of system operation consisted of:

- Semi-annual (Q22 and Q24) gauging of 17 MWs.
- Semi-annual (Q22 and Q24) sampling of groundwater from 6 monitoring wells for laboratory analysis of BTEX and PAHs.

The results from the effectiveness monitoring are presented below.

3.1 Groundwater Movement

Water-level data were collected during the Q22 and Q24 site visits from 17 monitoring wells (MW-1S, MW-1D, MW-2S, MW-2D, MW-4S, MW-6S, MW-7, MW-8S, MW-8D, MW-9S, MW-9D, MW-0304D, MW-0402S, MW-0403S, MW-0404S, MW-0404D, and MW-0405S).

Table 2 presents a summary of the water elevation data collected from the initial Q1 (i.e., baseline) sampling event (April 2013) through the Q24 sampling event.

Figure 3 and **Figure 4** present water table maps developed from the Q22 and Q24 gauging events, respectively. As shown on the figures, the general groundwater flow direction at the site is to the south during both gauging events. When comparing water table maps between the two gauging events, no significant differences are observed, indicating that no significant changes to site-wide groundwater flow direction occurred during the reporting period. Additionally, site-wide groundwater flow directions during this reporting period were very similar to the previous reporting periods (i.e., Baseline event through Q20). Depths to groundwater ranged between approximately 5.0 to 10.5 feet bgs across the site during the reporting period.

3.2 Groundwater Quality

An ongoing program of groundwater monitoring has been in place at the site since 1985. As reported in the *Supplemental Remedial Investigation Report* (ARCADIS, 2007), results from quantitative trend analysis using available data from 1985 to 2004 concluded that constituent plumes appeared to be shrinking over time due to a variety of naturally occurring processes.

During both the Q22 and Q24 sampling events, groundwater from the 6 monitoring wells identified in the addended SMP (MW-4S, MW-6S, MW-8S, MW-9S, MW-0404S, and MW-0405S) was collected for

laboratory analysis of BTEX by United States Environmental Protection Agency (USEPA) SW-846 Method 8260 and PAHs by USEPA SW-846 Method 8270. Analytical results are summarized in **Table 3**. For comparison purposes, historical groundwater results collected in April 2004 and the Q1 through Q20 results are also included in the table.

Laboratory data packages from each of the sampling events during this period were reviewed by an individual approved to validate data in New York State, and *Data Usability Summary Reports* (DUSRs) were prepared. Data review indicated that overall laboratory performance was acceptable, and that overall data quality was within guidelines specified in the respective methods. A compact disc containing copies of the DUSRs is included as **Appendix A**.

Discussions of laboratory results for BTEX and PAHs are presented below.

3.2.1 Dissolved BTEX

Total BTEX concentrations in groundwater collected from the six MWs during both the Q22 and Q24 reporting period were all below detection limits (BDL). BTEX results for MW-8S and DUP-081418 for the Q22 event were reported from an 8X dilution run due to the nature of the sample matrix. BTEX results for MW-8S and DUP-022019 for the Q24 event were reported from an 8X dilution run due to foaming at the time of purging during sample analysis. BTEX results from other wells were reported from a 1X dilution run (or undiluted analysis). Results for dissolved BTEX from this sixth year of groundwater sampling are consistent with data reported since the 2004 sampling event.

Laboratory data for dissolved BTEX are presented in **Table 3**; dissolved total BTEX data are presented on **Figure 5**. Historical sampling data from 2004 and data collected during the previous five years of treatment system operation are also presented in **Table 3** and shown on **Figure 5**.

3.2.2 Dissolved PAH COCs

Laboratory data for dissolved PAHs are also presented in **Table 3**; data for the 6 PAH COCs are presented on **Figure 6**. Historical COC sampling data from 2004 and data collected during the first five years of treatment system operation are also presented in **Table 3** and shown on **Figure 6**.

Results from groundwater collected from the 6 MWs during the reporting period are summarized below.

Q22 Sampling:

- PAH COCs were not detected above method detection limits from any of the six MWs sampled.
- One (1) non-COC PAH analyte (acenaphthene) was detected in groundwater from 1 of the 6 monitoring wells sampled (MW-8S). Acenaphthene was detected at an estimated concentration of 2.1 micrograms per liter (ug/L), well below its New York State (NYS) groundwater guidance value (GV) of 20 ug/L. Concentrations of non-COC PAHs have consistently decreased during the February sampling events since the Q8 (February 2015) sampling event.
- Groundwater from MW-9S (located north/hydraulically upgradient of the Trayer Products building) did not have any detections of either COC or non-COC PAHs (consistent with previous sampling events).
- Neither COC nor non-COC PAHs were detected in either of the hydraulically downgradient monitoring wells (MW-0402S, MW-0405S) located south of the site (and south of the Trayer Products facility.

- PAH groundwater results for MW-8S and DUP-081418 were reported from an 8X dilution run due to the nature of the sample matrix.
- PAH groundwater results from other wells were reported from a 1X dilution run (or undiluted analysis).

Q24 Sampling:

- PAH COCs were not detected above method detection limits from any of the 6 MWs sampled.
- Non-COC PAHs were only detected in groundwater from 1 of the 6 monitoring wells sampled (MW-8S). Five non-COC PAHs were detected at MW-8S; each were detected at concentrations below their respective NYS groundwater GVs.
- Groundwater from MW-9S (located north/hydraulically upgradient of the Trayer Products building) did not have any detections of either COC or non-COC PAHs (consistent with previous sampling events).
- Similar to historical sampling events since 2015, neither COC or non-COC PAHs were detected in either of the hydraulically downgradient monitoring wells (MW-0404S and MW-0405S) located south of the site.
- PAH groundwater results for MW-8S and DUP-022019 were reported from an 8X dilution run due to foaming at the time of purging during sample analysis.
- PAH groundwater results from other wells were reported from a 1X dilution run (or undiluted analysis).

4 NAPL MONITORING RESULTS

Consistent with the addended SMP, NAPL gauging was conducted quarterly during the sixth year of monitoring. NAPL monitoring included two NAPL recovery wells (NRW-2 and NMW-0402S) and application well AW-17. The objectives of the NAPL monitoring task were to identify whether NAPL had accumulated within a well, and to remove it if present and recoverable. Locations of the wells are shown on **Figure 2**. A summary of the NAPL gauging data is included in **Table 2**.

DNAPL was present in each of the three wells during the reporting period:

- At NMW-0402S, DNAPL was present during each of the 4 gauging events ranging from 0.39 feet to 0.8 feet in apparent thickness.
- At NRW-02, DNAPL was present during three of the four gauging events ranging from 0.4 feet to 2 feet in apparent thickness.
- At AW-17, approximately 1.5 feet of DNAPL was present during the Q21 visit (May 2018), with only blebs present during the subsequent three visits.

Since the Baseline event in 2013, a total of approximately 4.5 gallons of DNAPL has been manually removed using a bailer. The approximate amount of NAPL removed by year includes:

- Year 1 (Q1 – Q4): approximately 1.6 gallons
- Year 2 (Q5 – Q8): approximately 0.7 gallons
- Year 3 (Q9 – Q12): approximately 0.5 gallons
- Year 4 (Q13 – Q16): approximately 0.5 gallons
- Year 5 (Q17 – Q20): approximately 0.5 gallons
- Year 6 (Q21 – Q24): approximately 0.7 gallons

As shown on the summary table and graph in **Appendix B**, the quantity of DNAPL recovered each year has been consistent over the past 4 to 5 years.

Recovered DNAPL was containerized and staged in the on-site shed for disposal by NYSEG.

5 TREATMENT SYSTEM OPERATION AND MAINTENANCE

NYSEG is responsible for maintaining any aspect of the site that is associated with remediation activities for the former MGP facility.

5.1 Treatment System Maintenance

The site remedy does not rely on any mechanical systems to protect public health or the environment. However, the addended SMP describes measures necessary to perform routine maintenance on the site cover materials, along with monitoring and treatment system components (i.e., well network).

Scheduled operation and maintenance activities described in the addended SMP and completed during the reporting period included the following:

- Routine well maintenance (e.g., replacing missing or broken locks, locking gripper caps, etc.).
- Removal of the oxygen-releasing socks and stainless steel containers from the application wells.
- Annual site inspection.

Additional maintenance recommendations that were included in the 5th Annual PRR (*Annual Periodic Review Report, Q17 through Q20*), and completed during the reporting period included:

- Verifying the depth to bottom of MW-2S. A Borescope was used during the Q22 site visit to determine if an obstruction existed near the bottom of MW-2S. Use of the Borescope was unsuccessful; sediment from within the well was manually removed using a bailer.
- Sediment removal from MW-2D and MW-7. Sediments were manually removed from MW-2D and MW-7 during the Q22 site visit using a bailer.
- Resurveying the top of casing of MW-2S. A surveying subcontractor (Keystone Associates Architects, Engineers and Surveyors, LLC) was hired to re-survey the top of casing elevation of MW-2S during the Q24 site visit.
- Replacing the road box lid at MW-0404S. The bolt holes for road box lid were re-tapped and the lid was replaced and secured during the Q24 site visit.

In addition, based on observed deficiencies during site visits, the following additional maintenance tasks were completed:

- Risers were cut down at PMW-01, PMW-03, and PMW-04. Due to heaving of the wells and/or sinking of the road boxes, the lids on the road boxes for each of the three PMWs could not be properly secured. To preserve the integrity of the well, the 2-inch riser was cut down within the road box, and the top of casings were re-surveyed along with MW-2S during the Q24 site visit. Note that these repairs were completed towards the end of the site visit, after gauging of the site wells were completed; therefore, the top of casing elevations presented in **Table 2** did not require revision for this report – the revised top of casing elevations will be reflected in the next gauging event.

- Replaced cover bolts and washers at MW-8S. To secure the road box cover, the cover bolts and washers were replaced during the Q22 visit.

Visual inspection of the treatment system wells was conducted during the annual site visit (Q24). In addition to visually inspecting the integrity of each well, gauging data was reviewed to monitor accumulated sediments. Accumulated sediments could impact the proper function of a well (e.g., adequate connection of the screened interval with groundwater in the formation). A summary of the accumulated sediment results from the Q22 and Q24 visits are presented below. As mentioned above, a summary of the gauging data is included in **Table 2**.

5.1.1 Monitoring Wells

Comparison of depth to bottom measurements collected during the reporting period for each of the 17 MWs to their respective well construction logs was conducted to determine accumulation of material within each well.

- Based on gauging data from the Q22 event compared to well installation information, only one well (MW-2S) contained sediments that occluded 10% or greater of the well screen (approximately 17%).
- Based on gauging data from the Q24 event compared to well installation information, again MW-2S contained sediments that occluded greater than 10% or greater of the well screen (approximately 16%).

Based on depth to bottom elevation information presented in the *Supplemental Investigation Report* (BBL, 2007), since February 2014 MW-2S consistently indicates the presence of approximately 1.7 to 1.8 feet of sediments after re-development. As stated above, the top of casing for MW-2S was resurveyed during the Q22 site visit, and the Borescope was not successful at identifying an obstruction at the bottom of the well.

Based on visual inspection during the Q24 site visit, the following deficiencies to monitoring wells were observed:

- MW-1S, MW-6S, MW-0402S, MW-0403S, MW-0404D, and MW-0405S: To properly secure the road box cover, the bolt holes for the road box lid should be re-tapped and the bolts replaced.
- MW-1S: The road box and apron are deteriorated/destroyed and should be replaced.

5.1.2 Application Wells

As described in the addended SMP, semi-annual gauging of AWs was not required during the reporting period, with the exception of AW-17 that has historically contained measurable quantities of NAPL.

Accumulated sediments within AW-17 increased during each of the quarterly site visits during the monitoring period, increasing from approximately 0.9 to 4.6 feet in thickness.

Based on visual inspection, no repairs to AW-17 are required.

5.1.3 Performance Monitoring Wells

As described in the addended SMP, semi-annual gauging of PMWs was not required during the reporting period.

5.1.4 NAPL Recovery Wells

Comparison of depth to bottom measurements collected during the reporting period from NRW-2 and NMW-0402S to their respective well construction logs was also conducted to determine accumulation of material within the wells. Both NRW-2 and NMW-0402S were constructed with a 5-foot long collection sump.

Results from each of the quarterly gauging events indicated:

- NRW-02 contained 0.13 feet of accumulated material in the sump.
- NMW-0402S contained 0.13 feet of accumulated material in the sump.

While not required by the addended SMP, NRW-1, NRW-3, and NRW-4 were gauged during the reporting period; none of these wells contained greater than 1 foot of accumulated materials (0.16 feet, 0.76 feet, and 0 feet, respectively).

Based on visual inspections, no repairs to NAPL recovery wells are required.

5.2 Suspension of Oxygen-Releasing Material

Removal of Adventus EHC-O oxygen-releasing socks and removal of the associated stainless steel canisters that contain the socks was completed during the August 2018 (Q22) site visit. The stainless-steel canisters were removed and brushed/scrubbed to remove accumulated material, and stored in the on-site storage shed. The spent oxygen-releasing socks were contained in 55-gallon DOT-approved drums and staged in the on-site storage shed for disposal by NYSEG.

5.3 Annual Site Inspection

As presented in the ROD, one of the remediation goals for the site is to maintain the surface cover materials that provide continued protection against potential human exposure to subsurface soil potentially containing MGP-related impacts. As required by the SMP, surface cover of the site (stone, gravel, vegetative, and/or asphalt cover) is visually evaluated annually and repaired as needed. Because potential MGP impacts can be encountered at depths as shallow as 2 feet bgs, the annual inspections focus on maintaining physical separation between site workers and the remaining MGP impacts.

The 2019 annual site inspection was conducted on February 19, 2019. No evidence of settling, obvious obstructions within drainage features (e.g., catch basins) or disturbance activities were observed. No deficiencies were observed. A Site Inspection Form associated with the inspection is included in **Appendix C.** A photographic log documenting site conditions at the time of the annual inspection is included as **Appendix D**. Note that snow was present at the time photographs were taken, however during successive days of the site visit, the snow melted, and condition of the cover, as described above,

was verified. The location where each photograph was taken, and the direction that the photographer was facing, is shown on **Figure 7**.

In addition, photographic documentation of the condition of each well associated with the site, including protective covers, locking devices, and overall integrity of the wells is also provided as **Appendix E**.

6 DISTURBANCE ACTIVITIES IN POTENTIALLY IMPACTED AREAS

NYSEG is not aware of any intrusive activities that were conducted in potentially impacted areas during the reporting period.

7 CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations based on the sixth year of treatment system monitoring and operation are presented below.

7.1 Conclusions

A summary of pertinent conclusions based on the sixth year of treatment system operation are presented below.

7.1.1 Effectiveness Monitoring

Results from the semi-annual (Q22) and annual (Q24) effectiveness monitoring indicated that:

- Site-wide groundwater flow direction was to the south; no significant differences in groundwater flow direction were observed between the two gauging events.
- Site-wide groundwater flow directions were very similar to historical reporting results.
- Total BTEX concentrations in groundwater collected from the 6 MWs located across the site were BDL during both the Q22 and Q24 sampling events.
- No PAH COCs in groundwater were detected from the 6 monitoring wells sampled across the site during either the Q22 or Q24 sampling events.
- One non-COC PAHs was present at MW-8S at concentrations below guidance values during the Q22 sampling; five non-COC PAHs were present below guidance values during the Q24 sampling event. Concentrations of both PAH COCs and non-COCs at MW-8 have shown decreasing trends during both spring and fall sampling events since Q14 (August 2016).
- Consistent with the objective of the groundwater treatment system, neither BTEX or PAH COCs were detected beyond the southwest property boundary; groundwater sampling results are similar to data reported from the first five years of groundwater sampling.

7.1.2 NAPL Monitoring

Quarterly NAPL monitoring indicated that:

- NAPL was detected at the same two NAPL recovery wells (NRW-2 and NMW-0402S) as previous monitoring periods.
- NAPL was detected at AW-17 during the Q21 site visit; however, only trace amounts were present during the three subsequent gauging events.
- The total volume of NAPL removed to date by manual bailing is approximately 4.5 gallons.
- The quantity of NAPL recovered each year has generally been consistent over the past four to five years.

7.1.3 Treatment System O&M

Scheduled O&M activities, along with recommended maintenance repairs presented in the 5th Annual PRR, in addition to additional required repairs observed during site visits conducted during the reporting period, were completed during the Q22 and Q24 site visits.

After re-development of MW-2S, well gauging data continued to indicate that sediments occluded greater than 10% of the well screen (approximately 16 to 17%). Use of a Borescope was not successful at identifying a blockage at the bottom of the well.

No evidence of settling, obvious obstructions within drainage features, or disturbance activities were observed during the 2018 annual site inspection.

7.2 Recommendations

Recommendations based on the sixth year of treatment system operation are presented below.

7.2.1 Treatment System O&M

- Redevelop AW-17 as accumulated sediments steadily increased over the four quarterly site visits to approximately 4.59 feet in thickness.
- Change the reference depth to bottom measurement of MW-2S from 20.22 to 18.50 to agree with the average gauged depth to bottom measurement from the August 2015 gauging event to present (i.e., based on the repeated and unable to be identified obstruction encountered in this well, or the presumed inaccurate reported depth to bottom measurement included on the well construction log).

7.2.2 Effectiveness Monitoring

- Continue with semi-annual and annual water-level gauging at 17 MWs and groundwater sampling from six monitoring wells (MW-4S, MW-6S, MW-8S, MW-9S, MW-0404S, and MW-0405S) as specified in the addended SMP.

7.2.3 NAPL Monitoring

- Continue to gauge NRW-2, NMW-0402S, and AW-17 quarterly for the presence of NAPL, and if present, remove to the extent practicable.

7.2.4 Reporting

- Continue to prepare and submit Annual PRRs as described in the addended SMP.

8 CERTIFICATION STATEMENT

A statement from NYSEG confirming that site controls were in place and effective and, based on information provided and site conditions to the extent that they could be observed, no changes occurred during the reporting period that would impair the ability of the controls to protect public health and the environment is included as **Appendix F**.

9 REFERENCES

ARCADIS, 2018. *Annual Periodic Review Report, Q17 through Q20*. Madison Avenue Former MGP Site, Elmira, New York (May 2018).

ARCADIS. 2014. *Site Management Plan.* Prepared for NYSEG, Madison Avenue Former MGP Site, Chemung County, Elmira, New York (March 2014).

ARCADIS. 2007. *Supplemental Remedial Investigation Report*, Madison Avenue MGP Site, Elmira, New York (February 2007).

New York State Department of Environmental Conservation, 2018. Email correspondence dated July 26, 2018 from Douglas MacNeal approving recommendations included in the *Annual Periodic Review Report, Q17 through Q20.*

New York State Department of Environmental Conservation. 2008. *Record of Decision*, Madison Avenue Former Manufactured Gas Plant (MGP) Site, City of Elmira, Chemung County, New York. Site Number 8-08-018. 2008.

TABLES

Table 1
Monitoring, Gauging, and Operation & Maintenance Schedule

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Event	Date	Scheduled Activities					
		Performance Monitoring	Effectiveness Monitoring	NAPL Gauging	O&M		
					Site Inspection	Well Inspections	Suspension/ Removal of EHC-O Socks
Q21 (Quarterly) Monitoring	May 17, 2018			X			
Q22 (Semi-annual) Monitoring	August 13-15, 2018		X	X			X
Q23 (Quarterly) Monitoring	November 15, 2018			X			
Q24 (Annual) Monitoring	February 19-21, 2019		X	X	X	X	

Notes:

- **Effectiveness Monitoring** – Included semi-annual gauging of 17 MWs and semi-annual sampling of 6 site MWs for BTEX and PAHs.
- **NAPL Gauging** – Included quarterly gauging of depth to water and depth to bottom at NRW-2, NMW-0402S, and AW-17, and removal of NAPL if present.
- **Site and Well Inspections** – Included visual inspections of the site cover materials and MWs, PMWs, NRWs, NMW, and AWs associated with the site

Table 2
Gauging Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Well ID	Measuring Point Elevation	Actual Depth to Bottom (feet TOC)	Date	Depth to Water (feet TOC)	Groundwater Elevation	Depth to Product (feet TOC)	Depth to Bottom (feet TOC)	Accumulated Thickness of Sediments (feet)
MW-1S	852.88	13.78	04/01/13	8.44	844.44	--	13.75	0.03
			05/28/13	8.55	844.33	--	13.75	0.03
			08/26/13	8.63	844.25	--	13.71	0.07
			11/18/13	8.60	844.28	--	13.69	0.09
			02/03/14	8.50	844.38	--	13.75	0.03
			08/04/14	8.35	844.53	--	13.74	0.04
			02/23/15	8.81	844.07	--	13.70	0.08
			08/24/15	8.37	844.51	--	13.71	0.07
			02/08/16	8.41	844.47	--	13.70	0.08
			08/22/16	8.55	844.33	--	13.72	0.06
			02/20/17	7.88	845.00	--	13.72	0.06
			08/21/17	8.56	844.32	--	13.71	0.07
			02/12/18	8.40	844.48	--	13.72	0.06
			08/13/18	8.01	844.87	--	13.75	0.03
			02/19/19	8.12	844.76	--	13.79	-0.01
MW-1D	852.98	61.44	04/01/13	10.54	842.44	--	60.77	0.67
			05/28/13	10.75	842.23	--	60.76	0.68
			08/26/13	10.83	842.15	--	60.72	0.72
			11/18/13	10.87	842.11	--	60.67	0.77
			02/03/14	10.70	842.28	--	60.91	0.53
			08/04/14	11.01	841.97	--	60.92	0.52
			02/23/15	11.13	841.85	--	60.81	0.63
			08/24/15	10.85	842.13	--	60.85	0.59
			02/08/16	10.48	842.50	--	60.84	0.60
			08/22/16	10.96	842.02	--	60.89	0.55
			02/20/17	9.90	843.08	--	60.93	0.51
			08/21/17	11.71	841.27	--	60.90	0.54
			02/12/18	10.59	842.39	--	60.85	0.59
			08/13/18	10.17	842.81	--	60.89	0.55
			02/19/19	10.11	842.87	--	60.95	0.49
MW-2S	854.06	20.22	04/01/13	10.02	844.04	--	16.54	3.68
			05/28/13	10.06	844.00	--	16.20	4.02
			08/26/13	10.03	844.03	--	16.60	3.62
			11/18/13	10.03	844.03	--	17.00	3.22
			02/04/14	10.27	843.79	--	18.50	1.72
			08/04/14	9.79	844.27	--	18.56	1.66
			02/23/15	11.03	843.03	--	18.64	1.58
			08/24/15	9.82	844.24	--	18.49	1.73
			02/08/16	10.03	844.03	--	18.48	1.74
			08/22/16	10.14	843.92	--	18.45	1.77
			02/20/17	8.35	845.71	--	18.50	1.72
			08/21/17	10.23	843.83	--	18.50	1.72
			02/12/18	9.55	844.51	--	18.49	1.73
			08/13/18	9.13	844.93	--	18.49	1.73
			02/19/19	9.71	844.35	--	18.58	1.64
MW-2D	855.66	68.19	04/01/13	14.87	840.79	--	64.51	3.68
			05/28/13	15.16	840.50	--	64.54	3.65
			08/26/13	15.35	840.31	--	64.53	3.66
			11/18/13	15.43	840.23	--	64.44	3.75
			02/03/14	15.09	840.57	--	64.64	3.55
			08/04/14	15.43	840.23	--	67.25	0.94
			02/23/15	15.73	839.93	--	67.17	1.02
			08/24/15	15.32	840.34	--	67.18	1.01
			02/08/16	14.73	840.93	--	67.21	0.98
			08/22/16	15.58	840.08	--	67.21	0.98
			02/20/17	13.89	841.77	--	67.61	0.58
			08/21/17	16.42	839.24	--	67.20	0.99
			02/12/18	15.00	840.66	--	67.18	1.01
			08/13/18	14.17	841.49	--	67.21	0.98
			02/19/19	14.12	841.54	--	67.29	0.90

Table 2
Gauging Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Well ID	Measuring Point Elevation	Actual Depth to Bottom (feet TOC)	Date	Depth to Water (feet TOC)	Groundwater Elevation	Depth to Product (feet TOC)	Depth to Bottom (feet TOC)	Accumulated Thickness of Sediments (feet)
MW-4S	851.47	16.67	04/01/13	7.65	843.69	--	15.65	1.15
			05/28/13	7.80	843.54	--	15.56	1.24
			08/26/13	7.78	843.56	--	15.55	1.25
			11/18/13	7.98	843.36	--	15.30	1.50
			02/03/14	8.09	843.25	--	16.10	0.70
			08/04/14	7.64	843.70	--	15.96	0.75
			02/23/15	9.73	841.74	--	15.88	0.79
			08/24/15	6.97	844.50	--	15.91	0.76
			02/08/16	7.22	844.25	--	15.87	0.80
			08/22/16	7.72	843.75	--	15.90	0.77
			02/20/17	6.61	844.86	--	15.88	0.79
			08/21/17	7.78	843.69	--	15.58	1.09
			02/12/18	6.90	844.57	--	15.90	0.77
			08/13/18	5.70	845.77	--	15.90	0.77
			02/19/19	6.77	844.70	--	15.97	0.70
MW-6S	852.54	24.84	04/01/13	5.41	847.13	--	20.91	3.93
			05/28/13	5.70	846.84	--	20.90	3.94
			08/26/13	5.39	847.15	--	20.85	3.99
			11/18/13	5.68	846.86	--	20.72	4.12
			02/03/14	4.66	847.88	--	24.80	0.04
			08/04/14	5.75	846.79	--	24.80	0.04
			02/23/15	6.71	845.83	--	24.69	0.15
			08/24/15	5.43	847.11	--	24.80	0.04
			02/08/16	5.41	847.13	--	24.77	0.07
			08/22/16	8.56	843.98	--	24.79	0.05
			02/20/17	5.28	847.26	--	24.79	0.05
			08/21/17	8.10	844.44	--	24.99	-0.15
			02/12/18	6.05	846.49	--	24.75	0.09
			08/13/18	5.06	847.48	--	24.80	0.04
			02/19/19	5.29	847.25	--	24.86	-0.02
MW-7	854.14	39.56	04/01/13	10.62	843.52	--	32.80	6.76
			05/28/13	10.71	843.43	--	32.76	6.80
			08/26/13	10.68	843.46	--	33.00	6.56
			11/18/13	10.69	843.45	--	33.07	6.49
			02/03/14	10.68	843.46	--	39.33	0.23
			08/04/14	10.51	843.63	--	39.17	0.39
			02/23/15	10.82	843.32	--	39.18	0.38
			08/24/15	10.62	843.52	--	39.22	0.34
			02/08/16	10.56	843.58	--	38.53	1.03
			08/22/16	10.69	843.45	--	39.04	0.52
			02/20/17	10.31	843.83	--	39.31	0.25
			08/21/17	10.50	843.64	--	38.55	1.01
			02/12/18	10.58	843.56	--	38.19	1.37
			08/13/18	10.28	843.86	--	38.28	1.28
			02/19/19	10.49	843.65	--	39.48	0.08
MW-8S	850.38	14.70	04/01/13	6.76	843.62	--	6.93	7.77
			05/28/13	6.89	843.49	--	6.94	7.76
			08/26/13	6.79	843.59	--	6.98	7.72
			11/18/13	6.85	843.53	--	7.02	7.68
			02/03/14	6.84	843.54	--	14.01	0.69
			08/04/14	6.68	843.70	--	14.02	0.68
			02/23/15	7.09	843.29	--	13.98	0.72
			08/24/15	6.80	843.58	--	14.00	0.70
			02/08/16	6.75	843.63	--	13.98	0.72
			08/22/16	6.85	843.53	--	14.00	0.70
			02/20/17	6.41	843.97	--	13.99	0.71
			08/21/17	6.80	843.58	--	14.00	0.70
			02/12/18	6.70	843.68	--	14.00	0.70
			08/13/18	6.01	844.37	--	14.01	0.69
			02/19/19	6.57	843.81	--	14.06	0.64

Table 2
Gauging Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Well ID	Measuring Point Elevation	Actual Depth to Bottom (feet TOC)	Date	Depth to Water (feet TOC)	Groundwater Elevation	Depth to Product (feet TOC)	Depth to Bottom (feet TOC)	Accumulated Thickness of Sediments (feet)
MW-8D	850.08	69.58	04/01/13	10.17	839.91	--	69.28	0.30
			05/28/13	10.57	839.51	--	69.24	0.34
			08/26/13	10.56	839.52	--	69.30	0.28
			11/18/13	10.73	839.35	--	70.43	-0.85
			02/03/14	10.42	839.66	--	69.36	0.22
			08/04/14	10.68	839.40	--	69.44	0.14
			02/23/15	11.19	838.89	--	70.30	-0.72
			08/24/15	10.61	839.47	--	69.30	0.28
			02/08/16	9.74	840.34	--	69.29	0.29
			08/22/16	11.23	838.85	--	69.31	0.27
			02/20/17	9.79	840.29	--	69.38	0.20
			08/21/17	10.78	839.30	--	69.41	0.17
			02/12/18	10.54	839.54	--	69.25	0.33
			08/13/18	9.46	840.62	--	69.34	0.24
			02/19/19	9.81	840.27	--	69.35	0.23
MW-9S	849.03	14.47	04/01/13	5.67	843.01	--	14.43	0.39
			05/28/13	5.91	842.77	--	14.41	0.41
			08/26/13	6.09	842.59	--	14.50	0.32
			11/18/13	6.32	842.36	--	14.47	0.35
			02/03/14	5.93	842.75	--	14.55	0.27
			08/04/14	5.03	843.65	--	14.40	0.42
			02/23/15	6.89	842.14	--	12.25	2.22
			08/24/15	5.16	843.87	--	14.27	0.20
			02/08/16	5.44	843.59	--	14.95	-0.48
			08/22/16	5.86	843.17	--	14.98	-0.51
			02/20/17	4.38	844.65	--	14.97	-0.50
			08/21/17	6.18	842.85	--	14.97	-0.50
			02/12/18	5.42	843.61	--	14.98	-0.51
			08/13/18	--	--	--	14.96	-0.49
			02/19/19	4.93	--	--	15.01	-0.54
MW-9D	849.06	71.44	04/01/13	8.05	840.67	--	67.96	3.82
			05/28/13	8.36	840.36	--	67.90	3.88
			08/26/13	8.39	840.33	--	67.93	3.85
			11/18/13	8.51	840.21	--	67.89	3.89
			02/03/14	8.20	840.52	--	67.95	3.83
			08/04/14	8.14	840.58	--	72.65	-0.87
			02/23/15	8.85	840.21	--	72.58	-1.14
			08/24/15	8.21	840.85	--	72.60	-1.16
			02/08/16	8.01	841.05	--	72.50	-1.06
			08/22/16	8.62	840.44	--	72.61	-1.17
			02/20/17	7.19	841.87	--	72.64	-1.20
			08/21/17	8.62	840.44	--	72.61	-1.17
			02/12/18	8.62	840.44	--	72.58	-1.14
			08/13/18	--	--	--	72.61	-1.17
			02/19/19	7.38	--	--	72.65	-1.21
MW-0304D	851.18	59.64	04/01/13	9.78	841.40	--	59.60	0.04
			05/28/13	9.89	841.29	--	59.55	0.09
			08/26/13	9.57	841.61	--	59.60	0.04
			11/18/13	9.78	841.40	--	59.58	0.06
			02/03/14	9.78	841.40	--	59.65	-0.01
			08/04/14	10.00	841.18	--	59.58	0.06
			02/23/15	10.35	840.83	--	59.56	0.08
			08/24/15	9.95	841.23	--	59.55	0.09
			02/08/16	9.51	841.67	--	59.50	0.14
			08/22/16	10.48	840.70	--	59.59	0.05
			02/20/17	8.81	842.37	--	59.50	0.14
			08/21/17	10.89	840.29	--	59.32	0.32
			02/12/18	9.70	841.48	--	59.42	0.22
			08/13/18	9.05	842.13	--	59.54	0.10
			02/19/19	8.90	842.28	--	59.62	0.02

Table 2
Gauging Data

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Madison Avenue Former MGP Site, Elmira, New York

Well ID	Measuring Point Elevation	Actual Depth to Bottom (feet TOC)	Date	Depth to Water (feet TOC)	Groundwater Elevation	Depth to Product (feet TOC)	Depth to Bottom (feet TOC)	Accumulated Thickness of Sediments (feet)
MW-0402S	850.09	22.38	04/01/13	7.78	842.31	--	22.48	-0.10
			05/28/13	7.89	842.20	--	22.49	-0.11
			08/26/13	7.97	842.12	--	22.50	-0.12
			11/18/13	8.15	841.94	--	22.49	-0.11
			02/03/14	7.94	842.15	--	22.54	-0.16
			08/04/14	7.39	842.70	--	22.55	-0.17
			02/23/15	8.36	841.73	--	22.48	-0.10
			08/24/15	7.65	842.44	--	22.51	-0.13
			02/08/16	7.77	842.32	--	22.50	-0.12
			08/22/16	7.93	842.16	--	22.52	-0.14
			02/20/17	7.30	842.79	--	22.51	-0.13
			08/21/17	7.95	842.14	--	22.50	-0.12
			02/12/18	7.89	842.20	--	22.52	-0.14
			08/13/18	6.69	843.40	--	22.52	-0.14
			02/19/19	7.55	842.54	--	22.62	-0.24
MW-0403S	849.66	39.32	04/01/13	9.45	840.21	--	39.40	-0.08
			05/28/13	9.75	839.91	--	39.36	-0.04
			08/26/13	9.81	839.85	--	39.32	0.00
			11/18/13	9.97	839.69	--	39.34	-0.02
			02/03/14	9.54	840.12	--	39.38	-0.06
			08/04/14	9.49	840.17	--	39.39	-0.07
			02/23/15	10.05	839.61	--	39.30	0.02
			08/24/15	9.62	840.04	--	39.33	-0.01
			02/08/16	9.48	840.18	--	39.34	-0.02
			08/22/16	9.83	839.83	--	39.35	-0.03
			02/20/17	8.25	841.41	--	39.31	0.01
			08/21/17	9.92	839.74	--	39.33	-0.01
			02/12/18	9.41	840.25	--	39.30	0.02
			08/13/18	8.64	841.02	--	39.34	-0.02
			02/19/19	8.84	840.82	--	39.41	-0.09
MW-0404S	849.99	28.57	04/01/13	9.71	840.28	--	27.94	0.63
			05/28/13	10.02	839.97	--	27.89	0.68
			08/26/13	10.06	839.93	--	27.81	0.76
			11/18/13	10.19	839.80	--	27.85	0.72
			02/03/14	9.80	840.19	--	28.25	0.32
			08/04/14	9.71	840.28	--	28.20	0.37
			02/23/15	10.39	839.60	--	28.20	0.37
			08/24/15	9.82	840.17	--	28.22	0.35
			02/08/16	9.70	840.29	--	28.20	0.37
			08/22/16	10.13	839.86	--	28.22	0.35
			02/20/17	8.98	841.01	--	28.25	0.32
			08/21/17	10.19	839.80	--	28.18	0.39
			02/12/18	9.71	840.28	--	28.20	0.37
			08/13/18	8.84	841.15	--	28.20	0.37
			02/19/19	9.07	840.92	--	28.29	0.28
MW-0404D	849.55	59.77	04/01/13	9.45	840.10	--	59.43	0.34
			05/28/13	9.89	839.66	--	59.45	0.32
			08/26/13	9.94	839.61	--	59.38	0.39
			11/18/13	10.22	839.33	--	60.21	-0.44
			02/03/14	9.73	839.82	--	59.40	0.37
			08/04/14	9.67	839.88	--	59.40	0.37
			02/23/15	10.50	839.05	--	59.33	0.44
			08/24/15	9.74	839.81	--	59.40	0.37
			02/08/16	9.35	840.20	--	59.20	0.57
			08/22/16	10.26	839.29	--	59.30	0.47
			02/20/17	8.35	841.20	--	59.21	0.56
			08/21/17	10.28	839.27	--	59.88	-0.11
			02/12/18	9.71	839.84	--	59.25	0.52
			08/13/18	8.23	841.32	--	59.35	0.42
			02/19/19	8.64	840.91	--	59.39	0.38

Table 2
Gauging Data

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Madison Avenue Former MGP Site, Elmira, New York

Well ID	Measuring Point Elevation	Actual Depth to Bottom (feet TOC)	Date	Depth to Water (feet TOC)	Groundwater Elevation	Depth to Product (feet TOC)	Depth to Bottom (feet TOC)	Accumulated Thickness of Sediments (feet)
MW-0405S	850.59	35.27	04/01/13	10.33	840.26	--	35.43	-0.16
			05/28/13	10.81	839.78	--	35.44	-0.17
			08/26/13	10.83	839.76	--	35.38	-0.11
			11/18/13	11.16	839.43	--	35.41	-0.14
			02/03/14	10.66	839.93	--	35.50	-0.23
			08/04/14	10.61	839.98	--	35.42	-0.15
			02/23/15	11.54	839.05	--	35.39	-0.12
			08/24/15	10.43	840.16	--	35.44	-0.17
			02/08/16	10.25	840.34	--	35.41	-0.14
			08/22/16	11.20	839.39	--	35.44	-0.17
			02/20/17	9.03	841.56	--	35.48	-0.21
			08/21/17	11.12	839.47	--	35.37	-0.10
			02/12/18	10.52	840.07	--	35.42	-0.15
			08/13/18	8.88	841.71	--	35.45	-0.18
			02/19/19	9.38	841.21	--	35.52	-0.25
AW-1	850.94	19.78	04/01/13	7.04	843.90	--	20.00	-0.22
			05/28/13	7.05	843.89	--	19.99	-0.21
			08/26/13	7.00	843.94	--	19.92	-0.14
			11/18/13	7.17	843.77	--	19.91	-0.13
			02/03/14	7.21	843.73	--	19.94	-0.16
			08/04/14	6.74	844.20	--	19.91	-0.13
			02/23/15	7.42	843.52	--	19.83	-0.05
			08/24/15	6.79	844.15	--	19.59	0.19
			02/08/16	6.85	844.09	--	19.68	0.10
			08/22/16	7.00	843.94	--	19.69	0.09
			02/20/17	6.16	844.78	--	19.55	0.23
			08/21/17	7.04	843.90	--	19.89	-0.11
			02/12/18	6.80	844.14	--	19.55	0.23
AW-2	851.23	20.04	04/01/13	7.51	843.44	--	20.17	0.15
			05/28/13	7.25	843.70	--	20.19	0.13
			08/26/13	7.61	843.34	--	20.18	0.14
			11/18/13	7.76	843.19	--	20.15	0.17
			02/03/14	7.75	843.20	--	20.13	0.19
			08/04/14	6.91	844.04	--	20.09	0.23
			02/23/15	8.43	842.80	--	20.10	-0.06
			08/24/15	6.91	844.32	--	19.96	0.08
			02/08/16	7.29	843.94	--	20.06	-0.02
			08/22/16	7.35	843.88	--	20.08	-0.04
			02/20/17	6.19	845.04	--	19.65	0.39
			08/21/17	7.03	844.20	--	20.12	-0.08
			02/12/18	6.85	844.38	--	19.50	0.54
AW-3	850.38	19.10	04/01/13	6.83	843.55	--	19.59	-0.49
			05/28/13	6.84	843.54	--	19.60	-0.50
			08/26/13	7.02	843.36	--	19.55	-0.45
			11/18/13	6.98	843.40	--	19.81	-0.71
			02/03/14	6.94	843.44	--	19.59	-0.49
			08/04/14	6.31	844.07	--	19.53	-0.43
			02/23/15	7.47	842.91	--	19.50	-0.40
			08/24/15	6.27	844.11	--	19.33	-0.23
			02/08/16	6.63	843.75	--	19.08	0.02
			08/22/16	6.68	843.70	--	18.62	0.48
			02/20/17	5.64	844.74	--	18.63	0.47
			08/21/17	--	--	--	--	--
			02/12/18	6.58	843.80	--	18.58	0.52

Table 2
Gauging Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Well ID	Measuring Point Elevation	Actual Depth to Bottom (feet TOC)	Date	Depth to Water (feet TOC)	Groundwater Elevation	Depth to Product (feet TOC)	Depth to Bottom (feet TOC)	Accumulated Thickness of Sediments (feet)
AW-4	850.62	19.77	04/01/13	6.30	844.08	--	20.01	-0.24
			05/28/13	6.22	844.16	--	19.83	-0.06
			08/26/13	6.91	843.71	--	19.96	-0.19
			11/18/13	7.74	842.88	--	19.97	-0.20
			02/03/14	7.50	843.12	--	19.98	-0.21
			08/04/14	5.49	845.13	--	19.75	0.02
			02/23/15	8.47	842.15	--	19.73	0.04
			08/24/15	5.91	844.71	--	19.78	-0.01
			02/08/16	6.57	844.05	--	19.56	0.21
			08/22/16	5.93	844.69	--	19.65	0.12
			02/20/17	5.49	845.13	--	19.45	0.32
			08/21/17	7.20	843.42	--	19.42	0.35
			02/12/18	6.09	844.53	--	19.58	0.19
AW-5	850.38	19.80	04/01/13	7.16	843.22	--	19.78	0.02
			05/28/13	7.24	843.14	--	19.73	0.07
			08/26/13	7.30	843.08	--	19.73	0.07
			11/18/13	7.71	842.67	--	19.70	0.10
			02/03/14	7.26	843.12	--	19.75	0.05
			08/04/14	6.81	843.57	--	19.75	0.05
			02/23/15	8.42	841.96	--	19.64	0.16
			08/24/15	6.83	843.55	--	19.71	0.09
			02/08/16	6.84	843.54	--	19.62	0.18
			08/22/16	7.37	843.01	--	19.21	0.59
			02/20/17	5.61	844.77	--	19.10	0.70
			08/21/17	7.22	843.16	--	19.33	0.47
			02/12/18	6.98	843.40	--	19.06	0.74
AW-6	849.85	19.28	04/01/13	7.72	842.13	--	19.04	0.24
			05/28/13	7.87	841.98	--	19.10	0.18
			08/26/13	7.87	841.98	--	19.03	0.25
			11/18/13	8.24	841.61	--	18.98	0.30
			02/03/14	7.77	842.08	--	19.02	0.26
			08/04/14	7.45	842.40	--	19.02	0.26
			02/23/15	8.64	841.21	--	18.79	0.49
			08/24/15	7.38	842.47	--	18.99	0.29
			02/08/16	7.11	842.74	--	18.72	0.56
			08/22/16	7.91	841.94	--	18.57	0.71
			02/20/17	6.15	843.70	--	18.43	0.85
			08/21/17	7.82	842.03	--	18.72	0.56
			02/12/18	7.04	842.81	--	18.55	0.73
AW-7	849.72	18.74	04/01/13	8.49	841.23	--	18.86	-0.12
			05/28/13	8.72	841.00	--	18.85	-0.11
			08/26/13	8.72	841.00	--	18.82	-0.08
			11/18/13	9.00	840.72	--	18.80	-0.06
			02/03/14	8.59	841.13	--	18.85	-0.11
			08/04/14	8.43	841.29	--	18.82	-0.08
			02/23/15	9.32	840.40	--	18.75	-0.01
			08/24/15	8.46	841.26	--	18.81	-0.07
			02/08/16	8.10	841.62	--	18.38	0.36
			08/22/16	9.02	840.70	--	18.41	0.33
			02/20/17	7.15	842.57	--	18.44	0.30
			08/21/17	8.73	840.99	--	18.40	0.34
			02/12/18	8.19	841.53	--	18.35	0.39

Table 2
Gauging Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Well ID	Measuring Point Elevation	Actual Depth to Bottom (feet TOC)	Date	Depth to Water (feet TOC)	Groundwater Elevation	Depth to Product (feet TOC)	Depth to Bottom (feet TOC)	Accumulated Thickness of Sediments (feet)
AW-8	849.78	19.32	04/01/13	8.86	840.92	--	19.35	-0.03
			05/28/13	9.07	840.71	--	19.34	-0.02
			08/26/13	9.13	840.65	--	19.31	0.01
			11/18/13	9.35	840.43	--	19.25	0.07
			02/03/14	8.90	840.88	--	19.22	0.10
			08/04/14	8.71	841.07	--	19.20	0.12
			02/23/15	9.55	840.23	--	18.85	0.47
			08/24/15	8.76	841.02	--	18.85	0.47
			02/08/16	8.41	841.37	--	18.88	0.44
			08/22/16	9.30	840.48	--	18.98	0.34
			02/20/17	7.45	842.33	--	18.84	0.48
			08/21/17	9.08	840.70	--	18.89	0.43
			02/12/18	8.52	841.26	--	18.82	0.50
AW-9	849.61	22.27	04/01/13	8.30	841.31	--	22.22	0.05
			05/28/13	9.00	840.61	--	21.88	0.39
			08/26/13	9.05	840.56	--	21.92	0.35
			11/18/13	9.21	840.40	--	22.11	0.16
			02/03/14	8.87	840.74	--	22.10	0.17
			08/04/14	8.73	840.88	--	21.92	0.35
			02/23/15	9.54	840.07	--	21.71	0.56
			08/24/15	8.89	840.72	--	21.78	0.49
			02/08/16	8.39	841.22	--	21.26	1.01
			08/22/16	9.32	840.29	--	21.30	0.97
			02/20/17	7.39	842.22	--	22.30	-0.03
			08/21/17	9.02	840.59	--	22.18	0.09
			02/12/18	8.50	841.11	--	19.92	2.35
AW-10	849.60	24.20	04/01/13	9.18	840.42	--	24.28	-0.08
			05/28/13	9.42	840.18	--	24.27	-0.07
			08/26/13	9.51	840.09	--	24.20	0.00
			11/18/13	9.91	839.69	--	24.20	0.00
			02/03/14	9.25	840.35	--	24.18	0.02
			08/04/14	9.45	840.15	--	24.19	0.01
			02/23/15	9.67	839.93	--	23.76	0.44
			08/24/15	9.06	840.54	--	24.10	0.10
			02/08/16	8.92	840.68	--	23.54	0.66
			08/22/16	9.50	840.10	--	23.65	0.55
			02/20/17	7.84	841.76	--	23.74	0.46
			08/21/17	9.04	840.56	--	24.12	0.08
			02/12/18	8.72	840.88	--	22.90	1.30
AW-11	849.49	24.27	04/01/13	8.99	840.50	--	24.14	0.13
			05/28/13	9.22	840.27	--	24.13	0.14
			08/26/13	9.34	840.15	--	24.02	0.25
			11/18/13	9.45	840.04	--	24.06	0.21
			02/03/14	9.01	840.48	--	24.10	0.17
			08/04/14	9.01	840.48	--	24.02	0.25
			02/23/15	9.71	839.78	--	23.50	0.77
			08/24/15	9.05	840.44	--	23.95	0.32
			02/08/16	8.76	840.73	--	23.48	0.79
			08/22/16	9.42	840.07	--	22.79	1.48
			02/20/17	7.45	842.04	--	23.28	0.99
			08/21/17	9.36	840.13	--	23.33	0.94
			02/12/18	8.92	840.57	--	22.57	1.70

Table 2
Gauging Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Well ID	Measuring Point Elevation	Actual Depth to Bottom (feet TOC)	Date	Depth to Water (feet TOC)	Groundwater Elevation	Depth to Product (feet TOC)	Depth to Bottom (feet TOC)	Accumulated Thickness of Sediments (feet)
AW-12	849.19	37.58	04/01/13	8.68	840.51	--	37.67	-0.09
			05/28/13	9.00	840.19	--	37.68	-0.10
			08/26/13	9.15	840.04	--	37.50	0.08
			11/18/13	9.29	839.90	--	37.50	0.08
			02/03/14	8.90	840.29	--	37.52	0.06
			08/04/14	8.78	840.41	--	37.15	0.43
			02/23/15	9.49	839.70	--	36.92	0.66
			08/24/15	8.93	840.26	--	37.10	0.48
			02/08/16	8.70	840.49	--	36.79	0.79
			08/22/16	9.30	839.89	--	35.74	1.84
			02/20/17	7.73	841.46	--	35.72	1.86
			08/21/17	9.26	839.93	--	35.69	1.89
			02/12/18	8.82	840.37	--	35.00	2.58
AW-13	849.07	27.46	04/01/13	8.59	840.48	--	27.40	0.06
			05/28/13	9.42	839.65	--	27.34	0.12
			08/26/13	8.98	840.09	--	27.24	0.22
			11/18/13	9.10	839.97	--	27.28	0.18
			02/03/14	8.72	840.35	--	27.32	0.14
			08/04/14	8.59	840.48	--	27.26	0.20
			02/23/15	9.32	839.75	--	26.97	0.49
			08/24/15	8.63	840.44	--	27.16	0.30
			02/08/16	8.42	840.65	--	25.85	1.61
			08/22/16	9.06	840.01	--	26.40	1.06
			02/20/17	7.65	841.42	--	27.40	0.06
			08/21/17	9.05	840.02	--	27.31	0.15
			02/12/18	8.59	840.48	--	26.95	0.51
AW-14	849.45	28.88	04/01/13	8.86	840.59	--	30.90	-2.02
			05/28/13	9.22	840.23	--	30.57	-1.69
			08/26/13	9.27	840.18	--	30.54	-1.66
			11/18/13	9.34	840.11	--	30.57	-1.69
			02/03/14	8.99	840.46	--	30.44	-1.56
			08/04/14	8.83	840.62	--	30.30	-1.42
			02/23/15	9.58	839.87	--	29.70	-0.82
			08/24/15	9.00	840.45	--	30.40	-1.52
			02/08/16	8.78	840.67	--	29.40	-0.52
			08/22/16	9.32	840.13	--	29.42	-0.54
			02/20/17	7.95	841.50	--	29.62	-0.74
			08/21/17	9.34	840.11	--	29.59	-0.71
			02/12/18	8.73	840.72	--	28.78	0.10
AW-15	849.11	34.68	04/01/13	8.67	840.44	--	34.57	0.11
			05/28/13	8.92	840.19	--	34.40	0.28
			08/26/13	9.02	840.09	--	34.20	0.48
			11/18/13	9.23	839.88	--	34.42	0.26
			02/03/14	8.75	840.36	--	33.85	0.83
			08/04/14	8.72	840.39	--	34.42	0.26
			02/23/15	9.40	839.71	--	33.89	0.79
			08/24/15	8.80	840.31	--	34.16	0.52
			02/08/16	8.59	840.52	--	33.62	1.06
			08/22/16	9.10	840.01	--	32.85	1.83
			02/20/17	7.76	841.35	--	34.49	0.19
			08/21/17	9.12	839.99	--	34.48	0.20
			02/12/18	8.70	840.41	--	34.20	0.48

Table 2
Gauging Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Well ID	Measuring Point Elevation	Actual Depth to Bottom (feet TOC)	Date	Depth to Water (feet TOC)	Groundwater Elevation	Depth to Product (feet TOC)	Depth to Bottom (feet TOC)	Accumulated Thickness of Sediments (feet)
AW-16	849.12	34.80	04/01/13	8.56	840.56	--	34.44	0.36
			05/28/13	8.72	840.40	--	34.31	0.49
			08/26/13	8.85	840.27	--	34.20	0.60
			11/18/13	8.97	840.15	--	34.25	0.55
			02/03/14	8.60	840.52	--	34.23	0.57
			08/04/14	8.44	840.68	--	34.45	0.35
			02/23/15	9.14	839.98	--	31.78	3.02
			08/24/15	8.60	840.52	--	34.46	0.34
			02/08/16	8.44	840.68	--	31.97	2.83
			08/22/16	8.98	840.14	--	31.03	3.77
			02/20/17	7.78	841.34	--	34.50	0.30
			08/21/17	8.93	840.19	--	34.16	0.64
			02/12/18	8.57	840.55	--	33.62	1.18
AW-17	849.08	31.84	04/01/13	8.53	840.55	--	34.56	-2.72
			05/28/13	8.75	840.33	--	31.34	0.50
			08/26/13	8.81	840.27	--	31.52	0.32
			11/18/13	8.99	840.09	--	31.43	0.41
			02/03/14	8.62	840.46	--	31.10	0.74
			08/04/14	8.45	840.63	--	31.27	0.57
			02/23/15	9.13	839.95	--	30.49	1.35
			08/24/15	8.67	840.41	31.02	31.22	0.62
			11/18/15	8.45	840.63	TR	31.04	0.80
			02/08/16	8.54	840.54	TR	31.10	0.74
			05/12/16	8.49	840.59	TR	28.48	3.36
			08/22/16	8.91	840.17	TR	30.57	1.27
			11/17/16	8.81	840.27	TR	27.70	4.14
			02/20/17	7.70	841.38	TR	31.25	0.59
			08/21/17	8.95	840.13	TR	31.25	0.59
			02/12/18	8.50	840.58	TR	30.52	1.32
			05/17/18	8.30	840.78	29.40	30.90	0.94
			08/13/18	--	--	TR	27.40	4.44
			11/18/18	7.65	841.43	TR	27.30	4.54
			02/19/19	--	--	TR	27.25	4.59
AW-18	848.81	33.51	04/01/13	7.94	840.87	--	33.75	-0.24
			05/28/13	7.49	841.32	--	33.75	-0.24
			08/26/13	8.36	840.45	--	33.69	-0.18
			11/18/13	8.62	840.19	--	33.67	-0.16
			02/03/14	8.10	840.71	--	33.40	0.11
			08/04/14	6.78	842.03	--	33.15	0.36
			02/23/15	8.73	840.08	--	32.95	0.56
			08/24/15	7.83	840.98	--	33.01	0.50
			02/08/16	7.05	841.76	--	32.10	1.41
			08/22/16	8.25	840.56	--	31.81	1.70
			02/20/17	6.99	841.82	--	33.80	-0.29
			08/21/17	8.50	840.31	--	32.20	1.31
			02/12/18	7.49	841.32	--	30.92	2.59
AW-19	849.01	34.33	04/01/13	7.99	841.02	--	33.91	0.42
			05/28/13	8.29	840.72	--	33.89	0.44
			08/26/13	8.59	840.42	--	33.87	0.46
			11/18/13	8.74	840.27	--	33.90	0.43
			02/03/14	8.27	840.74	--	33.15	1.18
			08/04/14	7.39	841.62	--	34.05	0.28
			02/23/15	8.85	840.16	--	32.74	1.59
			08/24/15	8.44	840.57	--	34.05	0.28
			02/08/16	8.22	840.79	--	33.55	0.78
			08/22/16	8.28	840.73	--	33.15	1.18
			02/20/17	7.20	841.81	--	31.58	2.75
			08/21/17	8.71	840.30	--	31.00	3.33
			02/12/18	8.05	840.96	--	29.82	4.51

Table 2
Gauging Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Well ID	Measuring Point Elevation	Actual Depth to Bottom (feet TOC)	Date	Depth to Water (feet TOC)	Groundwater Elevation	Depth to Product (feet TOC)	Depth to Bottom (feet TOC)	Accumulated Thickness of Sediments (feet)
PMW-1	851.19	18.81	04/01/13	7.78	843.41	--	19.24	-0.43
			05/28/13	7.89	843.30	--	19.35	-0.54
			08/26/13	8.02	843.17	--	19.29	-0.48
			11/18/13	8.35	842.84	--	19.41	-0.60
			02/03/14	7.97	843.22	--	19.38	-0.57
			08/04/14	7.50	843.69	--	19.32	-0.51
			02/23/15	9.21	841.98	--	19.29	-0.48
			08/24/15	7.53	843.66	--	19.36	-0.55
			02/08/16	7.56	843.63	--	19.34	-0.53
			08/22/16	8.05	843.14	--	19.40	-0.59
			02/20/17	6.33	844.86	--	19.30	-0.49
			08/21/17	7.99	843.20	--	19.35	-0.54
			02/12/18	7.64	843.55	--	19.92	-1.11
PMW-2	849.93	19.76	04/01/13	5.45	844.40	--	19.67	0.17
			05/28/13	5.01	844.84	--	19.65	0.19
			08/26/13	6.00	843.85	--	19.64	0.20
			11/18/13	5.68	844.17	--	19.62	0.22
			02/03/14	6.44	843.41	--	19.62	0.22
			08/04/14	4.96	844.89	--	19.53	0.31
			02/23/15	7.25	842.68	--	19.23	0.53
			08/24/15	4.98	844.95	--	19.24	0.52
			02/08/16	5.44	844.49	--	19.21	0.55
			08/22/16	5.00	844.93	--	19.18	0.58
			02/20/17	4.68	845.25	--	19.15	0.61
			08/21/17	5.58	844.35	--	19.21	0.55
			02/12/18	5.11	844.82	--	18.80	0.96
PMW-3	849.64	19.29	04/01/13	8.45	841.19	--	14.60	4.69
			05/28/13	8.98	840.66	--	15.33	3.96
			08/26/13	8.73	840.91	--	15.41	3.88
			11/18/13	8.76	840.88	--	15.15	4.14
			02/03/14	8.37	841.27	--	18.19	1.10
			08/04/14	7.75	841.89	--	15.35	3.94
			02/23/15	9.36	840.28	--	14.29	5.00
			05/22/15	7.33	842.31	--	19.29	0.00
			08/24/15	8.35	841.29	--	14.26	5.03
			11/18/15	7.51	842.13	--	14.18	5.11
			02/08/16	7.76	841.88	--	14.10	5.19
			05/12/16	7.40	842.24	--	14.04	5.25
			08/22/16	9.31	840.33	--	14.12	5.17
			11/17/16	8.13	841.51	--	14.22	5.07
			02/20/17	5.84	843.80	--	18.95	0.34
			08/21/17	8.95	840.69	--	19.26	0.03
			02/12/18	8.25	841.39	--	18.50	0.79
PMW-4	850.02	19.78	04/01/13	9.20	840.82	--	19.85	-0.07
			05/28/13	9.45	840.57	--	19.85	-0.07
			08/26/13	9.51	840.51	--	19.85	-0.07
			11/18/13	9.73	840.29	--	19.81	-0.03
			02/03/14	9.26	840.76	--	19.82	-0.04
			08/04/14	9.13	840.89	--	19.86	-0.08
			02/23/15	9.70	840.32	--	19.81	-0.03
			08/24/15	9.19	840.83	--	19.80	-0.02
			02/08/16	8.83	841.19	--	19.80	-0.02
			08/22/16	9.71	840.31	--	19.81	-0.03
			02/20/17	7.70	842.32	--	19.80	-0.02
			08/21/17	9.40	840.62	--	19.82	-0.04
			02/12/18	8.89	841.13	--	19.81	-0.03

Table 2
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PMW-5	849.08	32.77	04/01/13	8.58	840.50	--	32.65	0.12
			05/28/13	8.77	840.31	--	32.36	0.41
			08/26/13	8.95	840.13	--	32.26	0.51
			11/18/13	9.11	839.97	--	32.20	0.57
			02/03/14	8.74	840.34	--	32.30	0.47
			08/04/14	8.60	840.48	--	32.69	0.08
			02/23/15	9.25	839.83	--	31.69	1.08
			08/24/15	8.70	840.38	--	33.65	-0.88
			02/08/16	8.57	840.51	--	32.50	0.27
			08/22/16	9.00	840.08	--	32.49	0.28
			02/20/17	7.75	841.33	--	32.34	0.43
			08/21/17	9.04	840.04	--	32.34	0.43
			02/12/18	8.58	840.50	--	30.40	2.37
PMW-6	849.59	38.81	04/01/13	9.19	840.40	--	37.97	0.84
			05/28/13	9.35	840.24	--	37.45	1.36
			08/26/13	9.50	840.09	--	37.35	1.46
			11/18/13	9.68	839.91	--	37.23	1.58
			02/03/14	9.23	840.36	--	37.25	1.56
			08/04/14	9.19	840.40	--	38.33	0.48
			02/23/15	9.90	839.69	--	38.06	0.75
			08/24/15	9.29	840.30	--	38.32	0.49
			02/08/16	9.09	840.50	--	38.10	0.71
			08/22/16	9.65	839.94	--	38.10	0.71
			02/20/17	8.28	841.31	--	38.10	0.71
			08/21/17	9.32	840.27	--	37.90	0.91
			02/12/18	9.20	840.39	--	37.90	0.91
NMW-0402S	849.77	31.29	04/01/13	9.24	840.53	29.87	31.07	0.22
			05/28/13	9.59	840.18	30.77	31.17	0.12
			08/26/13	9.89	839.88	29.25	31.25	0.04
			11/18/13	9.98	839.79	29.25	31.25	0.04
			02/03/14	5.42	844.35	30.08	31.28	0.01
			05/30/14	8.75	841.02	29.92	31.41	-0.12
			08/04/14	9.48	840.29	29.93	31.33	-0.04
			11/20/14	10.08	839.69	30.28	31.38	-0.09
			02/23/15	10.13	839.64	30.15	31.35	-0.06
			05/22/15	9.10	840.67	30.88	31.38	-0.09
			08/24/15	9.55	840.22	31.03	31.38	-0.09
			11/18/15	9.02	840.75	--	31.39	-0.10
			02/08/16	9.21	840.56	31.04	31.44	-0.15
			05/12/16	8.89	840.88	31.24	31.45	-0.16
			08/22/16	9.83	839.94	31.02	31.43	-0.14
			11/17/16	9.68	840.09	30.96	31.46	-0.17
			02/20/17	8.21	841.56	31.00	31.50	-0.21
			08/21/17	10.36	839.41	30.73	31.33	-0.04
			02/12/18	9.44	840.33	30.88	31.55	-0.26
			05/17/18	8.95	840.82	31.20	31.59	-0.30
			08/13/18	7.36	842.41	30.75	31.58	-0.29
			11/15/18	7.95	841.82	31.07	31.57	-0.28
			02/19/19	8.54	841.23	31.12	31.54	-0.25

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NRW-1	852.45	33.74	04/01/13	11.21	841.15	--	33.82	0.01
			05/28/13	11.48	840.88	--	33.75	0.08
			08/26/13	11.42	840.94	--	33.70	0.13
			11/18/13	11.61	840.75	--	33.68	0.15
			02/03/14	11.29	841.07	--	33.75	0.08
			05/30/14	10.87	841.07	--	33.62	0.08
			08/04/14	11.11	841.25	--	33.65	0.18
			11/20/14	11.54	840.91	--	33.59	0.15
			02/23/15	11.62	840.83	--	33.46	0.28
			05/22/15	10.96	841.49	--	33.46	0.28
			08/24/15	11.06	841.39	--	33.45	0.29
			11/18/15	10.68	841.77	--	33.45	0.29
			02/08/16	10.80	841.65	--	33.46	0.28
			05/12/16	10.77	841.68	--	33.48	0.26
			08/22/16	11.34	841.11	--	33.45	0.29
			11/17/16	11.25	841.20	--	33.51	0.23
			02/20/17	9.05	843.40	--	33.41	0.33
			08/21/17	11.36	841.09	--	33.40	0.34
			02/12/18	10.37	842.08	--	33.41	0.33
			05/17/18	10.80	841.65	--	33.33	0.41
			08/13/18	9.75	842.70	--	33.35	0.39
			11/15/18	9.76	842.69	--	33.62	0.12
			02/19/19	9.70	842.75	--	33.58	0.16
NRW-2	849.80	58.25	04/01/13	9.36	840.44	57.54	57.87	0.38
			05/28/13	9.62	840.18	--	57.31	0.94
			08/26/13	9.80	840.00	56.73	57.20	1.05
			11/18/13	9.98	839.82	56.93	57.63	0.62
			02/03/14	7.20	842.60	--	57.70	0.55
			05/30/14	8.94	840.86	--	57.92	0.33
			08/04/14	9.46	840.34	56.61	57.81	0.44
			11/20/14	10.05	839.75	57.44	57.83	0.42
			02/23/15	10.13	839.67	57.30	57.70	0.55
			05/22/15	9.23	840.57	--	57.80	0.45
			08/24/15	9.50	840.30	--	57.82	0.43
			11/18/15	9.12	840.68	--	57.82	0.43
			02/08/16	9.31	840.49	56.74	57.84	0.41
			05/12/16	9.17	840.63	56.92	57.92	0.33
			08/22/16	9.94	839.86	57.37	57.88	0.37
			11/17/16	9.71	840.09	57.42	57.92	0.33
			02/20/17	8.44	841.36	57.03	57.93	0.32
			08/21/17	10.85	838.95	57.39	58.09	0.16
			02/12/18	9.40	840.40	56.59	58.09	0.16
			05/17/18	9.10	840.70	--	58.05	0.20
			08/13/18	6.36	843.44	57.70	58.12	0.13
			11/15/18	8.24	841.56	56.10	58.10	0.15
			02/19/19	8.72	841.08	57.28	58.12	0.13

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NRW-3	849.78	53.76	04/01/13	9.33	840.45	--	52.97	0.79
			05/28/13	9.59	840.19	--	52.49	1.27
			08/26/13	9.77	840.01	--	52.13	1.63
			11/18/13	9.93	839.85	--	52.34	1.42
			02/03/14	9.43	840.35	--	52.30	1.46
			05/30/14	8.93	840.85	--	52.24	1.52
			08/04/14	9.44	840.34	--	52.12	1.64
			11/20/14	10.02	839.76	--	52.23	1.53
			02/23/15	10.10	839.68	--	52.32	1.44
			05/22/15	9.22	840.56	--	52.09	1.67
			08/24/15	9.49	840.29	--	53.78	-0.02
			11/18/15	9.97	839.81	--	53.12	0.64
			02/08/16	9.25	840.53	--	52.90	0.86
			05/12/16	9.10	840.68	--	52.93	0.83
			08/22/16	9.88	839.90	--	53.00	0.76
			11/17/16	9.69	840.09	--	53.00	0.76
			02/20/17	8.35	841.43	--	53.90	-0.14
			08/21/17	10.92	838.86	--	53.88	-0.12
			02/12/18	9.32	840.46	--	53.03	0.73
			05/17/18	9.00	840.78	--	53.10	0.66
			08/13/18	6.53	843.25	--	53.03	0.73
			11/15/18	8.19	841.59	--	53.87	-0.11
			02/19/19	8.56	841.22	--	53.00	0.76

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NRW-4	849.52	56.68	04/01/13	9.06	840.46	--	57.40	-0.72
			05/28/13	9.35	840.17	--	57.34	-0.66
			08/26/13	9.53	839.99	--	56.57	0.11
			11/18/13	9.69	839.83	--	56.59	0.09
			02/03/14	9.21	840.31	--	56.99	-0.31
			05/30/14	8.66	840.86	--	56.64	0.04
			08/04/14	9.18	840.34	--	56.58	0.10
			11/20/14	9.76	839.76	--	56.62	0.06
			02/23/15	9.88	839.64	--	56.40	0.28
			05/22/15	8.83	840.69	--	56.48	0.20
			08/24/15	9.23	840.29	--	57.05	-0.37
			11/18/15	8.82	840.70	--	56.55	0.13
			02/08/16	8.98	840.54	--	56.55	0.13
			05/12/16	8.82	840.70	--	56.33	0.35
			08/22/16	9.64	839.88	--	56.69	-0.01
			11/17/16	9.42	840.10	--	56.40	0.28
			02/20/17	8.10	841.42	--	57.30	-0.62
			08/21/17	9.70	839.82	--	57.37	-0.69
			02/12/18	9.18	840.34	--	56.52	0.16
			05/17/18	8.75	840.77	--	57.50	-0.82
			08/13/18	6.56	842.96	--	56.78	-0.10
			11/15/18	7.90	841.62	--	57.44	-0.76
			02/19/19	8.29	841.23	--	57.04	-0.36

Notes:

All measurements from Top of Casing (TOC).

Elevations in feet above mean sea level (ft amsl), 1988 North American Vertical Datum (NAVD88).

-- Indicates measurement not taken or not avaliable.

Due to well repairs, MW-4S, MW-9S, MW-9D, AW-2, PMW-2, and NRW-1 were resurveyed during the August 2014 site visit but after the gauging dated 8/4/2014. *Measuring Point Elevations* and *Actual Depth to Bottom* values have been updated and used starting with the gauging dated 2/23/2015.

TR - Indicates DNAPL product observed but not in a quantifiable amount.

AW-03 was not safely accessible on February 12, 2018 due to a nearby nest of ground bees.

MW-9S and MW-9D were underwater on 8/13/18 and the depth to water was not able to be gauged.

Table 3
Groundwater Analytical Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Location ID:	NYSDEC TOGS 1.1.1 Std. or Guidance Values	Units	MW-2S											
			Historical	Baseline	Q2	Q4	Q6	Q8	Q10	Q12	Q14	Q16	Q18	Q20
Date Collected:			04/21/04	04/04/13	08/27/13	02/06/14	08/06/14	02/26/15	08/27/15	02/11/16	08/25/16	02/23/17	08/24/17	02/15/18
BTEX														
Benzene	1	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	µg/L	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	µg/L	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	5	ug/L	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Total BTEX	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs														
Acenaphthene	20 (GV)	µg/L	10 U	4.8 U	4.8 U	4.8 U	10 UJ	4.8 U	4.7 U	4.9 U	4.9 U	5 U	5 U	5 U
Acenaphthylene	- -	µg/L	10 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 UJ	5 U	5 U
Anthracene	50 (GV)	µg/L	10 U	4.8 U	4.8 UB	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 UJ	5 U	5 U
Benzo(a)anthracene*	0.002 (GV)	µg/L	1 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 UJ	5 U	5 U
Benzo(a)pyrene*	0	µg/L	1 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 UJ	5 UJ	5 U	5 U
Benzo(b)fluoranthene*	0.002 (GV)	µg/L	1 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 UJ	5 U	5 U
Benzo(g,h,i)perylene	- -	µg/L	10 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 UJ	5 UJ	5 U	5 U
Benzo(k)fluoranthene*	0.002 (GV)	µg/L	1 UJ	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 U	5 U	5 U
Chrysene*	0.002 (GV)	µg/L	10 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 UJ	5 U	5 U
Dibenzo(a,h)anthracene	- -	µg/L	1 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 UJ	5 UJ	5 U	5 U
Fluoranthene	50 (GV)	µg/L	10 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 UJ	5 U	5 U
Fluorene	50 (GV)	µg/L	10 U	4.8 U	4.8 U	4.8 U	10 UJ	4.8 U	4.7 U	4.9 U	4.9 U	5 UJ	5 U	5 U
Indeno(1,2,3-cd)pyrene*	0.002 (GV)	µg/L	1 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 UJ	5 UJ	5 U	5 U
Naphthalene	10 (GV)	µg/L	10 U	4.8 U	4.8 U	4.8 UJ	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 U	5 U	5 U
Phenanthrene	50 (GV)	µg/L	10 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 UB	4.9 U	4.9 U	5 UJ	5 U	5 U
Pyrene	50 (GV)	µg/L	10 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 U	5 U	5 U
PAH COCs	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oxygen Demand														
Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonaceous Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* Indicates analytes is COC per Record of Decision (Table 1)

1. D - Compound quantitated using a secondary dilution.
2. J - Indicates that the analyte was detected at a concentration less than the practical quantitation limit (PQL).
3. U - Indicates the constituent was not detected at the PQL. The value preceding the U indicates the PQL.
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5. ND - not detected
6. NA - not analyzed
7. Sample results detected above the Method Detection Limit (MDL) are presented in bold font.
8. Shading indicates that the result exceeds the NYSDEC TOGS 1.1.1 Water Quality Standard or Guidance Value.
9. "GV" indicates value is a guidance value (i.e., not a standard)

Table 3
Groundwater Analytical Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Location ID:	NYSDEC TOGS 1.1.1 Std. or Guidance Values	Units	MW-4S													
			Historical	Historical	Baseline	Q2	Q4	Q6	Q8	Q10	Q12	Q14	Q16	Q18	Q20	Q22	Q24
Date Collected:			04/22/04	08/23/11	04/04/13	08/27/13	02/06/14	08/06/14	02/26/15	08/27/15	02/11/16	08/25/16	02/23/17	08/24/17	02/15/18	08/14/18	02/20/19
BTEX																	
Benzene	1	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	µg/L	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	µg/L	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	5	ug/L	5 U	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Total BTEX	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs																	
Acenaphthene	20 (GV)	µg/L	10 U	**0.07**	4.9 U	4.8 U	4.8 UJ	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Acenaphthylene	- -	µg/L	10 U	**0.1**	4.9 U	4.8 U	4.8 UJ	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Anthracene	50 (GV)	µg/L	10 U	5 U	4.9 U	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Benzo(a)anthracene*	0.002 (GV)	µg/L	1 U	**0.06**	4.9 U	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Benzo(a)pyrene*	0	µg/L	1 U	0.05 U	**1.2 J**	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Benzo(b)fluoranthene*	0.002 (GV)	µg/L	1 U	**0.07**	**1.2 J**	4.8 U	4.8 U	9.6 U	**0.48 J**	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Benzo(g,h,i)perylene	- -	µg/L	10 U	3 U	4.9 U	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Benzo(k)fluoranthene*	0.002 (GV)	µg/L	1 UJ	0.05 U	**0.75 J**	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Chrysene*	0.002 (GV)	µg/L	10 U	0.05 U	4.9 U	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Dibenzo(a,h)anthracene	- -	µg/L	1 U	**0.03**	4.9 U	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Fluoranthene	50 (GV)	µg/L	10 U	5 U	4.9 U	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Fluorene	50 (GV)	µg/L	10 U	5 U	4.9 U	4.8 U	4.8 UJ	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene*	0.002 (GV)	µg/L	1 U	0.05 U	**1.7 J**	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Naphthalene	10 (GV)	µg/L	10 U	5 U	4.9 U	4.8 U	4.8 UJ	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Phenanthrene	50 (GV)	µg/L	10 U	**0.09**	4.9 U	4.8 U	4.8 U	9.6 U	5 U	4.8 UB	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Pyrene	50 (GV)	µg/L	10 U	5 U	**0.42 J**	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
PAH COCs	- -	µg/L	ND	**0.13**	**4.85 J**	ND	ND	ND	**0.48 J**	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs	- -	µg/L	ND	**0.42**	**5.27 J**	ND	ND	ND	**0.48 J**	ND	ND	ND	ND	ND	ND	ND	ND
Oxygen Demand																	
Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonaceous Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Table 3
Groundwater Analytical Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Location ID:	NYSDEC TOGS 1.1.1 Std. or Guidance Values	Units	MW-6S													
			Historical	Baseline	Q2	Q4	Q6	Q8	Q10	Q12	Q14	Q16	Q18	Q20	Q22	Q24
Date Collected:			04/22/04	04/04/13	08/27/13	02/06/14	08/07/14	02/26/15	08/27/15	02/11/16	08/25/16	02/23/17	08/24/17	02/15/18	08/14/18	02/20/19
BTEX																
Benzene	1	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	µg/L	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	µg/L	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	5	ug/L	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Total BTEX	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs																
Acenaphthene	20 (GV)	µg/L	10 U	4.8 U	4.7 U	4.8 UJ	9.8 U	5 U	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Acenaphthylene	- -	µg/L	10 U	4.8 U	4.7 U	4.8 UJ	9.8 U	5 U	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Anthracene	50 (GV)	µg/L	10 U	4.8 U	4.7 U	4.8 U	9.8 U	5 U	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Benzo(a)anthracene*	0.002 (GV)	µg/L	1 U	4.8 U	4.7 U	4.8 UJ	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Benzo(a)pyrene*	0	µg/L	1 U	4.8 U	4.7 U	4.8 U	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Benzo(b)fluoranthene*	0.002 (GV)	µg/L	1 U	4.8 U	4.7 U	4.8 U	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Benzo(g,h,i)perylene	- -	µg/L	10 U	4.8 U	4.7 U	4.8 U	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Benzo(k)fluoranthene*	0.002 (GV)	µg/L	1 UJ	4.8 U	4.7 U	4.8 U	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Chrysene*	0.002 (GV)	µg/L	10 U	4.8 U	4.7 U	4.8 UJ	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Dibenzo(a,h)anthracene	- -	µg/L	1 U	4.8 U	4.7 U	4.8 U	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Fluoranthene	50 (GV)	µg/L	10 U	4.8 U	4.7 U	4.8 U	9.8 U	5 U	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Fluorene	50 (GV)	µg/L	10 U	4.8 U	4.7 U	4.8 UJ	9.8 U	5 U	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Indeno(1,2,3-cd)pyrene*	0.002 (GV)	µg/L	1 U	4.8 U	4.7 U	4.8 U	9.8 U	5 U	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Naphthalene	10 (GV)	µg/L	10 U	4.8 U	4.7 U	4.8 UJ	9.8 U	5 U	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Phenanthrene	50 (GV)	µg/L	10 U	4.8 U	**0.45 J**	4.8 U	9.8 U	5 U	4.8 UB	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Pyrene	50 (GV)	µg/L	10 U	4.8 U	4.7 U	4.8 UJ	9.8 U	5 U	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
PAH COCs	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs	- -	µg/L	ND	ND	**0.45 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oxygen Demand																
Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonaceous Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Table 3
Groundwater Analytical Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Location ID:	NYSDEC TOGS 1.1.1 Std. or Guidance Values	Units	MW-7											
			Historical	Baseline	Q2	Q4	Q6	Q8	Q10	Q12	Q14	Q16	Q18	Q20
Date Collected:			04/22/04	04/04/13	08/27/13	02/06/14	08/06/14	02/26/15	08/27/15	02/11/16	08/25/16	02/23/17	08/24/17	02/15/18
BTEX														
Benzene	1	µg/L	1 U	1 U	1 U	**0.45 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	µg/L	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	µg/L	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	5	ug/L	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Total BTEX	- -	µg/L	ND	ND	ND	**0.45 J**	ND	ND	ND	ND	ND	ND	ND	ND
PAHs														
Acenaphthene	20 (GV)	µg/L	10 U	4.9 U	4.9 U	4.9 UJ	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Acenaphthylene	- -	µg/L	**1.1 J**	4.9 U	4.9 U	4.9 UJ	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Anthracene	50 (GV)	µg/L	10 U	4.9 U	4.9 U	4.9 U	9.9 U	4.7 U	4.9 U	4.8 U	5 U	**0.28 J**	5 U	5 U
Benzo(a)anthracene*	0.002 (GV)	µg/L	1 U	4.9 U	4.9 U	4.9 U	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Benzo(a)pyrene*	0	µg/L	1 U	4.9 U	4.9 U	4.9 U	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Benzo(b)fluoranthene*	0.002 (GV)	µg/L	1 U	4.9 U	4.9 U	4.9 UJ	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Benzo(g,h,i)perylene	- -	µg/L	10 U	4.9 U	4.9 U	4.9 UJ	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Benzo(k)fluoranthene*	0.002 (GV)	µg/L	1 UJ	4.9 U	4.9 U	4.9 U	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Chrysene*	0.002 (GV)	µg/L	10 U	4.9 U	4.9 U	4.9 UJ	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Dibenzo(a,h)anthracene	- -	µg/L	1 U	4.9 U	4.9 U	4.9 UJ	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Fluoranthene	50 (GV)	µg/L	10 U	4.9 U	4.9 U	4.9 U	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Fluorene	50 (GV)	µg/L	10 U	4.9 U	4.9 U	4.9 UJ	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Indeno(1,2,3-cd)pyrene*	0.002 (GV)	µg/L	1 U	4.9 U	4.9 U	4.9 UJ	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Naphthalene	10 (GV)	µg/L	**17**	4.9 U	4.9 U	4.9 UJ	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Phenanthrene	50 (GV)	µg/L	10 U	4.9 U	4.9 U	4.9 U	9.9 U	4.7 U	4.9 UB	4.8 U	5 U	4.9 U	5 U	5 U
Pyrene	50 (GV)	µg/L	10 U	4.9 U	4.9 U	4.9 U	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
PAH COCs	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs	- -	µg/L	**18.1 J**	ND	ND	ND	ND	ND	ND	ND	ND	**0.28 J**	ND	ND
Oxygen Demand														
Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonaceous Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Groundwater Analytical Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Location ID:	NYSDEC TOGS 1.1.1 Std. or Guidance Values	Units	MW-8S													
			Historical	Baseline	Q2	Q4	Q6	Q8	Q10	Q12	Q14	Q16	Q18	Q20	Q22	Q24
Date Collected:			04/22/04	04/05/13	08/27/13	02/07/14	08/07/14	02/26/15	08/27/15	02/11/16	08/25/16	02/23/17	08/24/17	02/15/18	08/14/18	02/20/19
BTEX																
Benzene	1	µg/L	**0.5 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	4 U	4 U	8 U	8 U
Ethylbenzene	5	µg/L	**1.3 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	4 U	4 U	8 U	8 U
Toluene	5	µg/L	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	4 U	4 U	8 U	8 U
Xylenes (total)	5	ug/L	**6**	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	4 U	8 U	8 U	16 U	16 U
Total BTEX	- -	µg/L	**7.8 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs																
Acenaphthene	20 (GV)	µg/L	**2 J**	4.8 U	4.8 U	**6 J**	**6.8 J**	**8**	**7.5**	**7.5**	**6.6**	**9.4**	**7.9 J**	**4.7 J**	**2.1 J**	**5.9**
Acenaphthylene	- -	µg/L	10 U	4.8 U	4.8 U	23 UJ	9.6 U	**0.46 J**	4.7 U	**0.5 J**	4.7 U	**0.36 J**	25 U	25 U	25 U	5 U
Anthracene	50 (GV)	µg/L	10 U	4.8 U	4.8 U	23 UJ	9.6 U	**0.97 J**	**0.61 J**	**1 J**	**0.56 J**	**0.69 J**	25 U	25 U	25 U	**0.47 J**
Benzo(a)anthracene*	0.002 (GV)	µg/L	1 U	4.8 U	4.8 U	23 UJ	9.6 U	**1.2 J**	4.7 U	**1.2 J**	**0.52 J**	**0.38 J**	25 U	25 U	25 U	5 U
Benzo(a)pyrene*	0	µg/L	1 U	4.8 U	4.8 UJ	23 UJ	9.6 U	**1.2 J**	4.7 U	**1.2 J**	4.7 U	**0.43 J**	25 U	25 U	25 U	5 U
Benzo(b)fluoranthene*	0.002 (GV)	µg/L	1 U	4.8 U	4.8 UJ	23 UJ	9.6 U	**1.4 J**	4.7 U	**1.2 J**	**0.43 J**	**0.39 J**	25 U	25 U	25 U	5 U
Benzo(g,h,i)perylene	- -	µg/L	10 U	4.8 U	4.8 UJ	23 UJ	9.6 U	**0.49 J**	4.7 U	**0.53 J**	4.7 U	4.6 U	25 U	25 U	25 U	5 U
Benzo(k)fluoranthene*	0.002 (GV)	µg/L	1 UJ	4.8 U	4.8 UJ	23 UJ	9.6 U	4.9 U	4.7 U	5.3 U	4.7 U	4.6 U	25 U	25 U	25 U	5 U
Chrysene*	0.002 (GV)	µg/L	10 U	4.8 U	4.8 UJ	23 UJ	9.6 U	**0.97 J**	4.7 U	**1 J**	**0.31 J**	4.6 U	25 U	25 U	25 U	5 U
Dibenzo(a,h)anthracene	- -	µg/L	1 U	4.8 U	4.8 UJ	23 UJ	9.6 U	4.9 U	4.7 U	5.3 U	4.7 U	4.6 U	25 U	25 U	25 U	5 U
Fluoranthene	50 (GV)	µg/L	**0.4 J**	4.8 U	4.8 U	23 UJ	9.6 U	**3.4 J**	**2 J**	**3.6 J**	**2.4 J**	**2.7 J**	**2.7 J**	25 U	25 U	**1.7 J**
Fluorene	50 (GV)	µg/L	**1.7 J**	4.8 U	4.8 U	**3.5 J**	**5.1 J**	**4.8 J**	**5.4**	**5.5**	**5**	**6**	**5.2 J**	**4.2 J**	25 U	**4.6 J**
Indeno(1,2,3-cd)pyrene*	0.002 (GV)	µg/L	1 U	4.8 U	4.8 UJ	23 UJ	9.6 U	**0.55 J**	4.7 U	**0.7 J**	4.7 U	4.6 U	25 U	25 U	25 U	5 U
Naphthalene	10 (GV)	µg/L	**14**	4.8 U	4.8 U	23 UJ	9.6 U	**2.5 J**	4.7 U	5.3 U	4.7 U	4.6 U	25 U	25 U	25 U	5 U
Phenanthrene	50 (GV)	µg/L	**0.2 J**	4.8 U	**0.44 J**	23 UJ	9.6 U	**0.57 J**	4.7 UB	5.3 U	4.7 U	4.6 U	25 U	25 U	25 U	5 U
Pyrene	50 (GV)	µg/L	**0.3 J**	4.8 U	4.8 U	23 UJ	9.6 U	**2.6 J**	**1.3 J**	**2.8 J**	**1.7 J**	**1.9 J**	25 U	25 U	25 U	**1.5 J**
PAH COCs	- -	µg/L	ND	ND	ND	ND	ND	**5.32 J**	ND	**5.3**	**1.26 J**	**1.2 J**	ND	ND	ND	ND
Total PAHs	- -	µg/L	**18.6 J**	ND	**0.44 J**	**9.5 J**	**11.9 J**	**29.1 J**	**16.8J**	**26.7 J**	**17.5 J**	**22.3 J**	**15.8 J**	**8.9 J**	**2.1 J**	**14.2 J**
Oxygen Demand																
Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonaceous Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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5. ND - not detected
6. NA - not analyzed
7. Sample results detected above the Method Detection Limit (MDL) are presented in bold font.
8. Shading indicates that the result exceeds the NYSDEC TOGS 1.1.1 Water Quality Standard or Guidance Value.
9. "GV" indicates value is a guidance value (i.e., not a standard)

Table 3
Groundwater Analytical Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Location ID:	NYSDEC TOGS 1.1.1 Std. or Guidance Values	Units	MW-9S													
			Historical	Baseline	Q2	Q4	Q6	Q8	Q10	Q12	Q14	Q16	Q18	Q20	Q22	Q24
Date Collected:			04/27/04	04/05/13	08/27/13	02/07/14	08/06/14	02/26/15	08/27/15	02/11/16	08/25/16	02/23/17	08/24/17	02/15/18	08/14/18	02/20/19
BTEX																
Benzene	1	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	µg/L	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	µg/L	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	5	ug/L	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Total BTEX	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs																
Acenaphthene	20 (GV)	µg/L	11 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Acenaphthylene	- -	µg/L	11 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Anthracene	50 (GV)	µg/L	11 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Benzo(a)anthracene*	0.002 (GV)	µg/L	1.1 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Benzo(a)pyrene*	0	µg/L	1.1 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Benzo(b)fluoranthene*	0.002 (GV)	µg/L	1.1 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Benzo(g,h,i)perylene	- -	µg/L	11 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Benzo(k)fluoranthene*	0.002 (GV)	µg/L	1.1 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Chrysene*	0.002 (GV)	µg/L	11 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Dibenzo(a,h)anthracene	- -	µg/L	1.1 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Fluoranthene	50 (GV)	µg/L	11 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Fluorene	50 (GV)	µg/L	11 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene*	0.002 (GV)	µg/L	1.1 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Naphthalene	10 (GV)	µg/L	11 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Phenanthrene	50 (GV)	µg/L	11 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 UB	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Pyrene	50 (GV)	µg/L	11 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
PAH COCs	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oxygen Demand																
Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonaceous Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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9. "GV" indicates value is a guidance value (i.e., not a standard)

Table 3
Groundwater Analytical Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Location ID:	NYSDEC TOGS 1.1.1 Std. or Guidance Values	Units	MW-0402S											
			Historical	Baseline	Q2	Q4	Q6	Q8	Q10	Q12	Q14	Q16	Q18	Q20
Date Collected:			04/28/04	04/04/13	08/27/13	02/06/14	08/07/14	02/26/15	08/27/15	02/11/16	08/25/16	02/23/17	08/24/17	02/15/18
BTEX														
Benzene	1	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	µg/L	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	µg/L	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	5	ug/L	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Total BTEX	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs														
Acenaphthene	20 (GV)	µg/L	10 U	4.8 U	4.6 U	4.7 U	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Acenaphthylene	- -	µg/L	10 U	4.8 UJ	4.6 U	4.7 U	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Anthracene	50 (GV)	µg/L	10 U	4.8 UJ	4.6 U	4.7 U	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Benzo(a)anthracene*	0.002 (GV)	µg/L	1 U	4.8 UJ	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Benzo(a)pyrene*	0	µg/L	1 U	4.8 U	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Benzo(b)fluoranthene*	0.002 (GV)	µg/L	1 U	4.8 U	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Benzo(g,h,i)perylene	- -	µg/L	10 U	4.8 UJ	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Benzo(k)fluoranthene*	0.002 (GV)	µg/L	1 U	4.8 U	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Chrysene*	0.002 (GV)	µg/L	10 U	4.8 UJ	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Dibenzo(a,h)anthracene	- -	µg/L	1 U	4.8 U	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Fluoranthene	50 (GV)	µg/L	10 U	4.8 U	4.6 U	4.7 U	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Fluorene	50 (GV)	µg/L	10 U	4.8 UJ	4.6 U	4.7 U	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Indeno(1,2,3-cd)pyrene*	0.002 (GV)	µg/L	1 U	4.8 UJ	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Naphthalene	10 (GV)	µg/L	10 U	4.8 U	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Phenanthrene	50 (GV)	µg/L	10 U	4.8 U	4.6 U	4.7 U	9.9 U	4.9 U	4.9 UB	5.3 U	4.7 U	4.6 U	5 U	5 U
Pyrene	50 (GV)	µg/L	10 U	4.8 U	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
PAH COCs	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oxygen Demand														
Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonaceous Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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Table 3
Groundwater Analytical Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Location ID:	NYSDEC TOGS 1.1.1 Std. or Guidance Values	Units	MW-0403S											
			Historical	Baseline	Q2	Q4	Q6	Q8	Q10	Q12	Q14	Q16	Q18	Q20
Date Collected:			04/28/04	04/04/13	08/27/13	02/06/14	08/07/14	02/26/15	08/27/15	02/11/16	08/25/16	02/23/17	08/24/17	02/15/18
BTEX														
Benzene	1	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	µg/L	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	µg/L	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	5	ug/L	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Total BTEX	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs														
Acenaphthene	20 (GV)	µg/L	10 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Acenaphthylene	- -	µg/L	10 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Anthracene	50 (GV)	µg/L	10 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Benzo(a)anthracene*	0.002 (GV)	µg/L	1 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Benzo(a)pyrene*	0	µg/L	1 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Benzo(b)fluoranthene*	0.002 (GV)	µg/L	1 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Benzo(g,h,i)perylene	- -	µg/L	10 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 UJ	4.9 U	4.6 U	5 U	5 U
Benzo(k)fluoranthene*	0.002 (GV)	µg/L	1 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Chrysene*	0.002 (GV)	µg/L	10 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Dibenzo(a,h)anthracene	- -	µg/L	1 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Fluoranthene	50 (GV)	µg/L	10 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Fluorene	50 (GV)	µg/L	10 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Indeno(1,2,3-cd)pyrene*	0.002 (GV)	µg/L	1 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 UJ	4.9 U	4.6 U	5 U	5 U
Naphthalene	10 (GV)	µg/L	10 U	4.8 U	4.7 U	4.6 U	10 U	**0.94 J**	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Phenanthrene	50 (GV)	µg/L	10 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 UB	5.2 U	4.9 U	4.6 U	5 U	5 U
Pyrene	50 (GV)	µg/L	10 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
PAH COCs	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs	- -	µg/L	ND	ND	ND	ND	ND	**0.94 J**	ND	ND	ND	ND	ND	ND
Oxygen Demand														
Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonaceous Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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Table 3
Groundwater Analytical Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Location ID:	NYSDEC TOGS 1.1.1 Std. or Guidance Values	Units	MW-0404S												
			Historical	Baseline	Q2	Q4	Q6	Q8	Q10	Q12	Q14	Q16	Q18	Q20	Q22	Q24
Date Collected:			04/29/04	04/04/13	08/27/13	02/06/14	08/07/14	02/26/15	08/27/15	02/11/16	08/25/16	02/23/17	08/24/17	02/15/18	08/14/18	02/20/19
BTEX																
Benzene	1	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	µg/L	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	µg/L	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	5	ug/L	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Total BTEX	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs																
Acenaphthene	20 (GV)	µg/L	10 U	4.7 U	**1.3 J**	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Acenaphthylene	- -	µg/L	10 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Anthracene	50 (GV)	µg/L	10 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Benzo(a)anthracene*	0.002 (GV)	µg/L	1 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Benzo(a)pyrene*	0	µg/L	1 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Benzo(b)fluoranthene*	0.002 (GV)	µg/L	1 U	4.7 U	4.6 U	4.7 U	9.8 U	**0.33 J**	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Benzo(g,h,i)perylene	- -	µg/L	10 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Benzo(k)fluoranthene*	0.002 (GV)	µg/L	1 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Chrysene*	0.002 (GV)	µg/L	10 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Dibenzo(a,h)anthracene	- -	µg/L	1 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Fluoranthene	50 (GV)	µg/L	10 U	4.7 U	**0.49 J**	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Fluorene	50 (GV)	µg/L	10 U	4.7 U	**1.2 J**	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene*	0.002 (GV)	µg/L	1 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Naphthalene	10 (GV)	µg/L	10 U	4.7 U	4.6 U	4.7 UJ	9.8 U	**3.2 J**	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Phenanthrene	50 (GV)	µg/L	10 U	4.7 U	**0.45 J**	4.7 U	9.8 U	4.7 U	4.9 UB	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
Pyrene	50 (GV)	µg/L	10 U	4.7 U	**0.38 J**	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.9 U	4.6 U	5 U	5 U	5 U	5 U
PAH COCs	- -	µg/L	ND	ND	ND	ND	ND	**0.33 J**	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs	- -	µg/L	ND	ND	**3.82 J**	ND	ND	**3.53 J**	ND	ND	ND	ND	ND	ND	ND	ND
Oxygen Demand																
Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonaceous Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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8. Shading indicates that the result exceeds the NYSDEC TOGS 1.1.1 Water Quality Standard or Guidance Value.
9. "GV" indicates value is a guidance value (i.e., not a standard)

Table 3
Groundwater Analytical Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Location ID:	NYSDEC TOGS 1.1.1 Std. or Guidance Values	Units	MW-0405S														PMW-1			
			Historical	Baseline	Q2	Q4	Q6	Q8	Q10	Q12	Q14	Q16	Q18	Q20	Q22	Q24	Baseline	Q2	Q6	Q8
Date Collected:			04/29/04	04/04/13	08/27/13	02/06/14	08/07/14	02/26/15	08/27/15	02/11/16	08/25/16	02/23/17	08/24/17	02/15/18	08/14/18	02/20/19	04/03/13	08/28/13	08/06/14	02/24/15
BTEX																				
Benzene	1	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA
Ethylbenzene	5	µg/L	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA
Toluene	5	µg/L	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA
Xylenes (total)	5	ug/L	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA	NA	NA
Total BTEX	- -	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
PAHs																				
Acenaphthene	20 (GV)	µg/L	10 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Acenaphthylene	- -	µg/L	10 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Anthracene	50 (GV)	µg/L	10 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Benzo(a)anthracene*	0.002 (GV)	µg/L	1 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Benzo(a)pyrene*	0	µg/L	1 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Benzo(b)fluoranthene*	0.002 (GV)	µg/L	1 U	4.7 U	4.7 U	4.6 U	9.7 U	**0.35 J**	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Benzo(g,h,i)perylene	- -	µg/L	10 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Benzo(k)fluoranthene*	0.002 (GV)	µg/L	1 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Chrysene*	0.002 (GV)	µg/L	10 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Dibenzo(a,h)anthracene	- -	µg/L	1 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Fluoranthene	50 (GV)	µg/L	10 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Fluorene	50 (GV)	µg/L	10 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene*	0.002 (GV)	µg/L	1 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Naphthalene	10 (GV)	µg/L	10 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Phenanthrene	50 (GV)	µg/L	10 U	4.7 U	**0.45 J**	4.6 U	9.7 U	5 U	4.9 UB	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
Pyrene	50 (GV)	µg/L	10 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U	NA	NA	NA	NA
PAH COCs	- -	µg/L	ND	ND	ND	ND	ND	**0.35 J**	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
Total PAHs	- -	µg/L	ND	ND	**0.45 J**	ND	ND	**0.35 J**	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
Oxygen Demand																				
Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4,500**	**3,500**	2,000U	NA
Carbonaceous Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2,400**	NA	2,000U	NA

Notes:

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Table 3
Groundwater Analytical Data

Annual Periodic Review Report, Q21 through Q24
Madison Avenue Former MGP Site, Elmira, New York

Location ID:	NYSDEC TOGS 1.1.1 Std. or Guidance Values	Units	PMW-2					PMW-3				PMW-4					PMW-5				PMW-6				
			Baseline	Q2	Q4	Q6	Q8	Baseline	Q2	Q6	Q8	Baseline	Q2	Q4	Q6	Q8	Baseline	Q2	Q6	Q8	Baseline	Q2	Q4	Q6	Q8
Date Collected:			04/03/13	08/28/13	02/05/14	08/06/14	02/24/15	04/03/13	08/30/13	08/06/14	02/24/15	04/03/13	08/28/13	02/05/14	08/06/14	02/25/15	04/03/13	08/28/13	08/06/14	02/24/15	04/03/13	08/28/13	02/05/14	08/06/14	02/25/15
BTEX																									
Benzene	1	µg/L	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	**230 D**	**81**	**150**	4 U	**81**	NA	NA	NA	NA	**3.4**	**25**	**89**	**90**	**1,200 D**
Ethylbenzene	5	µg/L	1 U	1 U	**0.92 J**	1 U	1 U	NA	NA	NA	NA	**110 D**	**36**	**55**	4 U	**29**	NA	NA	NA	NA	**1.4**	**6.4**	**42**	**57**	**290 D**
Toluene	5	µg/L	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	**9.3**	**2.9 J**	**5.4**	4 U	**4.9**	NA	NA	NA	NA	1 U	**0.54 J**	**1**	**3.4**	**10**
Xylenes (total)	5	ug/L	2 U	2 U	2 U	2 U	2 U	NA	NA	NA	NA	**80**	**21**	**33**	8 U	**21**	NA	NA	NA	NA	**1.1 J**	**8.9**	**30**	**95**	**290 D**
Total BTEX	- -	µg/L	ND	ND	**0.92 J**	ND	ND	NA	NA	NA	NA	**429**	**141 J**	**243**	ND	**136**	NA	NA	NA	NA	**5.9 J**	**40.8 J**	**162**	**245**	**1,790 D**
PAHs																									
Acenaphthene	20 (GV)	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**110 D**	NA	NA	NA	NA	NA	NA	NA	NA	**7.2**	NA	NA	NA	NA
Acenaphthylene	- -	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**6.2**	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Anthracene	50 (GV)	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**8.8**	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Benzo(a)anthracene*	0.002 (GV)	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**0.88 J**	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Benzo(a)pyrene*	0	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**1.3 J**	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Benzo(b)fluoranthene*	0.002 (GV)	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**1.3 J**	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Benzo(g,h,i)perylene	- -	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**1 J**	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Benzo(k)fluoranthene*	0.002 (GV)	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**0.71 J**	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Chrysene*	0.002 (GV)	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**0.70 J**	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Dibenzo(a,h)anthracene	- -	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	4.7 U	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Fluoranthene	50 (GV)	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**5.4**	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Fluorene	50 (GV)	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**29**	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene*	0.002 (GV)	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	4.7 U	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Naphthalene	10 (GV)	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**800 D**	NA	NA	NA	NA	NA	NA	NA	NA	**7.3**	NA	NA	NA	NA
Phenanthrene	50 (GV)	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**33**	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
Pyrene	50 (GV)	µg/L	4.8 U	NA	NA	NA	NA	NA	NA	NA	NA	**9.5**	NA	NA	NA	NA	NA	NA	NA	NA	4.8 U	NA	NA	NA	NA
PAH COCs	- -	µg/L	ND	NA	NA	NA	NA	NA	NA	NA	NA	**4.89 J**	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Total PAHs	- -	µg/L	ND	NA	NA	NA	NA	NA	NA	NA	NA	**1,008 J**	NA	NA	NA	NA	NA	NA	NA	NA	**14.5**	NA	NA	NA	NA
Oxygen Demand																									
Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	**99,000**	**13,000**	**6,900**	NA	NA	NA	NA	NA	NA	2,000 U	2,000 U	2,000U	NA	NA	NA	NA	NA	NA
Carbonaceous Biochemical Oxygen Demand	- -	µg/L	NA	NA	NA	NA	NA	**79,400**	NA	**10,600**	NA	NA	NA	NA	NA	NA	2,000 U	NA	2,000U	NA	NA	NA	NA	NA	NA

Notes:

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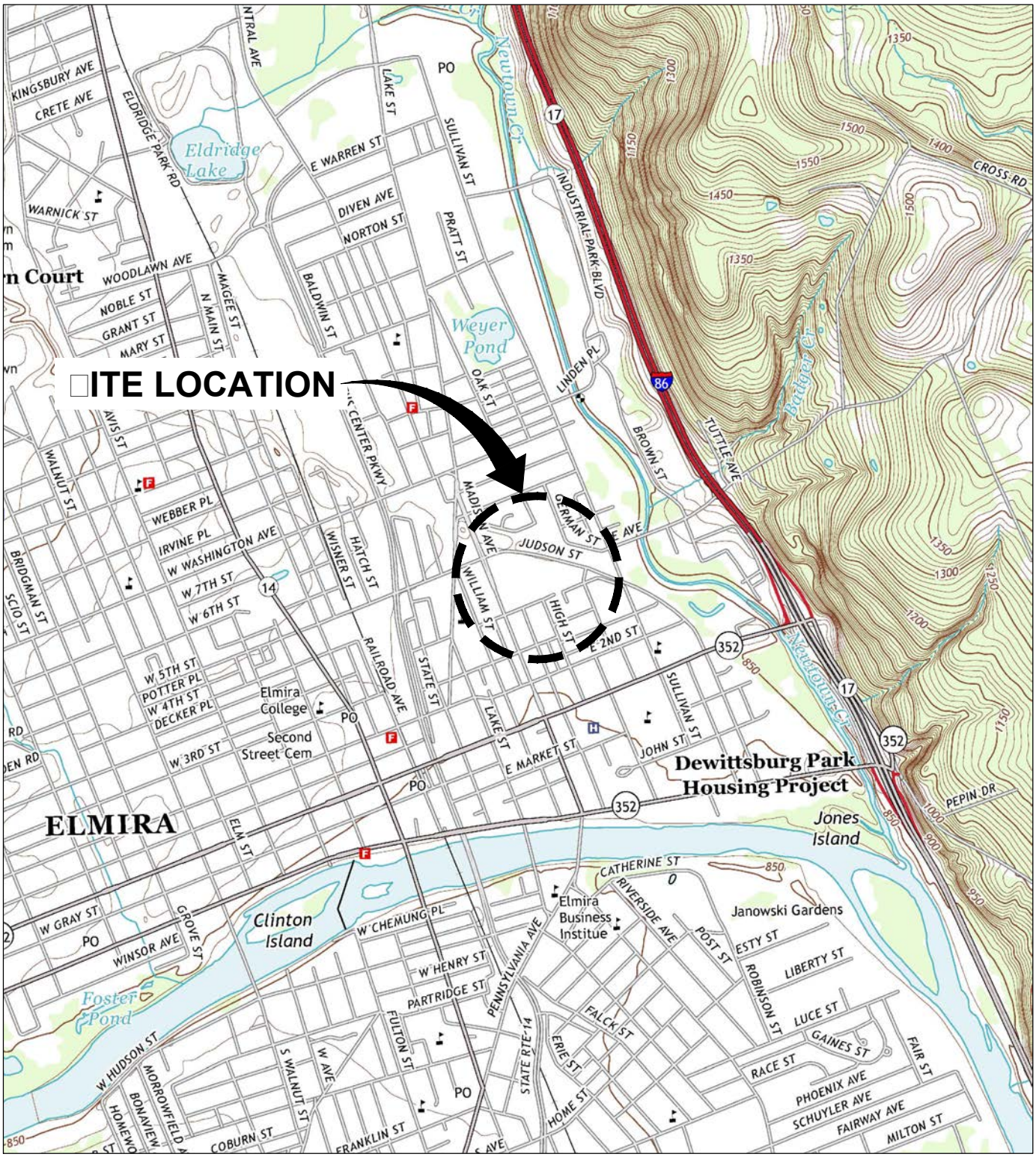
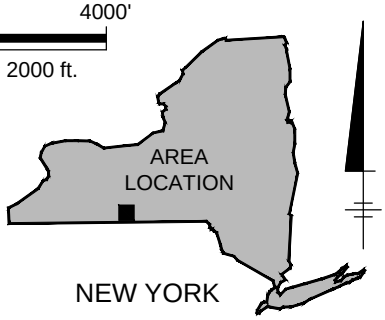
FIGURES



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., ELMIRA, NY-PA., 2013.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.

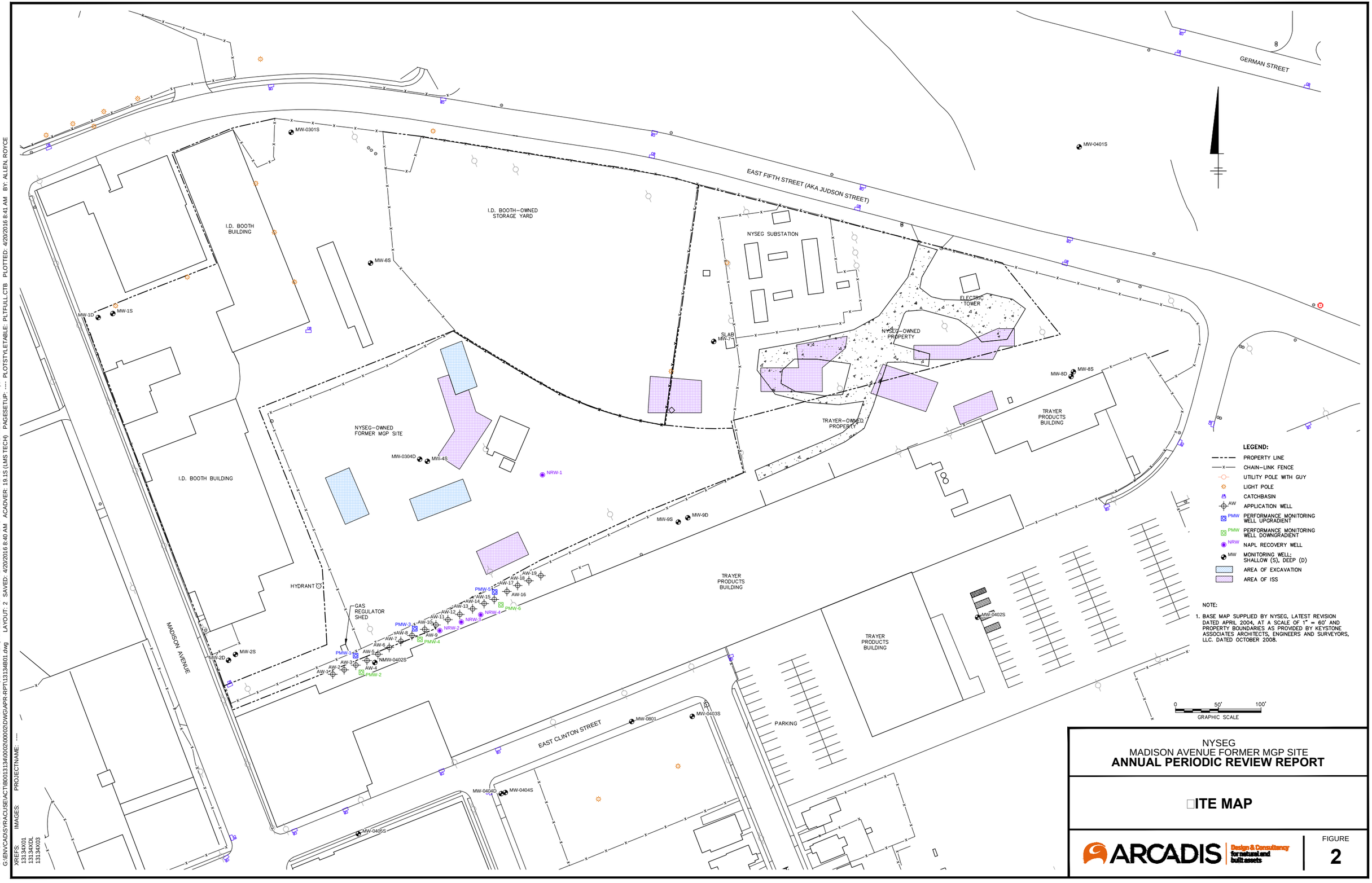


NYSEG
MADISON AVENUE FORMER MGP SITE
ANNUAL PERIODIC REVIEW REPORT

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1

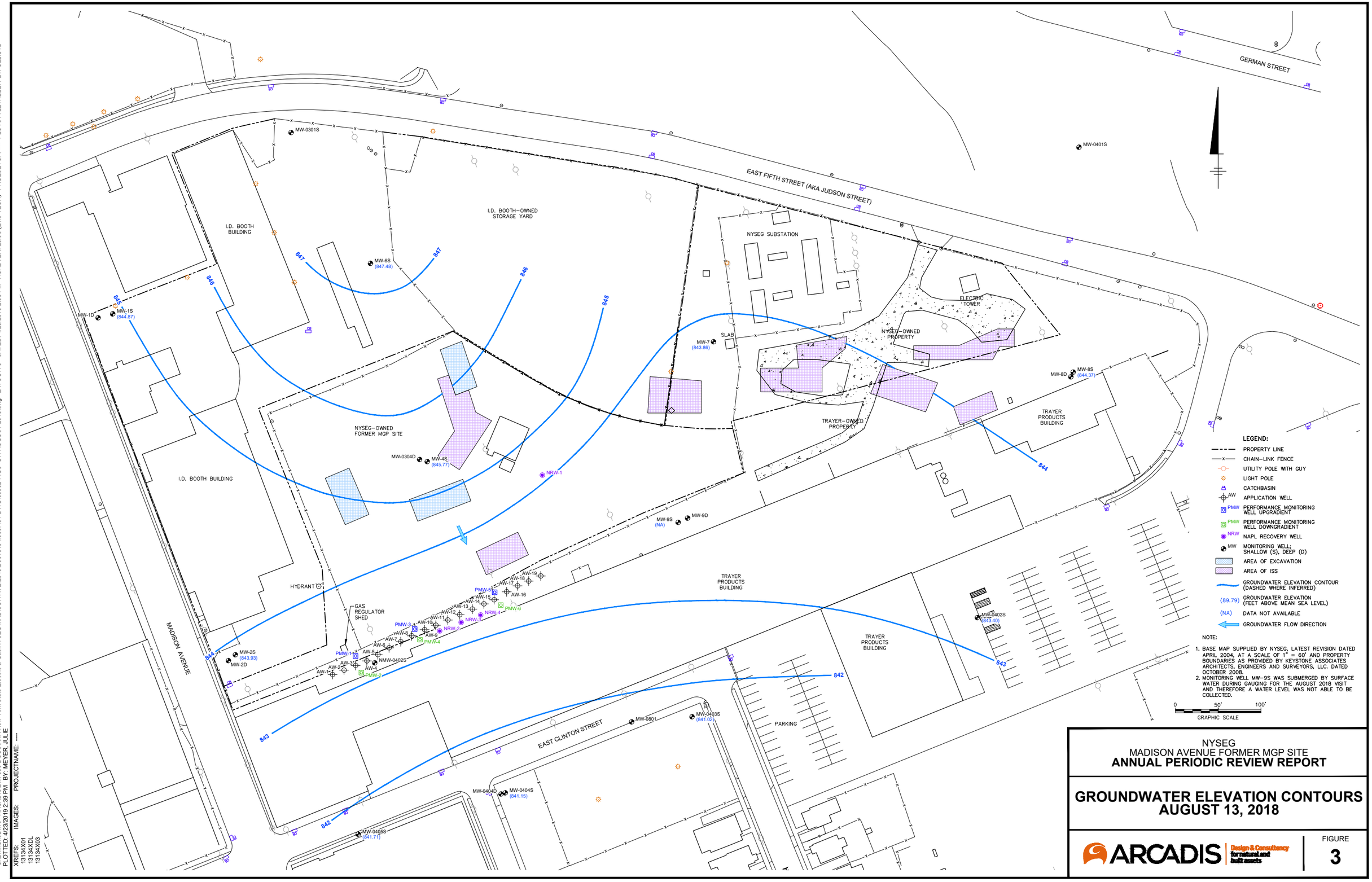


NYSEG
MADISON AVENUE FORMER MGP SITE
ANNUAL PERIODIC REVIEW REPORT

□ITE MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2



LEGEND:

- PROPERTY LINE
- CHAIN–LINK FENCE
- UTILITY POLE WITH GUY
- LIGHT POLE
- CATCHBASIN
- AW — APPLICATION WELL
- PMW — PERFORMANCE MONITORING WELL UPGRADIENT
- PMW — PERFORMANCE MONITORING WELL DOWNGRADIENT
- NRW — NAPL RECOVERY WELL
- MW — MONITORING WELL; SHALLOW (S), DEEP (D)
- AREA OF EXCAVATION
- AREA OF ISS
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- (89.79) GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- (NA) DATA NOT AVAILABLE
- GROUNDWATER FLOW DIRECTION

NOTE:

1. BASE MAP SUPPLIED BY NYSEG, LATEST REVISION DATED APRIL 2004, AT A SCALE OF 1" = 60' AND PROPERTY BOUNDARIES AS PROVIDED BY KEYSTONE ASSOCIATES ARCHITECTS, ENGINEERS AND SURVEYORS, LLC. DATED OCTOBER 2008.
2. MONITORING WELL MW–9S WAS SUBMERGED BY SURFACE WATER DURING GAUGING FOR THE AUGUST 2018 VISIT AND THEREFORE A WATER LEVEL WAS NOT ABLE TO BE COLLECTED.

0 50' 100'
GRAPHIC SCALE

NYSEG
MADISON AVENUE FORMER MGP SITE
ANNUAL PERIODIC REVIEW REPORT

GROUNDWATER ELEVATION CONTOURS AUGUST 13, 2018

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

CITY: SYRACUSE DIV/GROUP: ENV/IM-DIV DB: S. KOWALCZYK, E. KRAHMER, R. ALLEN PIC: K. WHITE PM: B. AHRENS TM: B. AHRENS TR: N. BEYRLE LYR: ON="OFF+"REF"
C:\BIM\OneDrive - ARCADIS\BIM 360 DOCS\ANA-New York State Electric & Gas\NYSEG MADISON AVE\2019\B0013134.0007\01-DWG\00002-FIG3 -GW AUGUST 2018.dwg LAYOUT: 3 SAVED: 4/23/2019 2:38 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB
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13134XDL
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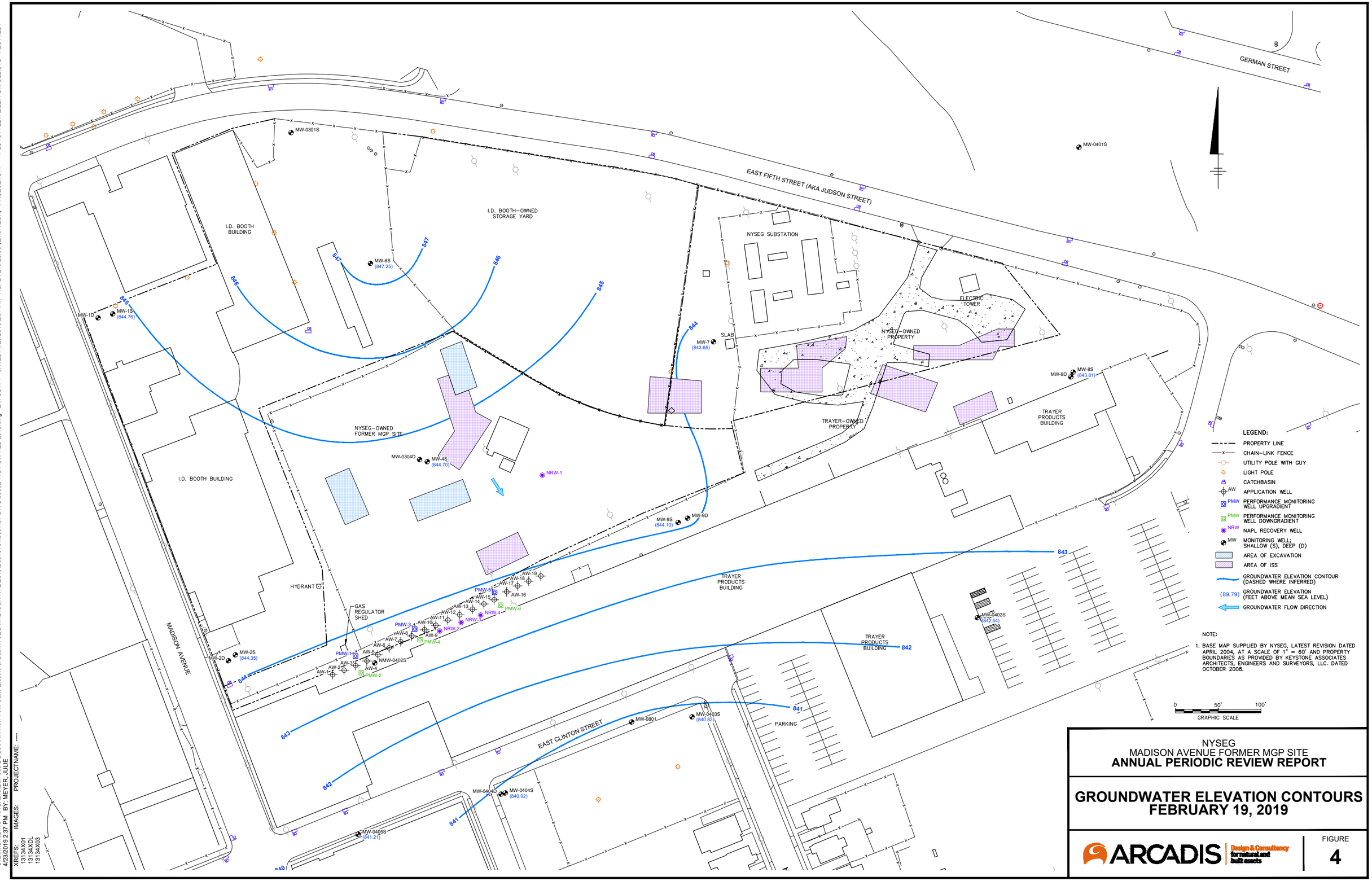


NYSEG
MADISON AVENUE FORMER MGP SITE
ANNUAL PERIODIC REVIEW REPORT

GROUNDWATER ELEVATION CONTOURS FEBRUARY 19, 2019

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4

MW-6S	
Date	Total BTEX
4/22/2004	BDL
4/4/2013	BDL
8/27/2013	BDL
2/6/2014	BDL
8/7/2014	BDL
2/26/2015	BDL
8/27/2015	BDL
2/11/2016	BDL
8/25/2016	BDL
2/23/2017	BDL
8/24/2017	BDL
2/15/2018	BDL
08/14/2018	BDL
02/20/2019	BDL

MW-4S	
Date	Total BTEX
4/22/2004	BDL
8/23/2011	BDL
4/4/2013	BDL
8/27/2013	BDL
2/6/2014	BDL
8/6/2014	BDL
2/26/2015	BDL
8/27/2015	BDL
2/11/2016	BDL
8/25/2016	BDL
2/23/2017	BDL
8/24/2017	BDL
2/15/2018	BDL
08/14/2018	BDL
02/20/2019	BDL

MW-7	
Date	Total BTEX
4/22/2004	BDL
4/4/2013	BDL
8/27/2013	BDL
2/6/2014	0.45 J
8/6/2014	BDL
2/26/2015	BDL
8/27/2015	BDL
2/11/2016	BDL
8/25/2016	BDL
2/23/2017	BDL
8/24/2017	BDL
2/15/2018	BDL

MW-8S	
Date	Total BTEX
4/22/2004	7.8 J
4/5/2013	BDL
8/27/2013	BDL
2/7/2014	BDL
8/7/2014	BDL
2/26/2015	BDL
8/27/2015	BDL
2/11/2016	BDL
8/25/2016	BDL
2/23/2017	BDL
8/24/2017	BDL
2/15/2018	BDL
08/14/2018	BDL
02/20/2019	BDL

MW-2S	
Date	Total BTEX
4/21/2004	BDL
4/4/2013	BDL
8/27/2013	BDL
2/6/2014	BDL
8/6/2014	BDL
2/26/2015	BDL
8/27/2015	BDL
2/11/2016	BDL
8/25/2016	BDL
2/23/2017	BDL
8/24/2017	BDL
2/15/2018	BDL

MW-9S	
Date	Total BTEX
4/27/2004	BDL
4/5/2013	BDL
8/27/2013	BDL
2/7/2014	BDL
8/6/2014	BDL
2/26/2015	BDL
8/27/2015	BDL
2/11/2016	BDL
8/25/2016	BDL
2/23/2017	BDL
8/24/2017	BDL
2/15/2018	BDL
08/14/2018	BDL
02/20/2019	BDL

MW-0402S	
Date	Total BTEX
4/28/2004	BDL
4/4/2013	BDL
8/27/2013	BDL
2/6/2014	BDL
8/7/2014	BDL
2/26/2015	BDL
8/27/2015	BDL
2/11/2016	BDL
8/25/2016	BDL
2/23/2017	BDL
8/24/2017	BDL
2/15/2018	BDL

MW-0405S	
Date	Total BTEX
4/29/2004	BDL
4/4/2013	BDL
8/27/2013	BDL
2/6/2014	BDL
8/7/2014	BDL
2/26/2015	BDL
8/27/2015	BDL
2/11/2016	BDL
8/25/2016	BDL
2/23/2017	BDL
8/24/2017	BDL
2/15/2018	BDL
08/14/2018	BDL
02/20/2019	BDL

MW-0404S	
Date	Total BTEX
4/29/2004	BDL
4/4/2013	BDL
8/27/2013	BDL
2/6/2014	BDL
8/7/2014	BDL
2/26/2015	BDL
8/27/2015	BDL
2/11/2016	BDL
8/25/2016	BDL
2/23/2017	BDL
8/24/2017	BDL
2/15/2018	BDL
08/14/2018	BDL
02/20/2019	BDL

MW-0403S	
Date	Total BTEX
4/28/2004	BDL
4/4/2013	BDL
8/27/2013	BDL
2/6/2014	BDL
8/7/2014	BDL
2/26/2015	BDL
8/27/2015	BDL
2/11/2016	BDL
8/25/2016	BDL
2/23/2017	BDL
8/24/2017	BDL
2/15/2018	BDL

GERMAN STREET
EAST FIFTH STREET (AKA JUDSON STREET)
MADISON AVENUE
I.D. BOOTH BUILDING
I.D. BOOTH–OWNED STORAGE YARD
NYSEG SUBSTATION
ELECTRIC TOWER
NYSEG–OWNED PROPERTY
TRAYER–OWNED PROPERTY
TRAYER PRODUCTS BUILDING
NYSEG–OWNED FORMER MGP SITE
GAS REGULATOR SHED
HYDRANT
PARKING
SLAB
MW-0301S
MW-0401S
MW-1D
MW-1S
MW-2D
MW-2S
MW-6S
MW-7
MW-8D
MW-8S
MW-9D
MW-9S
MW-0304D
MW-4S
MW-0801
MW-0402S
MW-0403S
MW-0404D
MW-0404S
MW-0405S
NRW-1
NRW-2
NRW-3
NRW-4
PMW-1
PMW-2
PMW-3
PMW-4
PMW-5
PMW-6
NMW-0402S
AW-1 through AW-19

LEGEND:

- PROPERTY LINE
- CHAIN–LINK FENCE
- UTILITY POLE WITH GUY
- LIGHT POLE
- CATCHBASIN
- AW APPLICATION WELL
- PMW PERFORMANCE MONITORING WELL UPGRADIENT
- PMW PERFORMANCE MONITORING WELL DOWNGRADIENT
- NRW NAPL RECOVERY WELL
- MW MONITORING WELL; SHALLOW (S), DEEP (D)
- AREA OF EXCAVATION
- AREA OF ISS

NOTES:

1. ALL RESULTS ARE IN MICROGRAMS PER LITER (µg/L).
2. BTEX = BENZENE, TOLUENE, ETHYLBENZENE XYLENE.
3. BDL = BELOW DETECTION LIMITS.
4. J = QUALIFIER INDICATES AN ESTIMATED VALUE.
5. BASE MAP SUPPLIED BY NYSEG, LATEST REVISION DATED APRIL 2004, AT A SCALE OF 1" = 60' AND PROPERTY BOUNDARIES AS PROVIDED BY KEYSTONE ASSOCIATES ARCHITECTS, ENGINEERS AND SURVEYORS, LLC. DATED OCTOBER 2008.

0 50' 100'
GRAPHIC SCALE

NYSEG
MADISON AVENUE FORMER MGP SITE
ANNUAL PERIODIC REVIEW REPORT

TOTAL BTEX CONCENTRATIONS IN GROUNDWATER

ARCADIS Design & Consultancy for natural and built assets

FIGURE
5

MW-6S														
Date	4/22/2004	4/4/2013	8/27/2013	2/6/2014	8/7/2014	2/26/2015	8/27/2015	2/11/2016	8/25/2016	2/23/2017	8/24/2017	2/15/2018	8/14/2018	2/20/2019
Benzo(a)anthracene	1 U	4.8 U	4.7 U	4.8 UJ	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Benzo(a)pyrene	1 U	4.8 U	4.7 U	4.8 U	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Benzo(b)fluoranthene	1 U	4.8 U	4.7 U	4.8 U	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Benzo(k)fluoranthene	1 UJ	4.8 U	4.7 U	4.8 U	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Chrysene	10 U	4.8 U	4.7 U	4.8 UJ	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Indeno(1,2,3-cd)pyrene	1 U	4.8 U	4.7 U	4.8 U	9.8 U	5 UJ	4.8 U	5 U	5.1 U	4.9 U	5 U	5 U	5.2 U	5 U
Total PAH COCs	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

MW-7												
Date	4/22/2004	4/4/2013	8/27/2013	2/6/2014	8/6/2014	2/26/2015	8/27/2015	2/11/2016	8/25/2016	2/23/2017	8/24/2017	2/15/2018
Benzo(a)anthracene	1 U	4.9 U	4.9 U	4.9 U	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Benzo(a)pyrene	1 U	4.9 U	4.9 U	4.9 U	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Benzo(b)fluoranthene	1 U	4.9 U	4.9 U	4.9 UJ	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Benzo(k)fluoranthene	1 UJ	4.9 U	4.9 U	4.9 U	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Chrysene	10 U	4.9 U	4.9 U	4.9 UJ	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	1 U	4.9 U	4.9 U	4.9 UJ	9.9 U	4.7 U	4.9 U	4.8 U	5 U	4.9 U	5 U	5 U
Total PAH COCs	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

MW-8S														
Date	4/22/2004	4/5/2013	8/27/2013	2/7/2014	8/7/2014	2/26/2015	8/27/2015	2/11/2016	8/25/2016	2/23/2017	8/24/2017	2/15/2018	8/14/2018	2/20/2019
Benzo(a)anthracene	1 U	4.8 U	4.8 U	23 UJ	9.6 U	**1.2 J**	4.7 U	**1.2 J**	**0.52 J**	**0.38 J**	25 U	25 U	25 U	5 U
Benzo(a)pyrene	1 U	4.8 U	4.8 UJ	23 UJ	9.6 U	**1.2 J**	4.7 U	**1.2 J**	4.7 U	**0.43 J**	25 U	25 U	25 U	5 U
Benzo(b)fluoranthene	1 U	4.8 U	4.8 UJ	23 UJ	9.6 U	**1.4 J**	4.7 U	**1.2 J**	**0.43 J**	**0.39 J**	25 U	25 U	25 U	5 U
Benzo(k)fluoranthene	1 UJ	4.8 U	4.8 UJ	23 UJ	9.6 U	4.9 U	4.7 U	5.3 U	4.7 U	4.6 U	25 U	25 U	25 U	5 U
Chrysene	10 U	4.8 U	4.8 UJ	23 UJ	9.6 U	**0.97 J**	4.7 U	**1 J**	**0.31 J**	4.6 U	25 U	25 U	25 U	5 U
Indeno(1,2,3-cd)pyrene	1 U	4.8 U	4.8 UJ	23 UJ	9.6 U	**0.55 J**	4.7 U	**0.7 J**	4.7 U	4.6 U	25 U	25 U	25 U	5 U
Total PAH COCs	BDL	BDL	BDL	BDL	BDL	**5.32**	BDL	**5.3**	**1.26 J**	**1.2 J**	BDL	BDL	BDL	BDL

MW-4S														
Date	4/22/2004	8/23/2011	4/4/2013	8/27/2013	2/6/2014	8/6/2014	2/26/2015	8/27/2015	2/11/2016	8/25/2016	2/23/2017	8/24/2017	2/15/2018	8/14/2018	2/20/2019
Benzo(a)anthracene	1 U	**0.06**	4.9 U	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Benzo(a)pyrene	1 U	0.05 U	**1.2 J**	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Benzo(b)fluoranthene	1 U	**0.07**	**1.2 J**	4.8 U	4.8 U	9.6 U	**0.48 J**	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Benzo(k)fluoranthene	1 UJ	0.05 U	**0.75 J**	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Chrysene	10 U	0.05 U	4.9 U	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	1 U	0.05 U	**1.7 J**	4.8 U	4.8 U	9.6 U	5 U	4.8 U	5 U	4.8 U	4.5 U	25 U	5 U	5 U	5 U
Total PAH COCs	BDL	**0.13**	**4.85 J**	BDL	BDL	BDL	**0.48 J**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

MW-9S														
Date	4/27/2004	4/5/2013	8/27/2013	2/7/2014	8/6/2014	2/26/2015	8/27/2015	2/11/2016	8/25/2016	2/23/2017	8/24/2017	2/15/2018	8/14/2018	2/20/2019
Benzo(a)anthracene	1.1 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Benzo(a)pyrene	1.1 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Benzo(b)fluoranthene	1.1 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Benzo(k)fluoranthene	1.1 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Chrysene	11 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	1.1 U	5.1 U	4.8 U	4.9 U	9.6 U	4.9 U	4.7 U	4.8 U	4.7 U	4.9 U	5 U	5 U	5 U	5 U
Total PAH COCs	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

MW-2S												
Date	4/21/2004	4/4/2013	8/27/2013	2/6/2014	8/6/2014	2/26/2015	8/27/2015	2/11/2016	8/25/2016	2/23/2017	8/24/2017	2/15/2018
Benzo(a)anthracene	1 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 UJ	5 U	5 U
Benzo(a)pyrene	1 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 UJ	5 UJ	5 U	5 U
Benzo(b)fluoranthene	1 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 UJ	5 U	5 U
Benzo(k)fluoranthene	1 UJ	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 U	5 U	5 U
Chrysene	10 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 U	5 UJ	5 U	5 U
Indeno(1,2,3-cd)pyrene	1 U	4.8 U	4.8 U	4.8 U	10 U	4.8 U	4.7 U	4.9 U	4.9 UJ	5 UJ	5 U	5 U
Total PAH COCs	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

MW-0402S												
Date	4/28/2004	4/4/2013	8/27/2013	2/6/2014	8/7/2014	2/26/2015	8/27/2015	2/11/2016	8/25/2016	2/23/2017	8/24/2017	2/15/2018
Benzo(a)anthracene	1 U	4.8 UJ	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Benzo(a)pyrene	1 U	4.8 U	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Benzo(b)fluoranthene	1 U	4.8 U	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Benzo(k)fluoranthene	1 U	4.8 U	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Chrysene	10 U	4.8 UJ	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	1 U	4.8 UJ	4.6 U	4.7 UJ	9.9 U	4.9 U	4.9 U	5.3 U	4.7 U	4.6 U	5 U	5 U
Total PAH COCs	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

MW-0403S												
Date	4/28/2004	4/4/2013	8/27/2013	2/6/2014	8/7/2014	2/26/2015	8/27/2015	2/11/2016	8/25/2016	2/23/2017	8/24/2017	2/15/2018
Benzo(a)anthracene	1 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Benzo(a)pyrene	1 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Benzo(b)fluoranthene	1 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Benzo(k)fluoranthene	1 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Chrysene	10 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 U	4.9 U	4.6 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	1 U	4.8 U	4.7 U	4.6 U	10 U	4.7 U	4.7 U	5.2 UJ	4.9 U	4.6 U	5 U	5 U
Total PAH COCs	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

MW-0405S														
Date	4/29/2004	4/4/2013	8/27/2013	2/6/2014	8/7/2014	2/26/2015	8/27/2015	2/11/2016	8/25/2016	2/23/2017	8/24/2017	2/15/2018	8/14/2018	2/20/2019
Benzo(a)anthracene	1 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U
Benzo(a)pyrene	1 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U
Benzo(b)fluoranthene	1 U	4.7 U	4.7 U	4.6 U	9.7 U	**0.35 J**	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U
Benzo(k)fluoranthene	1 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U
Chrysene	10 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	1 U	4.7 U	4.7 U	4.6 U	9.7 U	5 U	4.9 U	5 U	4.9 U	4.5 U	5 U	5 U	5 U	5 U
Total PAH COCs	BDL	BDL	BDL	BDL	BDL	**0.35 J**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

MW-0404S														
Date	4/29/2004	4/4/2013	8/27/2013	2/6/2014	8/7/2014	2/26/2015	8/27/2015	2/11/2016	8/25/2016	2/23/2017	8/24/2017	2/15/2018	8/14/2018	2/20/2019
Benzo(a)anthracene	1 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.8 U	4.8 U	5 U	5 U	5 U	5 U
Benzo(a)pyrene	1 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.8 U	4.8 U	5 U	5 U	5 U	5 U
Benzo(b)fluoranthene	1 U	4.7 U	4.6 U	4.7 U	9.8 U	**0.33 J**	4.9 U	4.9 U	4.8 U	4.8 U	5 U	5 U	5 U	5 U
Benzo(k)fluoranthene	1 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.8 U	4.8 U	5 U	5 U	5 U	5 U
Chrysene	10 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.8 U	4.8 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	1 U	4.7 U	4.6 U	4.7 U	9.8 U	4.7 U	4.9 U	4.9 U	4.8 U	4.8 U	5 U	5 U	5 U	5 U
Total PAH COCs	BDL	BDL	BDL	BDL	BDL	**0.33 J**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

LEGEND:

- PROPERTY LINE
- CHAIN–LINK FENCE
- UTILITY POLE WITH GUY
- LIGHT POLE
- CATCH BASIN
- AW APPLICATION WELL
- PMW PERFORMANCE MONITORING WELL UPGRADIENT
- PMW PERFORMANCE MONITORING WELL DOWNGRADIEN
- NRW NAPL RECOVERY WELL
- MW MONITORING WELL; SHALLOW (S), DEEP (D)
- AREA OF EXCAVATION
- AREA OF ISS

NOTES:

1. ALL RESULTS ARE IN MICROGRAMS PER LITER (µg/L).
2. PAH = POLYCYCLIC AROMATIC HYDROCARBONS.
3. BDL = BELOW DETECTION LIMITS.
4. J = QUALIFIER INDICATES AN ESTIMATED VALUE.
5. U = QUALIFIER INDICATES CONSTITUENT NOT DETECTED AT DETECTION LIMITS.
6. BOLD RESULT INDICATES CONSTITUENT DETECTED ABOVE THE METHOD DETECTION LIMIT.
7. SHADED RESULT INDICATES CONSTITUENT EXCEEDS NY NYSDEC TOGS 1.1.1 WATER QUALITY STANDARD OR GUIDANCE VALUE.
8. INDIVIDUAL PAHs LISTED ARE CONTAMINANTS OF CONCERN (COC) AS LISTED IN THE RECORD OF DECISION.
9. BASE MAP SUPPLIED BY NYSEG, LATEST REVISION DATED APRIL 2004, AT A SCALE OF 1" = 60' AND PROPERTY BOUNDARIES AS PROVIDED BY KEYSTONE ASSOCIATES ARCHITECTS, ENGINEERS AND SURVEYORS, LLC. DATED OCTOBER 2008.

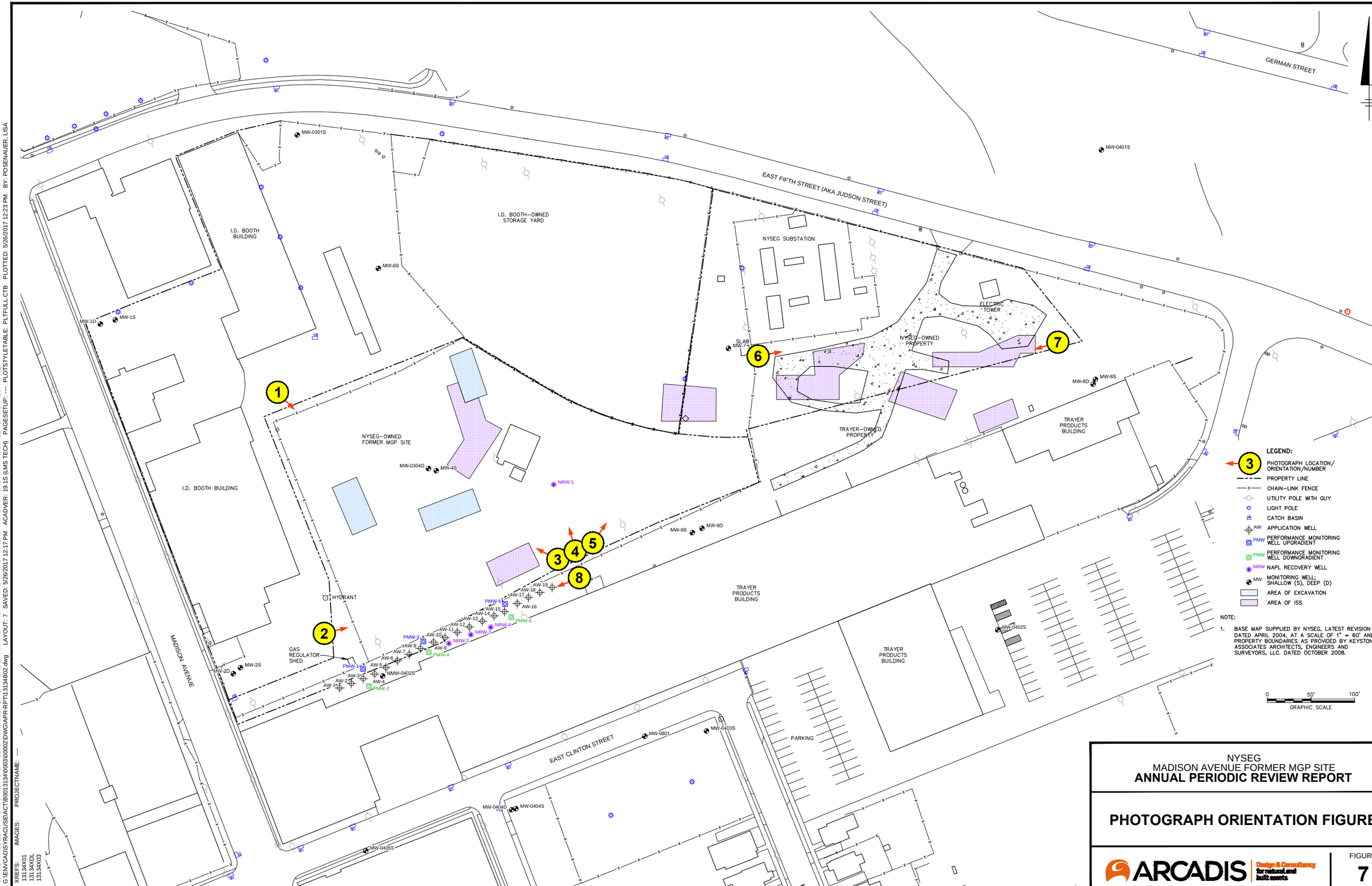
0 50' 100'
GRAPHIC SCALE

NYSEG
MADISON AVENUE FORMER MGP SITE
ANNUAL PERIODIC REVIEW REPORT

CONCENTRATIONS OF PAH COCS IN GROUNDWATER

ARCADIS Design & Consultancy for natural and built assets

FIGURE
6



NYSEG
MADISON AVENUE FORMER MGP SITE
ANNUAL PERIODIC REVIEW REPORT

PHOTOGRAPH ORIENTATION FIGURE

ARCADIS Design & Consultancy for natural and built assets

FIGURE 7

APPENDIX A

Data Usability Summary Reports

(Included on CD)

ARCADIS Design & Consultancy for natural and built assets

NYSEG Elmira Madison Avenue Former MGP Site

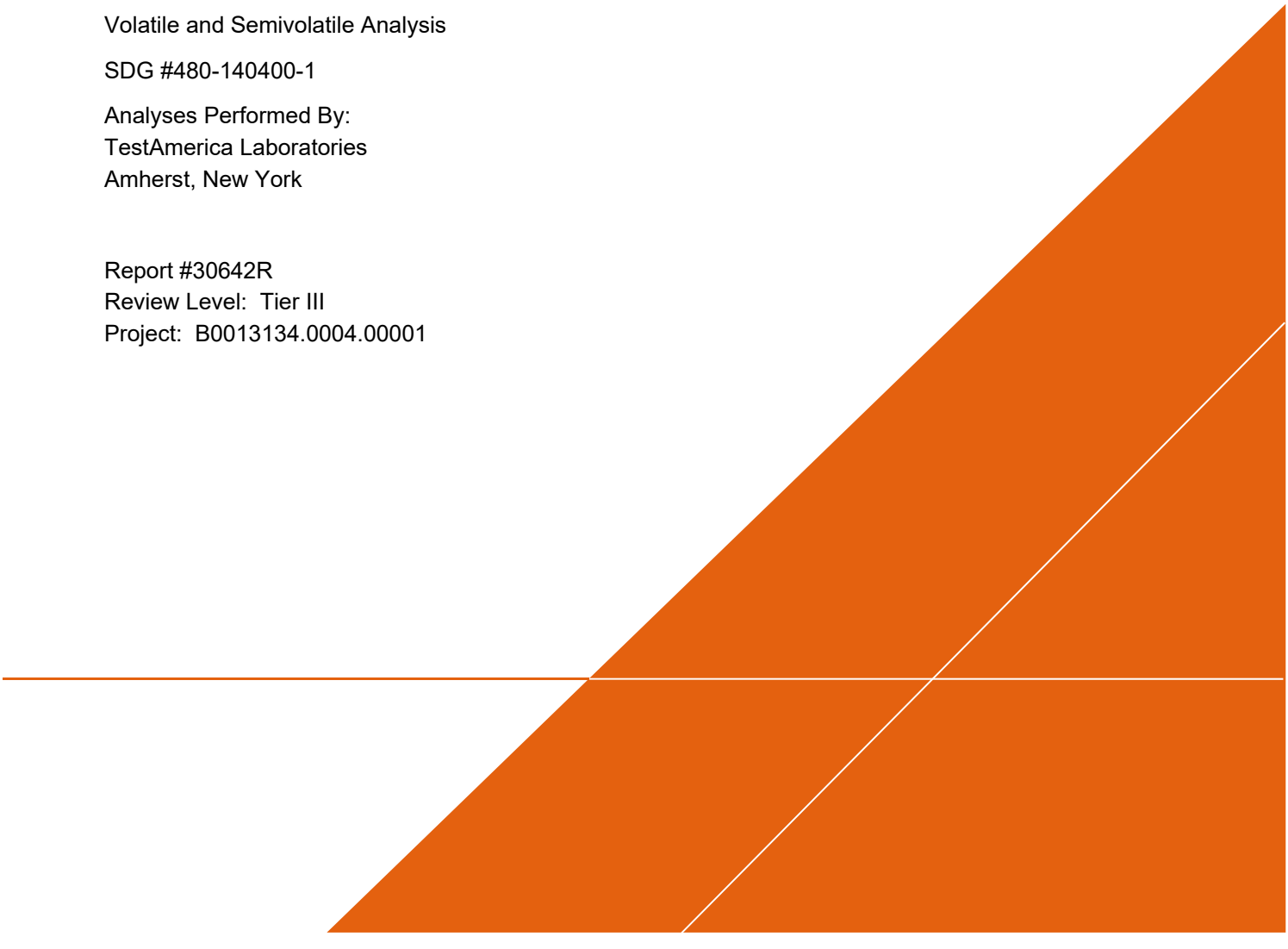
DATA USABILITY SUMMARY REPORT ELMIRA, NEW YORK

Volatile and Semivolatile Analysis

SDG #480-140400-1

Analyses Performed By:
TestAmerica Laboratories
Amherst, New York

Report #30642R
Review Level: Tier III
Project: B0013134.0004.00001



SUMMARY

This data usability summary report (DUSR) summarizes the review of Sample Delivery Group (SDG) # 480-140400-1 for samples collected in association with the NYSEG Elmira Madison Avenue Former MGP Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	PCB	MET	MISC
MW-8S	480-140400-1	Water	8/14/2018		X	X			
MW-0405S	480-140400-2	Water	8/14/2018		X	X			
MW-4S	480-140400-3	Water	8/14/2018		X	X			
MW-0404S	480-140400-4	Water	8/14/2018		X	X			
MW-9S	480-140400-5	Water	8/14/2018		X	X			
MW-6S	480-140400-6	Water	8/14/2018		X	X			
DUP-081418	480-140400-7	Water	8/14/2018	MW-8S	X	X			
TRIP BLANK	480-140400-8	Water	8/14/2018		X				

Note:

1. Matrix spike/matrix spike duplicate was performed on sample location MW-4S for VOCs and SVOCs.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8.Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:
QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260C and 8270D. Data were reviewed in accordance with USEPA National Functional Guidelines (October 1999) and applicable Region II SOPs. USEPA NFGs and Region II SOPs were followed for qualification purposes.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times/Preservation

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260	Water	14 days from collection to analysis (preserved) 7 days from collection to analysis (non-preserved)	Cool to <6 °C; preserved to a pH of less than 2 s.u.
	Soil	48 hours from collection to extraction and 14 days from extraction to analysis	Cool to <6 °C.

Note:
s.u. Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
MW-4S	Benzene	AC	>UL
	m-Xylene & p-Xylene	>UL	>UL
	o-Xylene		

Note:
AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-8S/DUP-081418	All compounds	U	U	AC

Notes:
AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

The laboratory noted: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: MW-8S (480-140400-1) and DUP-081418 (480-140400-7). Elevated reporting limits (RLs) are provided.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					
C. Trip blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)					
LCS/LCSD Precision (RPD)					
Matrix Spike (MS)		X	X		
Matrix Spike Duplicate(MSD)		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content	X				X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
MW-4S	Acenaphthylene	>UL	AC
	Fluoranthene	>UL	>UL

Note:
AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ

Control Limit	Sample Result	Qualification
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
MW-8S MW-0405S MW-4S MW-0404S MW-9S MW-6S DUP-081418	Acenaphthene	>UL
	Acenaphthylene	
	Anthracene	
	Benz(a)anthracene	
	Benzo(a)pyrene	
	Benzo(b)fluoranthene	
	Benzo(k)fluoranthene	
	Chrysene	
	Fluoranthene	
	Naphthalene	
	Phenanthrene	
	Fluorene	

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-8S/DUP-081418	Acenaphthene	2.1 J	26 U	AC

Notes:
AC Acceptable

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

The laboratory noted: The following samples were diluted due to the nature of the sample matrix: MW-8S (480-140400-1) and DUP-081418(480-140400-7). Elevated reporting limits (RLs) are provided.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X	X		
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate(MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content	X				X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
F. Reconstructed ion chromatograms		X		X	
G. Quantitation Reports		X		X	
H. RT of sample compounds within the established RT windows		X		X	

SVOCs: SW-846 8270		Reported		Performance Acceptable		Not Required
		No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)						
I.	Quantitation transcriptions/calculations		X		X	
J.	Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

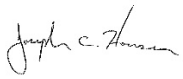
SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB	MET	MISC	
480-140400-1	8/14/2018	USEPA/ SW846	MW-8S	Water	Yes	Yes	--	--	--	
	8/14/2018	USEPA/ SW846	MW-0405S	Water	Yes	Yes	--	--	--	
	8/14/2018	USEPA/ SW846	MW-4S	Water	Yes	Yes	--	--	--	
	8/14/2018	USEPA/ SW846	MW-0404S	Water	Yes	Yes	--	--	--	
	8/14/2018	USEPA/ SW846	MW-9S	Water	Yes	Yes	--	--	--	
	8/14/2018	USEPA/ SW846	MW-6S	Water	Yes	Yes	--	--	--	
	8/14/2018	USEPA/ SW846	DUP-081418	Water	Yes	Yes	--	--	--	
	8/14/2018	USEPA/ SW846	TRIP BLANK	Water	Yes	--	--	--	--	

Note:

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable.

VALIDATION PERFORMED BY: Joseph C. Houser

SIGNATURE: 

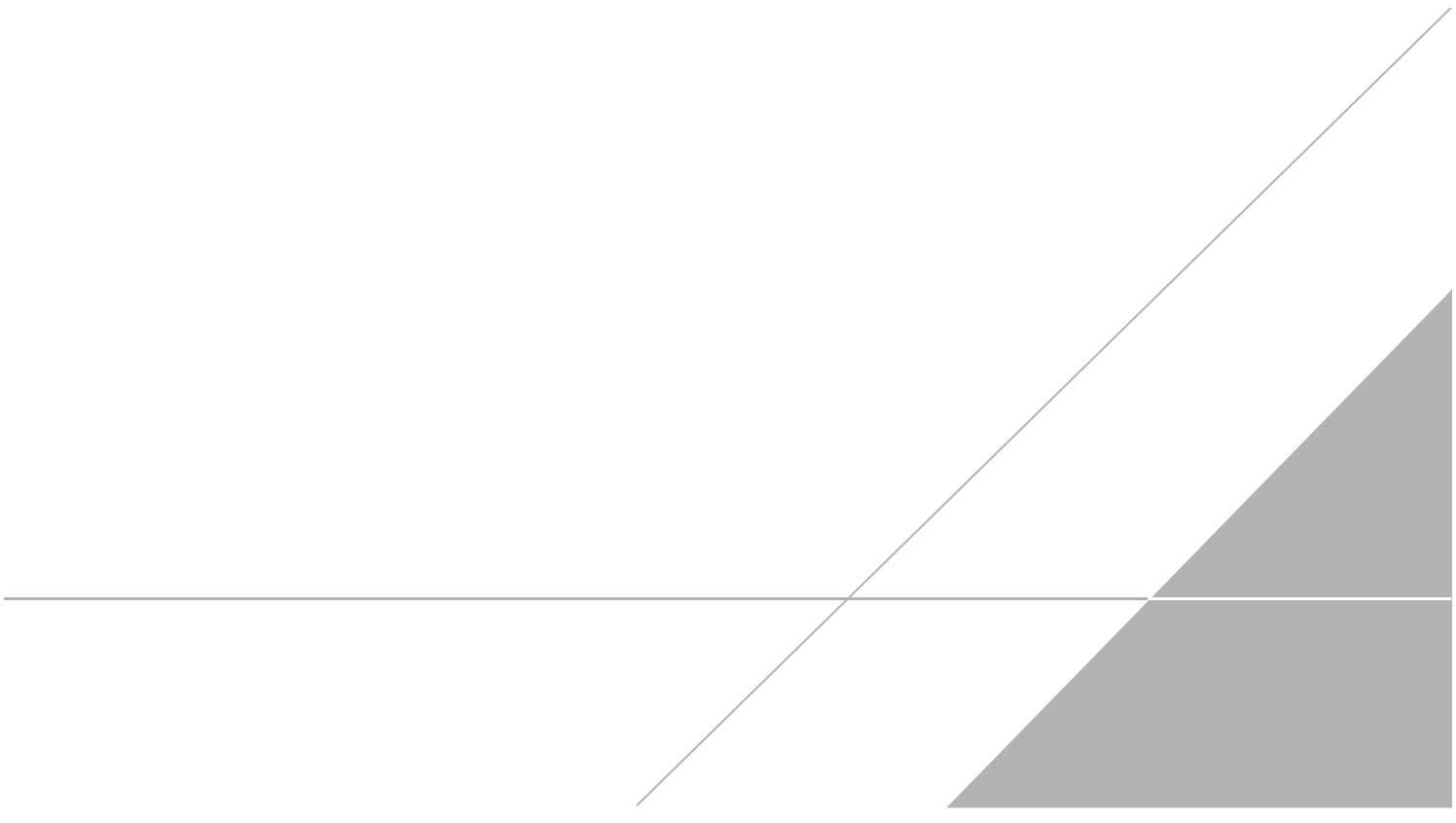
DATE: September 14, 2018

PEER REVIEW: Dennis Capria

DATE: September 19, 2018

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS



Client Sample Results

Client: New York State Electric & Gas
Project/Site: NYSEG - Elmira Madison Ave Lab & Test

TestAmerica Job ID: 480-140400-1

Client Sample ID: MW-8S

Lab Sample ID: 480-140400-1
Matrix: Water

Date Collected: 08/14/18 11:35
Date Received: 08/15/18 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<8.0		8.0	3.3	ug/L			08/18/18 01:26	8
Toluene	<8.0		8.0	4.1	ug/L			08/18/18 01:26	8
Ethylbenzene	<8.0		8.0	5.9	ug/L			08/18/18 01:26	8
m-Xylene & p-Xylene	<16		16	5.3	ug/L			08/18/18 01:26	8
o-Xylene	<8.0		8.0	6.1	ug/L			08/18/18 01:26	8
Xylenes, Total	<16		16	5.3	ug/L			08/18/18 01:26	8

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*77 - 120*		*08/18/18 01:26*	*8*
Toluene-d8 (Surr)	*105*		*80 - 120*		*08/18/18 01:26*	*8*
4-Bromofluorobenzene (Surr)	*110*		*73 - 120*		*08/18/18 01:26*	*8*
Dibromofluoromethane (Surr)	*113*		*75 - 123*		*08/18/18 01:26*	*8*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	2.1	J	25	2.1	ug/L		08/16/18 07:40	08/22/18 23:20	5
Acenaphthylene	<25		25	1.9	ug/L		08/16/18 07:40	08/22/18 23:20	5
Anthracene	<25		25	1.4	ug/L		08/16/18 07:40	08/22/18 23:20	5
Benz(a)anthracene	<25		25	1.8	ug/L		08/16/18 07:40	08/22/18 23:20	5
Benzo(a)pyrene	<25		25	2.4	ug/L		08/16/18 07:40	08/22/18 23:20	5
Benzo(b)fluoranthene	<25		25	1.7	ug/L		08/16/18 07:40	08/22/18 23:20	5
Benzo(g,h,i)perylene	<25		25	1.8	ug/L		08/16/18 07:40	08/22/18 23:20	5
Benzo(k)fluoranthene	<25		25	3.7	ug/L		08/16/18 07:40	08/22/18 23:20	5
Chrysene	<25		25	1.7	ug/L		08/16/18 07:40	08/22/18 23:20	5
Dibenz(a,h)anthracene	<25		25	2.1	ug/L		08/16/18 07:40	08/22/18 23:20	5
Fluoranthene	<25		25	2.0	ug/L		08/16/18 07:40	08/22/18 23:20	5
Fluorene	<25		25	1.8	ug/L		08/16/18 07:40	08/22/18 23:20	5
Indeno(1,2,3-c,d)pyrene	<25		25	2.4	ug/L		08/16/18 07:40	08/22/18 23:20	5
Naphthalene	<25		25	3.8	ug/L		08/16/18 07:40	08/22/18 23:20	5
Phenanthrene	<25		25	2.2	ug/L		08/16/18 07:40	08/22/18 23:20	5
Pyrene	<25		25	1.7	ug/L		08/16/18 07:40	08/22/18 23:20	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*67*		*46 - 120*	*08/16/18 07:40*	*08/22/18 23:20*	*5*
2-Fluorobiphenyl	*84*		*48 - 120*	*08/16/18 07:40*	*08/22/18 23:20*	*5*
p-Terphenyl-d14	*68*		*59 - 136*	*08/16/18 07:40*	*08/22/18 23:20*	*5*

Client Sample ID: MW-0405S

Lab Sample ID: 480-140400-2
Matrix: Water

Date Collected: 08/14/18 12:00
Date Received: 08/15/18 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	0.41	ug/L			08/18/18 01:54	1
Toluene	<1.0		1.0	0.51	ug/L			08/18/18 01:54	1
Ethylbenzene	<1.0		1.0	0.74	ug/L			08/18/18 01:54	1
m-Xylene & p-Xylene	<2.0		2.0	0.66	ug/L			08/18/18 01:54	1
o-Xylene	<1.0		1.0	0.76	ug/L			08/18/18 01:54	1
Xylenes, Total	<2.0		2.0	0.66	ug/L			08/18/18 01:54	1

Client Sample ID: MW-0405S

Lab Sample ID: 480-140400-2
Matrix: Water

Date Collected: 08/14/18 12:00
Date Received: 08/15/18 09:45

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		77 - 120		08/18/18 01:54	1
Toluene-d8 (Surr)	108		80 - 120		08/18/18 01:54	1
4-Bromofluorobenzene (Surr)	114		73 - 120		08/18/18 01:54	1
Dibromofluoromethane (Surr)	109		75 - 123		08/18/18 01:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<5.0		5.0	0.41	ug/L		08/16/18 07:40	08/22/18 23:48	1
Acenaphthylene	<5.0		5.0	0.38	ug/L		08/16/18 07:40	08/22/18 23:48	1
Anthracene	<5.0		5.0	0.28	ug/L		08/16/18 07:40	08/22/18 23:48	1
Benz(a)anthracene	<5.0		5.0	0.36	ug/L		08/16/18 07:40	08/22/18 23:48	1
Benzo(a)pyrene	<5.0		5.0	0.47	ug/L		08/16/18 07:40	08/22/18 23:48	1
Benzo(b)fluoranthene	<5.0		5.0	0.34	ug/L		08/16/18 07:40	08/22/18 23:48	1
Benzo(g,h,i)perylene	<5.0		5.0	0.35	ug/L		08/16/18 07:40	08/22/18 23:48	1
Benzo(k)fluoranthene	<5.0		5.0	0.73	ug/L		08/16/18 07:40	08/22/18 23:48	1
Chrysene	<5.0		5.0	0.33	ug/L		08/16/18 07:40	08/22/18 23:48	1
Dibenz(a,h)anthracene	<5.0		5.0	0.42	ug/L		08/16/18 07:40	08/22/18 23:48	1
Fluoranthene	<5.0		5.0	0.40	ug/L		08/16/18 07:40	08/22/18 23:48	1
Fluorene	<5.0		5.0	0.36	ug/L		08/16/18 07:40	08/22/18 23:48	1
Indeno(1,2,3-c,d)pyrene	<5.0		5.0	0.47	ug/L		08/16/18 07:40	08/22/18 23:48	1
Naphthalene	<5.0		5.0	0.76	ug/L		08/16/18 07:40	08/22/18 23:48	1
Phenanthrene	<5.0		5.0	0.44	ug/L		08/16/18 07:40	08/22/18 23:48	1
Pyrene	<5.0		5.0	0.34	ug/L		08/16/18 07:40	08/22/18 23:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	87		46 - 120	08/16/18 07:40	08/22/18 23:48	1
2-Fluorobiphenyl	103		48 - 120	08/16/18 07:40	08/22/18 23:48	1
p-Terphenyl-d14	97		59 - 136	08/16/18 07:40	08/22/18 23:48	1

Client Sample ID: MW-4S

Lab Sample ID: 480-140400-3
Matrix: Water

Date Collected: 08/14/18 13:55
Date Received: 08/15/18 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0	F1	1.0	0.41	ug/L			08/18/18 02:21	1
Toluene	<1.0		1.0	0.51	ug/L			08/18/18 02:21	1
Ethylbenzene	<1.0		1.0	0.74	ug/L			08/18/18 02:21	1
m-Xylene & p-Xylene	<2.0	F1	2.0	0.66	ug/L			08/18/18 02:21	1
o-Xylene	<1.0	F1	1.0	0.76	ug/L			08/18/18 02:21	1
Xylenes, Total	<2.0	F1	2.0	0.66	ug/L			08/18/18 02:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		77 - 120		08/18/18 02:21	1
Toluene-d8 (Surr)	105		80 - 120		08/18/18 02:21	1
4-Bromofluorobenzene (Surr)	110		73 - 120		08/18/18 02:21	1
Dibromofluoromethane (Surr)	114		75 - 123		08/18/18 02:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<5.0		5.0	0.41	ug/L		08/16/18 07:40	08/22/18 18:04	1

Client Sample ID: MW-4S

Date Collected: 08/14/18 13:55
Date Received: 08/15/18 09:45

Lab Sample ID: 480-140400-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	<5.0		5.0	0.38	ug/L		08/16/18 07:40	08/22/18 18:04	1
Anthracene	<5.0		5.0	0.28	ug/L		08/16/18 07:40	08/22/18 18:04	1
Benz(a)anthracene	<5.0		5.0	0.36	ug/L		08/16/18 07:40	08/22/18 18:04	1
Benzo(a)pyrene	<5.0		5.0	0.47	ug/L		08/16/18 07:40	08/22/18 18:04	1
Benzo(b)fluoranthene	<5.0		5.0	0.34	ug/L		08/16/18 07:40	08/22/18 18:04	1
Benzo(g,h,i)perylene	<5.0		5.0	0.35	ug/L		08/16/18 07:40	08/22/18 18:04	1
Benzo(k)fluoranthene	<5.0		5.0	0.73	ug/L		08/16/18 07:40	08/22/18 18:04	1
Chrysene	<5.0		5.0	0.33	ug/L		08/16/18 07:40	08/22/18 18:04	1
Dibenz(a,h)anthracene	<5.0		5.0	0.42	ug/L		08/16/18 07:40	08/22/18 18:04	1
Fluoranthene	<5.0		5.0	0.40	ug/L		08/16/18 07:40	08/22/18 18:04	1
Fluorene	<5.0		5.0	0.36	ug/L		08/16/18 07:40	08/22/18 18:04	1
Indeno(1,2,3-c,d)pyrene	<5.0		5.0	0.47	ug/L		08/16/18 07:40	08/22/18 18:04	1
Naphthalene	<5.0		5.0	0.76	ug/L		08/16/18 07:40	08/22/18 18:04	1
Phenanthrene	<5.0		5.0	0.44	ug/L		08/16/18 07:40	08/22/18 18:04	1
Pyrene	<5.0		5.0	0.34	ug/L		08/16/18 07:40	08/22/18 18:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*64*		*46 - 120*	*08/16/18 07:40*	*08/22/18 18:04*	*1*
2-Fluorobiphenyl	*79*		*48 - 120*	*08/16/18 07:40*	*08/22/18 18:04*	*1*
p-Terphenyl-d14	*91*		*59 - 136*	*08/16/18 07:40*	*08/22/18 18:04*	*1*

Client Sample ID: MW-0404S

Date Collected: 08/14/18 14:15
Date Received: 08/15/18 09:45

Lab Sample ID: 480-140400-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	0.41	ug/L			08/18/18 02:48	1
Toluene	<1.0		1.0	0.51	ug/L			08/18/18 02:48	1
Ethylbenzene	<1.0		1.0	0.74	ug/L			08/18/18 02:48	1
m-Xylene & p-Xylene	<2.0		2.0	0.66	ug/L			08/18/18 02:48	1
o-Xylene	<1.0		1.0	0.76	ug/L			08/18/18 02:48	1
Xylenes, Total	<2.0		2.0	0.66	ug/L			08/18/18 02:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*77 - 120*		*08/18/18 02:48*	*1*
Toluene-d8 (Surr)	*108*		*80 - 120*		*08/18/18 02:48*	*1*
4-Bromofluorobenzene (Surr)	*110*		*73 - 120*		*08/18/18 02:48*	*1*
Dibromofluoromethane (Surr)	*113*		*75 - 123*		*08/18/18 02:48*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<5.0		5.0	0.41	ug/L		08/16/18 07:40	08/23/18 00:17	1
Acenaphthylene	<5.0		5.0	0.38	ug/L		08/16/18 07:40	08/23/18 00:17	1
Anthracene	<5.0		5.0	0.28	ug/L		08/16/18 07:40	08/23/18 00:17	1
Benz(a)anthracene	<5.0		5.0	0.36	ug/L		08/16/18 07:40	08/23/18 00:17	1
Benzo(a)pyrene	<5.0		5.0	0.47	ug/L		08/16/18 07:40	08/23/18 00:17	1
Benzo(b)fluoranthene	<5.0		5.0	0.34	ug/L		08/16/18 07:40	08/23/18 00:17	1
Benzo(g,h,i)perylene	<5.0		5.0	0.35	ug/L		08/16/18 07:40	08/23/18 00:17	1
Benzo(k)fluoranthene	<5.0		5.0	0.73	ug/L		08/16/18 07:40	08/23/18 00:17	1

Client Sample ID: MW-0404S

Lab Sample ID: 480-140400-4
Matrix: Water

Date Collected: 08/14/18 14:15
Date Received: 08/15/18 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	<5.0		5.0	0.33	ug/L		08/16/18 07:40	08/23/18 00:17	1
Dibenz(a,h)anthracene	<5.0		5.0	0.42	ug/L		08/16/18 07:40	08/23/18 00:17	1
Fluoranthene	<5.0		5.0	0.40	ug/L		08/16/18 07:40	08/23/18 00:17	1
Fluorene	<5.0		5.0	0.36	ug/L		08/16/18 07:40	08/23/18 00:17	1
Indeno(1,2,3-c,d)pyrene	<5.0		5.0	0.47	ug/L		08/16/18 07:40	08/23/18 00:17	1
Naphthalene	<5.0		5.0	0.76	ug/L		08/16/18 07:40	08/23/18 00:17	1
Phenanthrene	<5.0		5.0	0.44	ug/L		08/16/18 07:40	08/23/18 00:17	1
Pyrene	<5.0		5.0	0.34	ug/L		08/16/18 07:40	08/23/18 00:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*90*		*46 - 120*	*08/16/18 07:40*	*08/23/18 00:17*	*1*
2-Fluorobiphenyl	*104*		*48 - 120*	*08/16/18 07:40*	*08/23/18 00:17*	*1*
p-Terphenyl-d14	*89*		*59 - 136*	*08/16/18 07:40*	*08/23/18 00:17*	*1*

Client Sample ID: MW-9S

Lab Sample ID: 480-140400-5
Matrix: Water

Date Collected: 08/14/18 16:45
Date Received: 08/15/18 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	0.41	ug/L			08/18/18 03:16	1
Toluene	<1.0		1.0	0.51	ug/L			08/18/18 03:16	1
Ethylbenzene	<1.0		1.0	0.74	ug/L			08/18/18 03:16	1
m-Xylene & p-Xylene	<2.0		2.0	0.66	ug/L			08/18/18 03:16	1
o-Xylene	<1.0		1.0	0.76	ug/L			08/18/18 03:16	1
Xylenes, Total	<2.0		2.0	0.66	ug/L			08/18/18 03:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*77 - 120*		*08/18/18 03:16*	*1*
Toluene-d8 (Surr)	*111*		*80 - 120*		*08/18/18 03:16*	*1*
4-Bromofluorobenzene (Surr)	*115*		*73 - 120*		*08/18/18 03:16*	*1*
Dibromofluoromethane (Surr)	*114*		*75 - 123*		*08/18/18 03:16*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<5.0		5.0	0.41	ug/L		08/16/18 07:40	08/23/18 03:09	1
Acenaphthylene	<5.0		5.0	0.38	ug/L		08/16/18 07:40	08/23/18 03:09	1
Anthracene	<5.0		5.0	0.28	ug/L		08/16/18 07:40	08/23/18 03:09	1
Benz(a)anthracene	<5.0		5.0	0.36	ug/L		08/16/18 07:40	08/23/18 03:09	1
Benzo(a)pyrene	<5.0		5.0	0.47	ug/L		08/16/18 07:40	08/23/18 03:09	1
Benzo(b)fluoranthene	<5.0		5.0	0.34	ug/L		08/16/18 07:40	08/23/18 03:09	1
Benzo(g,h,i)perylene	<5.0		5.0	0.35	ug/L		08/16/18 07:40	08/23/18 03:09	1
Benzo(k)fluoranthene	<5.0		5.0	0.73	ug/L		08/16/18 07:40	08/23/18 03:09	1
Chrysene	<5.0		5.0	0.33	ug/L		08/16/18 07:40	08/23/18 03:09	1
Dibenz(a,h)anthracene	<5.0		5.0	0.42	ug/L		08/16/18 07:40	08/23/18 03:09	1
Fluoranthene	<5.0		5.0	0.40	ug/L		08/16/18 07:40	08/23/18 03:09	1
Fluorene	<5.0		5.0	0.36	ug/L		08/16/18 07:40	08/23/18 03:09	1
Indeno(1,2,3-c,d)pyrene	<5.0		5.0	0.47	ug/L		08/16/18 07:40	08/23/18 03:09	1
Naphthalene	<5.0		5.0	0.76	ug/L		08/16/18 07:40	08/23/18 03:09	1
Phenanthrene	<5.0		5.0	0.44	ug/L		08/16/18 07:40	08/23/18 03:09	1

Client Sample ID: MW-9S

Lab Sample ID: 480-140400-5
Matrix: Water

Date Collected: 08/14/18 16:45
Date Received: 08/15/18 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	<5.0		5.0	0.34	ug/L		08/16/18 07:40	08/23/18 03:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*93*		*46 - 120*	*08/16/18 07:40*	*08/23/18 03:09*	*1*
2-Fluorobiphenyl	*104*		*48 - 120*	*08/16/18 07:40*	*08/23/18 03:09*	*1*
p-Terphenyl-d14	*112*		*59 - 136*	*08/16/18 07:40*	*08/23/18 03:09*	*1*

Client Sample ID: MW-6S

Lab Sample ID: 480-140400-6
Matrix: Water

Date Collected: 08/14/18 16:45
Date Received: 08/15/18 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	0.41	ug/L			08/18/18 03:43	1
Toluene	<1.0		1.0	0.51	ug/L			08/18/18 03:43	1
Ethylbenzene	<1.0		1.0	0.74	ug/L			08/18/18 03:43	1
m-Xylene & p-Xylene	<2.0		2.0	0.66	ug/L			08/18/18 03:43	1
o-Xylene	<1.0		1.0	0.76	ug/L			08/18/18 03:43	1
Xylenes, Total	<2.0		2.0	0.66	ug/L			08/18/18 03:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*77 - 120*		*08/18/18 03:43*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*08/18/18 03:43*	*1*
4-Bromofluorobenzene (Surr)	*112*		*73 - 120*		*08/18/18 03:43*	*1*
Dibromofluoromethane (Surr)	*111*		*75 - 123*		*08/18/18 03:43*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<5.2		5.2	0.43	ug/L		08/16/18 07:40	08/23/18 03:37	1
Acenaphthylene	<5.2		5.2	0.40	ug/L		08/16/18 07:40	08/23/18 03:37	1
Anthracene	<5.2		5.2	0.29	ug/L		08/16/18 07:40	08/23/18 03:37	1
Benz(a)anthracene	<5.2		5.2	0.38	ug/L		08/16/18 07:40	08/23/18 03:37	1
Benzo(a)pyrene	<5.2		5.2	0.49	ug/L		08/16/18 07:40	08/23/18 03:37	1
Benzo(b)fluoranthene	<5.2		5.2	0.35	ug/L		08/16/18 07:40	08/23/18 03:37	1
Benzo(g,h,i)perylene	<5.2		5.2	0.36	ug/L		08/16/18 07:40	08/23/18 03:37	1
Benzo(k)fluoranthene	<5.2		5.2	0.76	ug/L		08/16/18 07:40	08/23/18 03:37	1
Chrysene	<5.2		5.2	0.34	ug/L		08/16/18 07:40	08/23/18 03:37	1
Dibenz(a,h)anthracene	<5.2		5.2	0.44	ug/L		08/16/18 07:40	08/23/18 03:37	1
Fluoranthene	<5.2		5.2	0.42	ug/L		08/16/18 07:40	08/23/18 03:37	1
Fluorene	<5.2		5.2	0.38	ug/L		08/16/18 07:40	08/23/18 03:37	1
Indeno(1,2,3-c,d)pyrene	<5.2		5.2	0.49	ug/L		08/16/18 07:40	08/23/18 03:37	1
Naphthalene	<5.2		5.2	0.79	ug/L		08/16/18 07:40	08/23/18 03:37	1
Phenanthrene	<5.2		5.2	0.46	ug/L		08/16/18 07:40	08/23/18 03:37	1
Pyrene	<5.2		5.2	0.35	ug/L		08/16/18 07:40	08/23/18 03:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*82*		*46 - 120*	*08/16/18 07:40*	*08/23/18 03:37*	*1*
2-Fluorobiphenyl	*101*		*48 - 120*	*08/16/18 07:40*	*08/23/18 03:37*	*1*
p-Terphenyl-d14	*99*		*59 - 136*	*08/16/18 07:40*	*08/23/18 03:37*	*1*

Client Sample ID: DUP-081418

Lab Sample ID: 480-140400-7
Matrix: Water

Date Collected: 08/14/18 00:00
Date Received: 08/15/18 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<8.0		8.0	3.3	ug/L			08/18/18 04:10	8
Toluene	<8.0		8.0	4.1	ug/L			08/18/18 04:10	8
Ethylbenzene	<8.0		8.0	5.9	ug/L			08/18/18 04:10	8
m-Xylene & p-Xylene	<16		16	5.3	ug/L			08/18/18 04:10	8
o-Xylene	<8.0		8.0	6.1	ug/L			08/18/18 04:10	8
Xylenes, Total	<16		16	5.3	ug/L			08/18/18 04:10	8

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*77 - 120*		*08/18/18 04:10*	*8*
Toluene-d8 (Surr)	*107*		*80 - 120*		*08/18/18 04:10*	*8*
4-Bromofluorobenzene (Surr)	*110*		*73 - 120*		*08/18/18 04:10*	*8*
Dibromofluoromethane (Surr)	*110*		*75 - 123*		*08/18/18 04:10*	*8*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<26		26	2.1	ug/L		08/16/18 07:40	08/23/18 04:06	5
Acenaphthylene	<26		26	2.0	ug/L		08/16/18 07:40	08/23/18 04:06	5
Anthracene	<26		26	1.5	ug/L		08/16/18 07:40	08/23/18 04:06	5
Benz(a)anthracene	<26		26	1.9	ug/L		08/16/18 07:40	08/23/18 04:06	5
Benzo(a)pyrene	<26		26	2.4	ug/L		08/16/18 07:40	08/23/18 04:06	5
Benzo(b)fluoranthene	<26		26	1.8	ug/L		08/16/18 07:40	08/23/18 04:06	5
Benzo(g,h,i)perylene	<26		26	1.8	ug/L		08/16/18 07:40	08/23/18 04:06	5
Benzo(k)fluoranthene	<26		26	3.8	ug/L		08/16/18 07:40	08/23/18 04:06	5
Chrysene	<26		26	1.7	ug/L		08/16/18 07:40	08/23/18 04:06	5
Dibenz(a,h)anthracene	<26		26	2.2	ug/L		08/16/18 07:40	08/23/18 04:06	5
Fluoranthene	<26		26	2.1	ug/L		08/16/18 07:40	08/23/18 04:06	5
Fluorene	<26		26	1.9	ug/L		08/16/18 07:40	08/23/18 04:06	5
Indeno(1,2,3-c,d)pyrene	<26		26	2.4	ug/L		08/16/18 07:40	08/23/18 04:06	5
Naphthalene	<26		26	4.0	ug/L		08/16/18 07:40	08/23/18 04:06	5
Phenanthrene	<26		26	2.3	ug/L		08/16/18 07:40	08/23/18 04:06	5
Pyrene	<26		26	1.8	ug/L		08/16/18 07:40	08/23/18 04:06	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*64*		*46 - 120*	*08/16/18 07:40*	*08/23/18 04:06*	*5*
2-Fluorobiphenyl	*78*		*48 - 120*	*08/16/18 07:40*	*08/23/18 04:06*	*5*
p-Terphenyl-d14	*68*		*59 - 136*	*08/16/18 07:40*	*08/23/18 04:06*	*5*

Client Sample ID: TRIP BLANK

Lab Sample ID: 480-140400-8
Matrix: Water

Date Collected: 08/14/18 00:00
Date Received: 08/15/18 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	0.41	ug/L			08/18/18 04:38	1
Toluene	<1.0		1.0	0.51	ug/L			08/18/18 04:38	1
Ethylbenzene	<1.0		1.0	0.74	ug/L			08/18/18 04:38	1
m-Xylene & p-Xylene	<2.0		2.0	0.66	ug/L			08/18/18 04:38	1
o-Xylene	<1.0		1.0	0.76	ug/L			08/18/18 04:38	1
Xylenes, Total	<2.0		2.0	0.66	ug/L			08/18/18 04:38	1

Client: New York State Electric & Gas
Project/Site: NYSEG - Elmira Madison Ave Lab & Test

TestAmerica Job ID: 480-140400-1

Client Sample ID: TRIP BLANK
Date Collected: 08/14/18 00:00
Date Received: 08/15/18 09:45

Lab Sample ID: 480-140400-8
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		77 - 120		08/18/18 04:38	1
Toluene-d8 (Surr)	107		80 - 120		08/18/18 04:38	1
4-Bromofluorobenzene (Surr)	109		73 - 120		08/18/18 04:38	1
Dibromofluoromethane (Surr)	116		75 - 123		08/18/18 04:38	1

TestAmerica Buffalo
10 Hazelwood Drive

Amherst, NY 14228
Phone: 716.691.2600 Fax: 716.691.799

Chain of Custody Record

285529

TestAmerica

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: Nicholas Boyle		Site Contact: Ryan Clarc	Date: 8/14/18	COC No.
Company Name	Arcadis	Tel/Fax: 585-752-8882		Lab Contact: Melissa Deyo	Carrier: Fedex	1 of __ 480-140400 COC
Address	295 Woodcliff Dr Suite 301	Analysis Turnaround Time				Sampler:
City/State/Zip	Fairport / NY / 14450	CALENDAR DAYS	X WORKING DAYS			For Lab Use Only:
Phone	585-800 7747	TAT if different from Below Standard				Walk-in Client
Fax		2 weeks				Lab Sampling
Project Name	Madison Ave Former MGP	1 week				
Site	Elmira NY	2 days				Job / SDG No.
P O #	B0013134.0004	1 day				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	BTEX	PAHs	Sample Specific Notes
MW-8S	8/14/18	1135	G	GW	5			✓	✓	
MW-0405S	8/14/18	1200	G	GW	5			✓	✓	
MW-4S	8/14/18	1355	G	GW	5			✓	✓	
MW-0404S	8/14/18	1415	G	GW	5			✓	✓	
MW-9S	8/14/18	1645	G	GW	5			✓	✓	
MW-6S	8/14/18	1645	G	GW	5			✓	✓	
MW-4S (MS/MSD)	8/14/18	1355	G	GW	10			✓	✓	
DUP-081418	8/14/18	—	G	GW	5			✓	✓	
Trip Blank	8/14/18	—	—	—	2					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______ 2 1

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

X Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client X Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments:

4.4 #1 ICE

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: 3.2	Corr'd:	Therm ID No.:
Relinquished by: [signature]	Company: Arcadis	Date/Time: 8/14/18 1830	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature] Cikolb	Company: TA	Date/Time: 08/15/18 0945

14

ARCADIS Design & Consultancy for natural and built assets

NYSEG Elmira Madison Avenue Former MGP Site

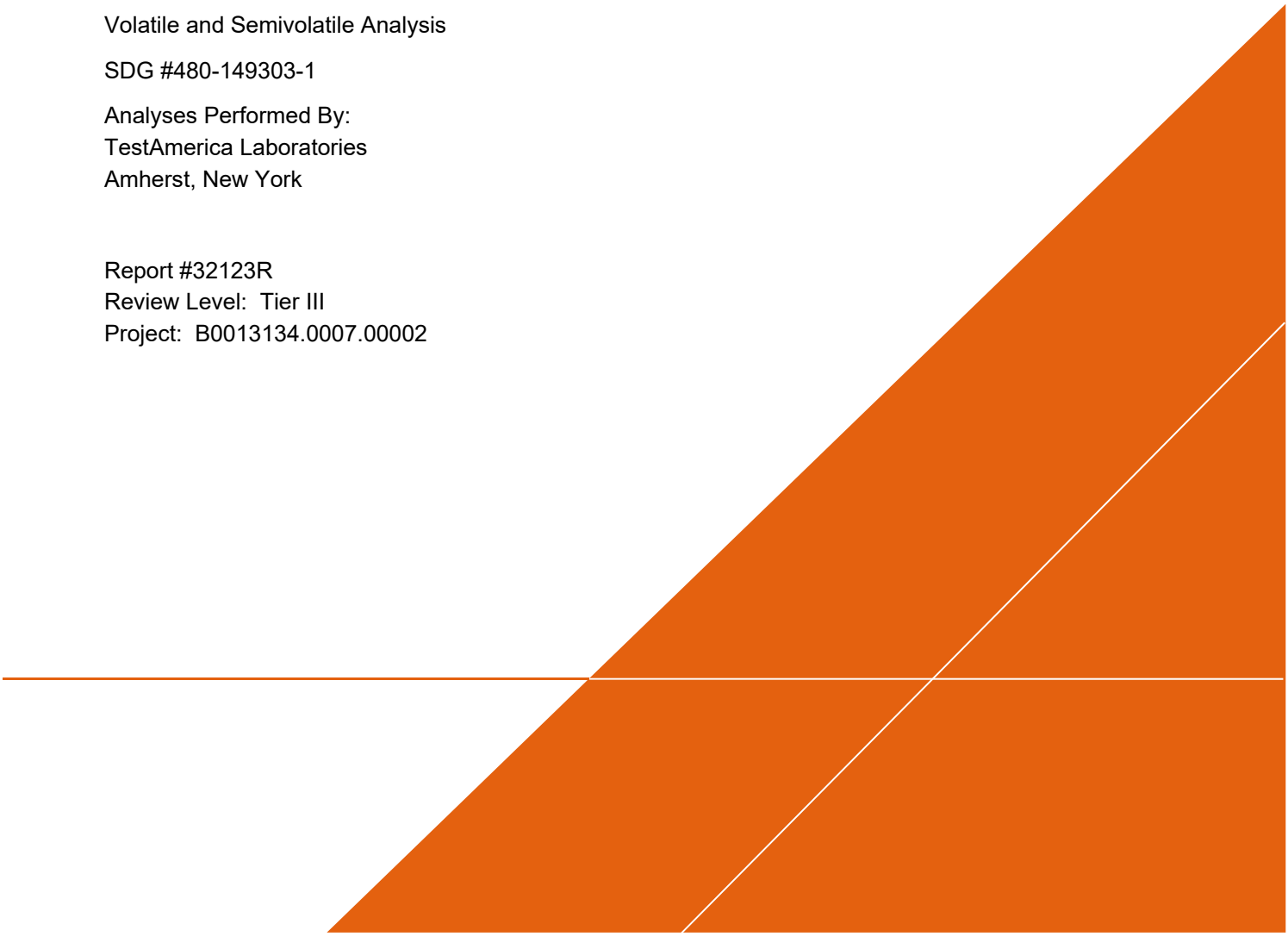
DATA USABILITY SUMMARY REPORT ELMIRA, NEW YORK

Volatile and Semivolatile Analysis

SDG #480-149303-1

Analyses Performed By:
TestAmerica Laboratories
Amherst, New York

Report #32123R
Review Level: Tier III
Project: B0013134.0007.00002



SUMMARY

This data usability summary report (DUSR) summarizes the review of Sample Delivery Group (SDG) # 480-149303-1 for samples collected in association with the NYSEG Elmira Madison Avenue Former MGP Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	PCB	MET	MISC
MW-6S	480-149303-1	Water	2/20/2019		X	X			
MW-8S	480-149303-2	Water	2/20/2019		X	X			
MW-4S	480-149303-3	Water	2/20/2019		X	X			
MW-9S	480-149303-4	Water	2/20/2019		X	X			
MW-0404S	480-149303-5	Water	2/20/2019		X	X			
MW-0405S	480-149303-6	Water	2/20/2019		X	X			
DUP-022019	480-149303-8	Water	2/20/2019	MW-8S	X	X			
FB-022019	480-149303-9	Water	2/20/2019		X				

Note:

1. Matrix spike/matrix spike duplicate was performed on sample location MW-9S for VOCs and SVOCs.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8.Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:
QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260C and 8270D. Data were reviewed in accordance with USEPA National Functional Guidelines (October 1999) and applicable Region II SOPs. USEPA NFGs and Region II SOPs were followed for qualification purposes.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times/Preservation

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260	Water	14 days from collection to analysis (preserved) 7 days from collection to analysis (non-preserved)	Cool to <6 °C; preserved to a pH of less than 2 s.u.
	Soil	48 hours from collection to extraction and 14 days from extraction to analysis	Cool to <6 °C.

Note:
s.u. Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-8S/DUP-022019	All compounds	U	U	AC

Notes:
AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

The laboratory noted: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: MW-8S (480-149303-2) and DUP-022019 (480-149303-8). Elevated reporting limits (RLs) are provided.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
C. Trip blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)					
LCS/LCSD Precision (RPD)					
Matrix Spike (MS)		X		X	
Matrix Spike Duplicate(MSD)		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content	X				X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-8S/DUP-022019	Acenaphthene	5.9	5.4	AC
	Anthracene	0.47 J	0.39 J	
	Fluoranthene	1.7 J	1.4 J	
	Fluorene	4.6 J	4.3 J	
	Pyrene	1.5 J	1.3 J	

Notes:
AC Acceptable

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content	X				X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
F. Reconstructed ion chromatograms		X		X	
G. Quantitation Reports		X		X	
H. RT of sample compounds within the established RT windows		X		X	

SVOCs: SW-846 8270		Reported		Performance Acceptable		Not Required
		No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)						
I.	Quantitation transcriptions/calculations		X		X	
J.	Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

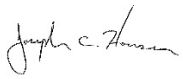
SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB	MET	MISC	
480-149303-1	2/20/2019	USEPA/ SW846	MW-6S	Water	Yes	Yes	--	--	--	
	2/20/2019	USEPA/ SW846	MW-8S	Water	Yes	Yes	--	--	--	
	2/20/2019	USEPA/ SW846	MW-4S	Water	Yes	Yes	--	--	--	
	2/20/2019	USEPA/ SW846	MW-9S	Water	Yes	Yes	--	--	--	
	2/20/2019	USEPA/ SW846	MW-0404S	Water	Yes	Yes	--	--	--	
	2/20/2019	USEPA/ SW846	MW-0405S	Water	Yes	Yes	--	--	--	
	2/20/2019	USEPA/ SW846	DUP-022019	Water	Yes	Yes	--	--	--	
	2/20/2019	USEPA/ SW846	FB-022019	Water	Yes	--	--	--	--	

Note:

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable.

VALIDATION PERFORMED BY: Joseph C. Houser

SIGNATURE: 

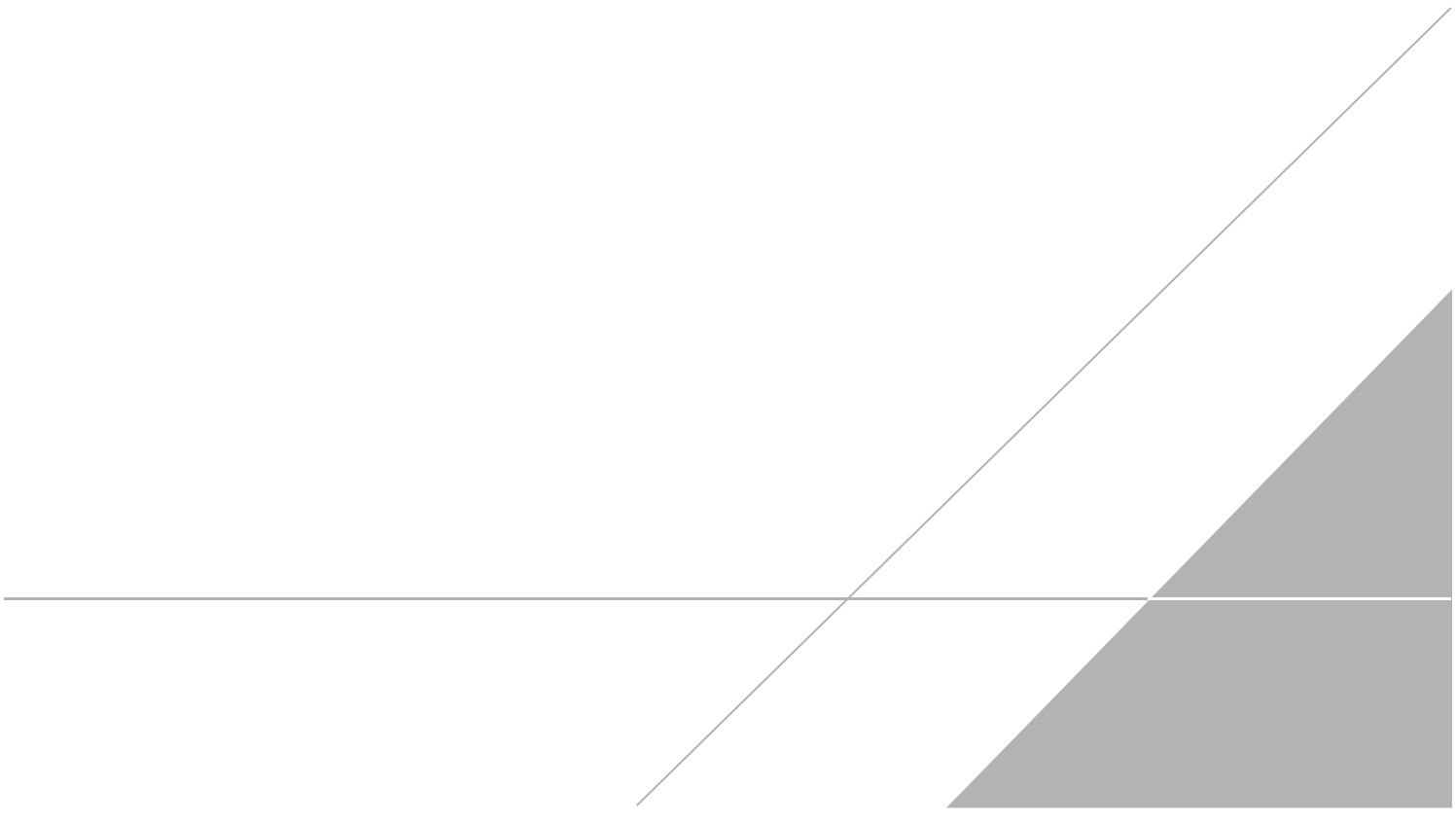
DATE: March 19, 2019

PEER REVIEW: Dennis Capria

DATE: March 25, 2019

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS



Client Sample ID: MW-6S

Date Collected: 02/20/19 12:25
Date Received: 02/21/19 10:00

Lab Sample ID: 480-149303-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	0.41	ug/L			02/22/19 11:41	1
Toluene	<1.0		1.0	0.51	ug/L			02/22/19 11:41	1
Ethylbenzene	<1.0		1.0	0.74	ug/L			02/22/19 11:41	1
m-Xylene & p-Xylene	<2.0		2.0	0.66	ug/L			02/22/19 11:41	1
o-Xylene	<1.0		1.0	0.76	ug/L			02/22/19 11:41	1
Xylenes, Total	<2.0		2.0	0.66	ug/L			02/22/19 11:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*77 - 120*		*02/22/19 11:41*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*02/22/19 11:41*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*02/22/19 11:41*	*1*
Dibromofluoromethane (Surr)	*94*		*75 - 123*		*02/22/19 11:41*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<5.0		5.0	0.41	ug/L		02/22/19 14:23	02/25/19 20:25	1
Acenaphthylene	<5.0		5.0	0.38	ug/L		02/22/19 14:23	02/25/19 20:25	1
Anthracene	<5.0		5.0	0.28	ug/L		02/22/19 14:23	02/25/19 20:25	1
Benz(a)anthracene	<5.0		5.0	0.36	ug/L		02/22/19 14:23	02/25/19 20:25	1
Benzo(a)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 20:25	1
Benzo(b)fluoranthene	<5.0		5.0	0.34	ug/L		02/22/19 14:23	02/25/19 20:25	1
Benzo(g,h,i)perylene	<5.0		5.0	0.35	ug/L		02/22/19 14:23	02/25/19 20:25	1
Benzo(k)fluoranthene	<5.0		5.0	0.73	ug/L		02/22/19 14:23	02/25/19 20:25	1
Chrysene	<5.0		5.0	0.33	ug/L		02/22/19 14:23	02/25/19 20:25	1
Dibenz(a,h)anthracene	<5.0		5.0	0.42	ug/L		02/22/19 14:23	02/25/19 20:25	1
Fluoranthene	<5.0		5.0	0.40	ug/L		02/22/19 14:23	02/25/19 20:25	1
Fluorene	<5.0		5.0	0.36	ug/L		02/22/19 14:23	02/25/19 20:25	1
Indeno(1,2,3-c,d)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 20:25	1
Naphthalene	<5.0		5.0	0.76	ug/L		02/22/19 14:23	02/25/19 20:25	1
Phenanthrene	<5.0		5.0	0.44	ug/L		02/22/19 14:23	02/25/19 20:25	1
Pyrene	<5.0		5.0	0.34	ug/L		02/22/19 14:23	02/25/19 20:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*91*		*46 - 120*	*02/22/19 14:23*	*02/25/19 20:25*	*1*
2-Fluorobiphenyl	*98*		*48 - 120*	*02/22/19 14:23*	*02/25/19 20:25*	*1*
p-Terphenyl-d14	*116*		*59 - 136*	*02/22/19 14:23*	*02/25/19 20:25*	*1*

Client Sample ID: MW-8S

Date Collected: 02/20/19 12:30
Date Received: 02/21/19 10:00

Lab Sample ID: 480-149303-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<8.0		8.0	3.3	ug/L			02/22/19 12:04	8
Toluene	<8.0		8.0	4.1	ug/L			02/22/19 12:04	8
Ethylbenzene	<8.0		8.0	5.9	ug/L			02/22/19 12:04	8
m-Xylene & p-Xylene	<16		16	5.3	ug/L			02/22/19 12:04	8
o-Xylene	<8.0		8.0	6.1	ug/L			02/22/19 12:04	8
Xylenes, Total	<16		16	5.3	ug/L			02/22/19 12:04	8

Client Sample ID: MW-8S

Date Collected: 02/20/19 12:30
Date Received: 02/21/19 10:00

Lab Sample ID: 480-149303-2
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*77 - 120*		*02/22/19 12:04*	*8*
Toluene-d8 (Surr)	*97*		*80 - 120*		*02/22/19 12:04*	*8*
4-Bromofluorobenzene (Surr)	*94*		*73 - 120*		*02/22/19 12:04*	*8*
Dibromofluoromethane (Surr)	*95*		*75 - 123*		*02/22/19 12:04*	*8*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**5.9**		5.0	0.41	ug/L		02/22/19 14:23	02/25/19 20:54	1
Acenaphthylene	<5.0		5.0	0.38	ug/L		02/22/19 14:23	02/25/19 20:54	1
Anthracene	**0.47**	**J**	5.0	0.28	ug/L		02/22/19 14:23	02/25/19 20:54	1
Benz(a)anthracene	<5.0		5.0	0.36	ug/L		02/22/19 14:23	02/25/19 20:54	1
Benzo(a)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 20:54	1
Benzo(b)fluoranthene	<5.0		5.0	0.34	ug/L		02/22/19 14:23	02/25/19 20:54	1
Benzo(g,h,i)perylene	<5.0		5.0	0.35	ug/L		02/22/19 14:23	02/25/19 20:54	1
Benzo(k)fluoranthene	<5.0		5.0	0.73	ug/L		02/22/19 14:23	02/25/19 20:54	1
Chrysene	<5.0		5.0	0.33	ug/L		02/22/19 14:23	02/25/19 20:54	1
Dibenz(a,h)anthracene	<5.0		5.0	0.42	ug/L		02/22/19 14:23	02/25/19 20:54	1
Fluoranthene	**1.7**	**J**	5.0	0.40	ug/L		02/22/19 14:23	02/25/19 20:54	1
Fluorene	**4.6**	**J**	5.0	0.36	ug/L		02/22/19 14:23	02/25/19 20:54	1
Indeno(1,2,3-c,d)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 20:54	1
Naphthalene	<5.0		5.0	0.76	ug/L		02/22/19 14:23	02/25/19 20:54	1
Phenanthrene	<5.0		5.0	0.44	ug/L		02/22/19 14:23	02/25/19 20:54	1
Pyrene	**1.5**	**J**	5.0	0.34	ug/L		02/22/19 14:23	02/25/19 20:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*83*		*46 - 120*	*02/22/19 14:23*	*02/25/19 20:54*	*1*
2-Fluorobiphenyl	*92*		*48 - 120*	*02/22/19 14:23*	*02/25/19 20:54*	*1*
p-Terphenyl-d14	*92*		*59 - 136*	*02/22/19 14:23*	*02/25/19 20:54*	*1*

Client Sample ID: MW-4S

Date Collected: 02/20/19 14:20
Date Received: 02/21/19 10:00

Lab Sample ID: 480-149303-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	0.41	ug/L			02/22/19 12:28	1
Toluene	<1.0		1.0	0.51	ug/L			02/22/19 12:28	1
Ethylbenzene	<1.0		1.0	0.74	ug/L			02/22/19 12:28	1
m-Xylene & p-Xylene	<2.0		2.0	0.66	ug/L			02/22/19 12:28	1
o-Xylene	<1.0		1.0	0.76	ug/L			02/22/19 12:28	1
Xylenes, Total	<2.0		2.0	0.66	ug/L			02/22/19 12:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*77 - 120*		*02/22/19 12:28*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*02/22/19 12:28*	*1*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*		*02/22/19 12:28*	*1*
Dibromofluoromethane (Surr)	*93*		*75 - 123*		*02/22/19 12:28*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<5.0		5.0	0.41	ug/L		02/22/19 14:23	02/25/19 21:23	1

Client Sample ID: MW-4S

Date Collected: 02/20/19 14:20
Date Received: 02/21/19 10:00

Lab Sample ID: 480-149303-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	<5.0		5.0	0.38	ug/L		02/22/19 14:23	02/25/19 21:23	1
Anthracene	<5.0		5.0	0.28	ug/L		02/22/19 14:23	02/25/19 21:23	1
Benz(a)anthracene	<5.0		5.0	0.36	ug/L		02/22/19 14:23	02/25/19 21:23	1
Benzo(a)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 21:23	1
Benzo(b)fluoranthene	<5.0		5.0	0.34	ug/L		02/22/19 14:23	02/25/19 21:23	1
Benzo(g,h,i)perylene	<5.0		5.0	0.35	ug/L		02/22/19 14:23	02/25/19 21:23	1
Benzo(k)fluoranthene	<5.0		5.0	0.73	ug/L		02/22/19 14:23	02/25/19 21:23	1
Chrysene	<5.0		5.0	0.33	ug/L		02/22/19 14:23	02/25/19 21:23	1
Dibenz(a,h)anthracene	<5.0		5.0	0.42	ug/L		02/22/19 14:23	02/25/19 21:23	1
Fluoranthene	<5.0		5.0	0.40	ug/L		02/22/19 14:23	02/25/19 21:23	1
Fluorene	<5.0		5.0	0.36	ug/L		02/22/19 14:23	02/25/19 21:23	1
Indeno(1,2,3-c,d)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 21:23	1
Naphthalene	<5.0		5.0	0.76	ug/L		02/22/19 14:23	02/25/19 21:23	1
Phenanthrene	<5.0		5.0	0.44	ug/L		02/22/19 14:23	02/25/19 21:23	1
Pyrene	<5.0		5.0	0.34	ug/L		02/22/19 14:23	02/25/19 21:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*74*		*46 - 120*	*02/22/19 14:23*	*02/25/19 21:23*	*1*
2-Fluorobiphenyl	*80*		*48 - 120*	*02/22/19 14:23*	*02/25/19 21:23*	*1*
p-Terphenyl-d14	*96*		*59 - 136*	*02/22/19 14:23*	*02/25/19 21:23*	*1*

Client Sample ID: MW-9S

Date Collected: 02/20/19 14:15
Date Received: 02/21/19 10:00

Lab Sample ID: 480-149303-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	0.41	ug/L			02/22/19 12:51	1
Toluene	<1.0		1.0	0.51	ug/L			02/22/19 12:51	1
Ethylbenzene	<1.0		1.0	0.74	ug/L			02/22/19 12:51	1
m-Xylene & p-Xylene	<2.0		2.0	0.66	ug/L			02/22/19 12:51	1
o-Xylene	<1.0		1.0	0.76	ug/L			02/22/19 12:51	1
Xylenes, Total	<2.0		2.0	0.66	ug/L			02/22/19 12:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*77 - 120*		*02/22/19 12:51*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*02/22/19 12:51*	*1*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*		*02/22/19 12:51*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 123*		*02/22/19 12:51*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<5.0		5.0	0.41	ug/L		02/22/19 14:23	02/25/19 18:58	1
Acenaphthylene	<5.0		5.0	0.38	ug/L		02/22/19 14:23	02/25/19 18:58	1
Anthracene	<5.0		5.0	0.28	ug/L		02/22/19 14:23	02/25/19 18:58	1
Benz(a)anthracene	<5.0		5.0	0.36	ug/L		02/22/19 14:23	02/25/19 18:58	1
Benzo(a)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 18:58	1
Benzo(b)fluoranthene	<5.0		5.0	0.34	ug/L		02/22/19 14:23	02/25/19 18:58	1
Benzo(g,h,i)perylene	<5.0		5.0	0.35	ug/L		02/22/19 14:23	02/25/19 18:58	1
Benzo(k)fluoranthene	<5.0		5.0	0.73	ug/L		02/22/19 14:23	02/25/19 18:58	1

Client: New York State Electric & Gas
Project/Site: NYSEG - Elmira Madison Ave Former MGP

TestAmerica Job ID: 480-149303-1

Client Sample ID: MW-9S

Date Collected: 02/20/19 14:15
Date Received: 02/21/19 10:00

Lab Sample ID: 480-149303-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	<5.0		5.0	0.33	ug/L		02/22/19 14:23	02/25/19 18:58	1
Dibenz(a,h)anthracene	<5.0		5.0	0.42	ug/L		02/22/19 14:23	02/25/19 18:58	1
Fluoranthene	<5.0		5.0	0.40	ug/L		02/22/19 14:23	02/25/19 18:58	1
Fluorene	<5.0		5.0	0.36	ug/L		02/22/19 14:23	02/25/19 18:58	1
Indeno(1,2,3-c,d)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 18:58	1
Naphthalene	<5.0		5.0	0.76	ug/L		02/22/19 14:23	02/25/19 18:58	1
Phenanthrene	<5.0		5.0	0.44	ug/L		02/22/19 14:23	02/25/19 18:58	1
Pyrene	<5.0		5.0	0.34	ug/L		02/22/19 14:23	02/25/19 18:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*86*		*46 - 120*	*02/22/19 14:23*	*02/25/19 18:58*	*1*
2-Fluorobiphenyl	*92*		*48 - 120*	*02/22/19 14:23*	*02/25/19 18:58*	*1*
p-Terphenyl-d14	*108*		*59 - 136*	*02/22/19 14:23*	*02/25/19 18:58*	*1*

Client Sample ID: MW-0404S

Date Collected: 02/20/19 16:15
Date Received: 02/21/19 10:00

Lab Sample ID: 480-149303-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	0.41	ug/L			02/22/19 13:13	1
Toluene	<1.0		1.0	0.51	ug/L			02/22/19 13:13	1
Ethylbenzene	<1.0		1.0	0.74	ug/L			02/22/19 13:13	1
m-Xylene & p-Xylene	<2.0		2.0	0.66	ug/L			02/22/19 13:13	1
o-Xylene	<1.0		1.0	0.76	ug/L			02/22/19 13:13	1
Xylenes, Total	<2.0		2.0	0.66	ug/L			02/22/19 13:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*77 - 120*		*02/22/19 13:13*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*02/22/19 13:13*	*1*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*02/22/19 13:13*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 123*		*02/22/19 13:13*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<5.0		5.0	0.41	ug/L		02/22/19 14:23	02/25/19 21:53	1
Acenaphthylene	<5.0		5.0	0.38	ug/L		02/22/19 14:23	02/25/19 21:53	1
Anthracene	<5.0		5.0	0.28	ug/L		02/22/19 14:23	02/25/19 21:53	1
Benz(a)anthracene	<5.0		5.0	0.36	ug/L		02/22/19 14:23	02/25/19 21:53	1
Benzo(a)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 21:53	1
Benzo(b)fluoranthene	<5.0		5.0	0.34	ug/L		02/22/19 14:23	02/25/19 21:53	1
Benzo(g,h,i)perylene	<5.0		5.0	0.35	ug/L		02/22/19 14:23	02/25/19 21:53	1
Benzo(k)fluoranthene	<5.0		5.0	0.73	ug/L		02/22/19 14:23	02/25/19 21:53	1
Chrysene	<5.0		5.0	0.33	ug/L		02/22/19 14:23	02/25/19 21:53	1
Dibenz(a,h)anthracene	<5.0		5.0	0.42	ug/L		02/22/19 14:23	02/25/19 21:53	1
Fluoranthene	<5.0		5.0	0.40	ug/L		02/22/19 14:23	02/25/19 21:53	1
Fluorene	<5.0		5.0	0.36	ug/L		02/22/19 14:23	02/25/19 21:53	1
Indeno(1,2,3-c,d)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 21:53	1
Naphthalene	<5.0		5.0	0.76	ug/L		02/22/19 14:23	02/25/19 21:53	1
Phenanthrene	<5.0		5.0	0.44	ug/L		02/22/19 14:23	02/25/19 21:53	1

Client Sample ID: MW-0404S

Date Collected: 02/20/19 16:15
Date Received: 02/21/19 10:00

Lab Sample ID: 480-149303-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	<5.0		5.0	0.34	ug/L		02/22/19 14:23	02/25/19 21:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*76*		*46 - 120*	*02/22/19 14:23*	*02/25/19 21:53*	*1*
2-Fluorobiphenyl	*83*		*48 - 120*	*02/22/19 14:23*	*02/25/19 21:53*	*1*
p-Terphenyl-d14	*105*		*59 - 136*	*02/22/19 14:23*	*02/25/19 21:53*	*1*

Client Sample ID: MW-0405S

Date Collected: 02/20/19 16:05
Date Received: 02/21/19 10:00

Lab Sample ID: 480-149303-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	0.41	ug/L			02/22/19 13:36	1
Toluene	<1.0		1.0	0.51	ug/L			02/22/19 13:36	1
Ethylbenzene	<1.0		1.0	0.74	ug/L			02/22/19 13:36	1
m-Xylene & p-Xylene	<2.0		2.0	0.66	ug/L			02/22/19 13:36	1
o-Xylene	<1.0		1.0	0.76	ug/L			02/22/19 13:36	1
Xylenes, Total	<2.0		2.0	0.66	ug/L			02/22/19 13:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*02/22/19 13:36*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*02/22/19 13:36*	*1*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*02/22/19 13:36*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 123*		*02/22/19 13:36*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<5.0		5.0	0.41	ug/L		02/22/19 14:23	02/25/19 22:21	1
Acenaphthylene	<5.0		5.0	0.38	ug/L		02/22/19 14:23	02/25/19 22:21	1
Anthracene	<5.0		5.0	0.28	ug/L		02/22/19 14:23	02/25/19 22:21	1
Benz(a)anthracene	<5.0		5.0	0.36	ug/L		02/22/19 14:23	02/25/19 22:21	1
Benzo(a)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 22:21	1
Benzo(b)fluoranthene	<5.0		5.0	0.34	ug/L		02/22/19 14:23	02/25/19 22:21	1
Benzo(g,h,i)perylene	<5.0		5.0	0.35	ug/L		02/22/19 14:23	02/25/19 22:21	1
Benzo(k)fluoranthene	<5.0		5.0	0.73	ug/L		02/22/19 14:23	02/25/19 22:21	1
Chrysene	<5.0		5.0	0.33	ug/L		02/22/19 14:23	02/25/19 22:21	1
Dibenz(a,h)anthracene	<5.0		5.0	0.42	ug/L		02/22/19 14:23	02/25/19 22:21	1
Fluoranthene	<5.0		5.0	0.40	ug/L		02/22/19 14:23	02/25/19 22:21	1
Fluorene	<5.0		5.0	0.36	ug/L		02/22/19 14:23	02/25/19 22:21	1
Indeno(1,2,3-c,d)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 22:21	1
Naphthalene	<5.0		5.0	0.76	ug/L		02/22/19 14:23	02/25/19 22:21	1
Phenanthrene	<5.0		5.0	0.44	ug/L		02/22/19 14:23	02/25/19 22:21	1
Pyrene	<5.0		5.0	0.34	ug/L		02/22/19 14:23	02/25/19 22:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*83*		*46 - 120*	*02/22/19 14:23*	*02/25/19 22:21*	*1*
2-Fluorobiphenyl	*90*		*48 - 120*	*02/22/19 14:23*	*02/25/19 22:21*	*1*
p-Terphenyl-d14	*104*		*59 - 136*	*02/22/19 14:23*	*02/25/19 22:21*	*1*

Client Sample ID: DUP-022019

Lab Sample ID: 480-149303-8

Date Collected: 02/20/19 00:00

Matrix: Water

Date Received: 02/21/19 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<8.0		8.0	3.3	ug/L			02/22/19 13:59	8
Toluene	<8.0		8.0	4.1	ug/L			02/22/19 13:59	8
Ethylbenzene	<8.0		8.0	5.9	ug/L			02/22/19 13:59	8
m-Xylene & p-Xylene	<16		16	5.3	ug/L			02/22/19 13:59	8
o-Xylene	<8.0		8.0	6.1	ug/L			02/22/19 13:59	8
Xylenes, Total	<16		16	5.3	ug/L			02/22/19 13:59	8

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*		*02/22/19 13:59*	*8*
Toluene-d8 (Surr)	*94*		*80 - 120*		*02/22/19 13:59*	*8*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*		*02/22/19 13:59*	*8*
Dibromofluoromethane (Surr)	*91*		*75 - 123*		*02/22/19 13:59*	*8*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**5.4**		5.0	0.41	ug/L		02/22/19 14:23	02/25/19 22:50	1
Acenaphthylene	<5.0		5.0	0.38	ug/L		02/22/19 14:23	02/25/19 22:50	1
Anthracene	**0.39**	**J**	5.0	0.28	ug/L		02/22/19 14:23	02/25/19 22:50	1
Benz(a)anthracene	<5.0		5.0	0.36	ug/L		02/22/19 14:23	02/25/19 22:50	1
Benzo(a)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 22:50	1
Benzo(b)fluoranthene	<5.0		5.0	0.34	ug/L		02/22/19 14:23	02/25/19 22:50	1
Benzo(g,h,i)perylene	<5.0		5.0	0.35	ug/L		02/22/19 14:23	02/25/19 22:50	1
Benzo(k)fluoranthene	<5.0		5.0	0.73	ug/L		02/22/19 14:23	02/25/19 22:50	1
Chrysene	<5.0		5.0	0.33	ug/L		02/22/19 14:23	02/25/19 22:50	1
Dibenz(a,h)anthracene	<5.0		5.0	0.42	ug/L		02/22/19 14:23	02/25/19 22:50	1
Fluoranthene	**1.4**	**J**	5.0	0.40	ug/L		02/22/19 14:23	02/25/19 22:50	1
Fluorene	**4.3**	**J**	5.0	0.36	ug/L		02/22/19 14:23	02/25/19 22:50	1
Indeno(1,2,3-c,d)pyrene	<5.0		5.0	0.47	ug/L		02/22/19 14:23	02/25/19 22:50	1
Naphthalene	<5.0		5.0	0.76	ug/L		02/22/19 14:23	02/25/19 22:50	1
Phenanthrene	<5.0		5.0	0.44	ug/L		02/22/19 14:23	02/25/19 22:50	1
Pyrene	**1.3**	**J**	5.0	0.34	ug/L		02/22/19 14:23	02/25/19 22:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*83*		*46 - 120*	*02/22/19 14:23*	*02/25/19 22:50*	*1*
2-Fluorobiphenyl	*92*		*48 - 120*	*02/22/19 14:23*	*02/25/19 22:50*	*1*
p-Terphenyl-d14	*101*		*59 - 136*	*02/22/19 14:23*	*02/25/19 22:50*	*1*

Client Sample ID: FB-022019

Lab Sample ID: 480-149303-9

Date Collected: 02/20/19 17:00

Matrix: Water

Date Received: 02/21/19 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	0.41	ug/L			02/22/19 14:23	1
Toluene	<1.0		1.0	0.51	ug/L			02/22/19 14:23	1
Ethylbenzene	<1.0		1.0	0.74	ug/L			02/22/19 14:23	1
m-Xylene & p-Xylene	<2.0		2.0	0.66	ug/L			02/22/19 14:23	1
o-Xylene	<1.0		1.0	0.76	ug/L			02/22/19 14:23	1
Xylenes, Total	<2.0		2.0	0.66	ug/L			02/22/19 14:23	1

Client: New York State Electric & Gas
Project/Site: NYSEG - Elmira Madison Ave Former MGP

TestAmerica Job ID: 480-149303-1

Client Sample ID: FB-022019
Date Collected: 02/20/19 17:00
Date Received: 02/21/19 10:00

Lab Sample ID: 480-149303-9
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120		02/22/19 14:23	1
Toluene-d8 (Surr)	95		80 - 120		02/22/19 14:23	1
4-Bromofluorobenzene (Surr)	103		73 - 120		02/22/19 14:23	1
Dibromofluoromethane (Surr)	95		75 - 123		02/22/19 14:23	1

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Ryan Clare + Jeff B.	Lab PM: Deyo, Melissa L	Carrier Tracking No(s):	COC No: 480-125189-28414.2
Client Contact: Mr. Nicholas Beyrle	Phone: 585-880-7747	E-Mail: melissa.deyo@testamericainc.com		Page: Page ~~2 of 2~~ 1 of 1
Company: ARCADIS U.S. Inc				Job #:
Address: Arcadis 295 Woodcliff Drive 3rd Floor, Suite 301	Due Date Requested:			
City: Fairport	TAT Requested (days): Standard (10 days)			
State, Zip: NY, 14450				
Phone:	PO #: IU00316300			
Email: Nicholas.beyrle@arcadis-us.com	WO #: NYSEG-Elmira Madison Ave/John Ruspantini			
Project Name: NYSEG - Elmira Madison Ave Former MGP	Project #: 48004725			
Site:	SSOW#:			

480-149303 Chain of Custody

H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270D - PAH	8260C - BTEX	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	A		
MW-6S	2/20/19	1225	G	Water			2	3	5	
MW-8S	2/20/19	1230	G	Water			2	3	5	
MW-4S	2/20/19	1420	G	Water			2	3	5	
MW-9S	2/20/19	1415	G	Water			2	3	5	
MW-0404S	2/20/19	1615	G	Water			2	3	5	
MW-0405S	2/20/19	1605	G	Water			2	3	5	
MW-9S (MS/MSD)	2/20/19	1415	G	water			4	6	10	
DUP-022019	2/20/19	—	G	water			2	3	5	
FB-022019	2/20/19	1700	G	water			2		2	FB replaced the TB

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

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

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

Special Instructions/QC Requirements: Trip Blank vials were damaged. FB-022019 collected with store bought DI water.

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Ryan Clare	2/20/19 1830	Arcadis			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 2-27-19 1000	Company TAB

Custody Seals Intact: ∆ Yes ∆ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.4 #C

Ver: 08/04/2016

APPENDIX B

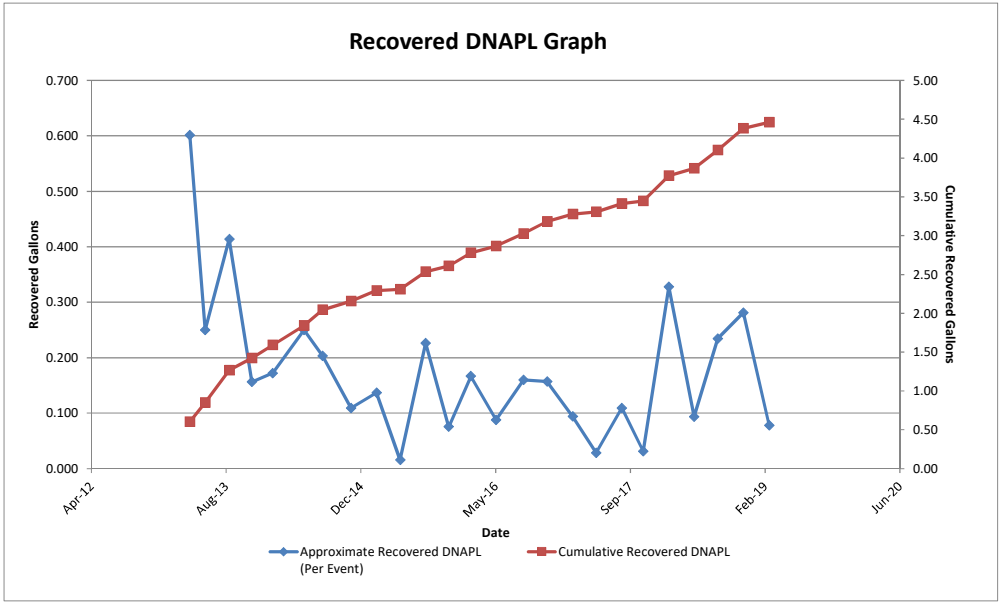
DNAPL Recovery Summary Table and Graph

Appendix B
DNAPL Recovery Summary

Annual Periodic Review Report
Madison Avenue Former MGP Site, Elmira, New York

Date	AW-17			NRW-2			NMW-0402S			Totals		
	Recoverd DNAPL (gal)	Total (gal)	Cumulative (gal)	Recoverd DNAPL (gal)	Total (gal)	Cumulative (gal)	Recoverd DNAPL (gal)	Total (gal)	Cumulative (gal)	Recoverd DNAPL (gal)	Total (gal)	Cumulative (gal)
4/1/2013	--	--	--	0.008	0.24	0.01	0.594	1.35	0.59	0.602	1.59	0.60
5/28/2013	--		--	0.000		0.01	0.250		0.84	0.250		0.85
8/26/2013	--		--	0.188		0.20	0.227		1.07	0.414		1.27
11/18/2013	--		--	0.031		0.23	0.125		1.20	0.156		1.42
2/3/2014	--		--	0.016		0.24	0.156		1.35	0.172		1.59
5/30/2014	--	--	--	0.000	0.17	0.24	0.250	0.53	1.60	0.250	0.70	1.84
8/7/2014	--		--	0.109		0.35	0.094		1.70	0.203		2.05
11/20/2014	--		--	0.047		0.40	0.063		1.76	0.109		2.16
2/23/2015	--		--	0.012		0.41	0.125		1.88	0.137		2.29
5/22/2015	--	0.02	--	0.000	0.35	0.41	0.016	0.11	1.90	0.016	0.48	2.31
8/24/2015	0.008		0.01	0.188		0.60	0.031		1.93	0.227		2.54
11/18/2015	0.008		0.02	0.021		0.62	0.047		1.98	0.076		2.61
2/8/2016	0		0.02	0.146		0.76	0.021		2.00	0.167		2.78
5/12/2016	0	0.00	0.02	0.078	0.45	0.84	0.010	0.05	2.01	0.088	0.50	2.87
8/22/2016	0		0.02	0.156		1.00	0.004		2.01	0.160		3.03
11/17/2016	0		0.02	0.141		1.14	0.016		2.03	0.157		3.18
2/20/2017	0		0.02	0.078		1.22	0.016		2.04	0.094		3.28
5/18/2017	0	0.00	0.02	0.021	0.41	1.24	0.008	0.09	2.05	0.03	0.50	3.31
8/21/2017	0		0.02	0.094		1.33	0.016		2.07	0.11		3.41
11/9/2017	0		0.02	0.000		1.33	0.031		2.10	0.03		3.45
2/12/2018	0		0.02	0.297		1.63	0.031		2.13	0.33		3.77
5/17/2018	0	0.00	0.02	0.047	0.53	1.68	0.047	0.16	2.18	0.09	0.69	3.87
8/13/2018	0		0.02	0.172		1.85	0.063		2.24	0.23		4.10
11/15/2018	0		0.02	0.250		2.10	0.031		2.27	0.28		4.38
2/19/2019	0		0.02	0.0625		2.16	0.016		2.29	0.08		4.46

Notes:
1. A value of zero for 'Recovered DNAPL' indicates DNAPL was observed but not recoverable.
2. -- for 'Recovered DNAPL' indicates DNAPL was not observed.
3. DNAPL was first observed in AW-17 during the August 24, 2015 site visit. AW-17 is now included in quarterly NAPL gauging schedule.



APPENDIX C

Site Inspection Form

Site Inspection Form
Madison Avenue Former MGP Site - Elmira, New York

Date/Time: 2/21/2019 0900 Weather: Sunny

Personnel: Ryan Clare Temperature: 37 degrees F

General Requirements

Photographs will be attached to document the condition of each inspection item identified below. A written description of any item(s) that is considered to be in poor condition is required.

1. General Site Conditions:

Monitoring wells	[X] Good	[ ] Poor*
Application wells	[X] Good	[ ] Poor*
Performance Monitoring wells	[X] Good	[ ] Poor*
NAPL Monitoring/Recovery wells	[X] Good	[ ] Poor*
Cover Areas (Grass and Stone)	[X] Good	[ ] Poor*
Signs of intrusive activities	[X] No	[ ] Yes*
Evidence of Settlement	[X] No	[ ] Yes*

Note:
-Cover area inspection is to determine if intrusive activities may have occurred since the previous site visit.

2. Site Cover Systems:

Borrowing/Depressions	[X] No	[ ] Yes*
Standing Water	[X] No	[ ] Yes*
Missing Stone	[X] No	[ ] Yes*
Vegetative Growth	[ ] No	[X] Yes*
Evidence of Settlement	[X] No	[ ] Yes*
Sedimentation	[X] No	[ ] Yes*
Damage/Failure	[X] No	[ ] Yes*

3. Notes: Vegetative growth is normal compared to previous site inspections. Brush and tall grass grow in areas not covered by gravel. NYSEG is staging more sheet piling on site. Refer to site inspection pictures for additional sheet pile.

Site Inspection Form

Madison Avenue Former MGP Site - Elmira, New York

* Indicates condition should be reported to NYSEG Project Manager/OM&M Coordinator.

APPENDIX D

Site Inspection Photographic Log

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
PHOTOGRAPH #: 1	
PHOTOGRAPHER: NJB	
DATE: 02/21/19	
DIRECTION: SE	
COMMENT: Picture showing (snow covered) stone parking area over former manufactured gas plant (MGP) area. Photo indicates cover is in good condition; no repair is needed.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
PHOTOGRAPH #: 2	
PHOTOGRAPHER: NJB	
DATE: 02/21/19	
DIRECTION: E	
COMMENT: Picture showing (snow covered) stone parking area over former MGP. Photo indicates cover is in good condition; no repair is needed.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
PHOTOGRAPH #: 3	
PHOTOGRAPHER: NJB	
DATE: 02/21/19	
DIRECTION: NW	
COMMENT: Picture showing (snow covered) stone parking area over former MGP. Photo indicates cover is in good condition; no repair is needed. Area currently used for material staging.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
PHOTOGRAPH #: 4	
PHOTOGRAPHER: NJB	
DATE: 02/21/19	
DIRECTION: N	
COMMENT: Picture showing (snow covered) stone parking area over former MGP. Photo indicates cover is in good condition; no repair is needed. Area currently used for material staging.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
PHOTOGRAPH #: 5	
PHOTOGRAPHER: NJB	
DATE: 02/21/19	
DIRECTION: NE	
COMMENT: Picture showing stone and vegetation coverage over PCB IRM removal areas (1997) and purifier waste removal area (2011). Photo indicates cover is in good condition; no repair is needed. Area currently used for material staging	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
PHOTOGRAPH #: 6	
PHOTOGRAPHER: NJB	
DATE: 02/21/19	
DIRECTION: E	
COMMENT: Picture showing stone coverage and stock piled materials over ISS areas. Photo indicates cover is in good condition; no repair is needed.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
PHOTOGRAPH #: 7	
PHOTOGRAPHER: NJB	
DATE: 02/21/19	
DIRECTION: SW	
COMMENT: Picture showing grass area and stone coverage over ISS area, purifier waste IRM removal area (2004) and purifier waste removal area (2011). Photo indicates cover is in good condition; no repair is needed.	

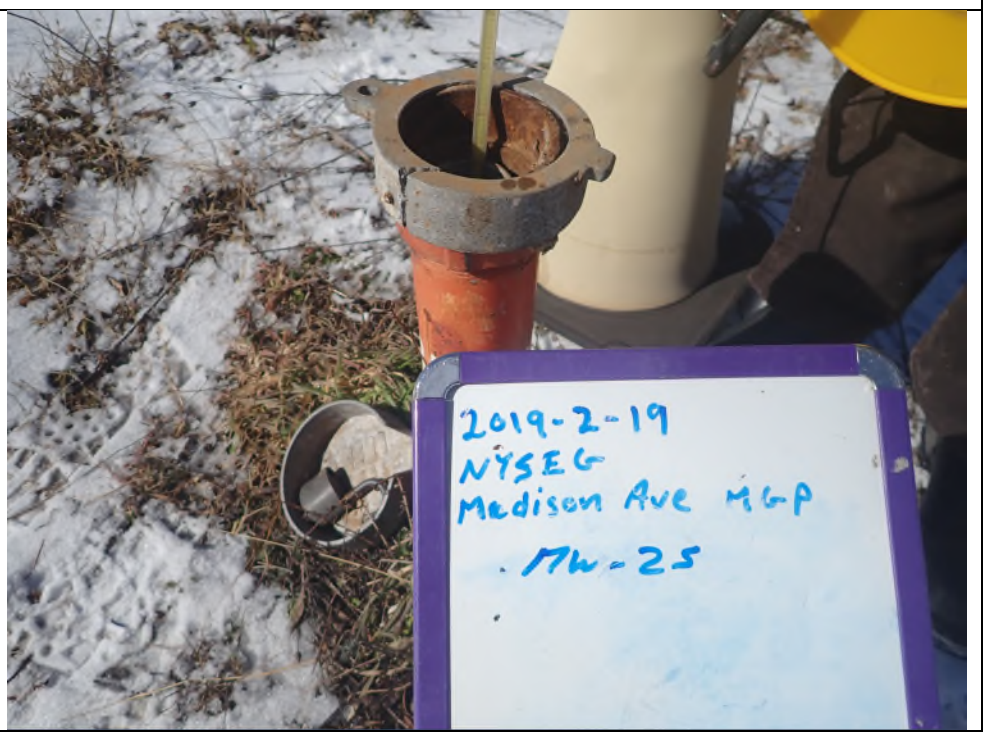
CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
PHOTOGRAPH #: 8	
PHOTOGRAPHER: NJB	
DATE: 02/21/19	
DIRECTION: WSW	
COMMENT: Picture showing treatment system area. Photo indicates cover is in good condition; no repair is needed.	

APPENDIX E

Well Inspection Photographic Log

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-1S	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-1S. Well surface completion requires repair/replacement.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-1D	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-1D. Well is in good condition with cap and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-2S	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-2S. Cap mounting rig is cracked but competent. Well is in good condition with locking cap.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-2D	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-2D. Well is in good condition with locking cap.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-4S	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-4S. Well is in good condition with locking cap and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-6S	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-6S. Well is in good condition with locking cap and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-7	
PHOTOGRAPHER: NJB	
DATE: 02/19/109	
DIRECTION: NA	
COMMENT: Photograph showing MW-7. Well is in good condition. Well has well plug and locking well cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-8S	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph of MW-8S. Well is in good condition with locking well cap and competent cover.	

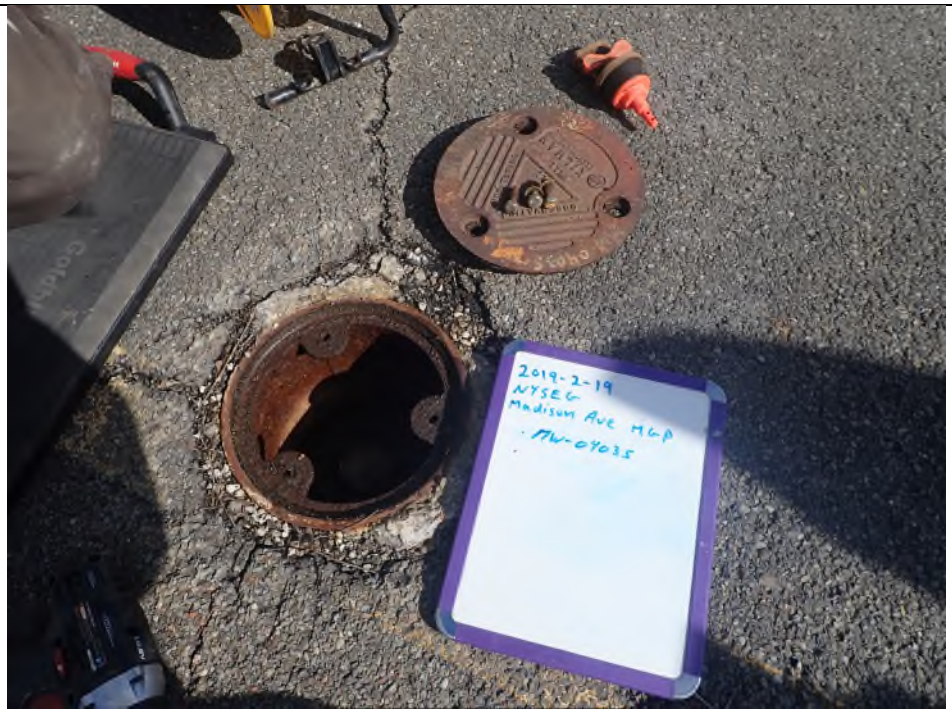
CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-8D	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-8D. Well is in good condition with locking well cap and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-9S	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-9S. Well is in good condition with locking well cap and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-9D	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-9D. Well is in good condition with locking well cap and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-0304D	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-0304D. Well is in good condition with well and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-0402S	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-0402S. Well is in good condition with locking well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-0403S	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-0403S. Well is in good condition with locking well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-0404S	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing MW-0404S. Well is in good condition with locking well plug and competent cover. Bolted well lid was observed missing during the Annual Site Inspection. The lid will be replaced.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-0404D	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph of MW-0404D. Well is in good condition with locking well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: MW-0405S	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph of MW-0405S. Well is in good condition with locking well plug and competent cover. Surrounding concrete flags are cracked, but road box is secure.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-1	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-1. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-2	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-2. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-3	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-03. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-4	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-4. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-5	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-05 Well and stainless – steel canister/assembly is in good condition. Well has well and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-6	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-6. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-7	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-7. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-8	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-8. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-9	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-9. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-10	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-10. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-11	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-11. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-12	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-12. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-13	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-13. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-14	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-14. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-15	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-15. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

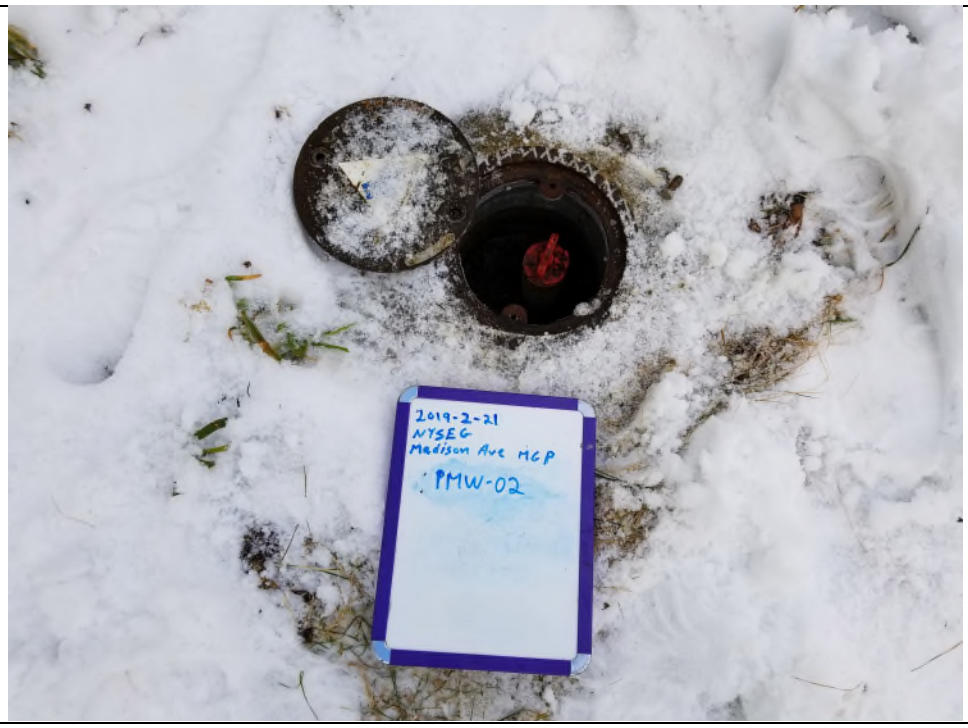
CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-16	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-16. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-17	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-17. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-18	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-18. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: AW-19	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing AW-19. Well and stainless-steel canister/assembly is in good condition. Well has well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: PMW-1	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing PMW-1. Well is in good condition with well plug and competent cover, however well road box has settled since installation. During the February 2019 site visit, the PVC riser was cut shorter and the well measuring point was resurveyed.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: PMW-2	
PHOTOGRAPHER: NJB	
DATE: 02/21/19	
DIRECTION: NA	
COMMENT: Photograph showing PMW-2. Well is in good condition with well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: PMW-3	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph is showing well PMW-03. Well is in good condition with well plug and competent cover, however well road box has settled since installation. During the February 2019 site visit, the PVC riser was cut shorter and the well measuring point was resurveyed.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: PMW-4	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing PMW-4. Well is in good condition with well plug and competent cover, however well road box has settled since installation. During the February 2019 site visit, the PVC riser was cut shorter and the well measuring point was resurveyed.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: PMW-5	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing PMW-5. Well is in good condition with well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: PMW-6	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing PMW-6. Well is in good condition with well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: NRW-1	
PHOTOGRAPHER: NJB	
DATE: 02/19/19	
DIRECTION: NA	
COMMENT: Photograph showing NRW-1. Well is in good condition with well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: NRW-2	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing NRW-2. Well is in good condition with the well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: NRW-3	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing NRW-3. Well is in good condition with the plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: NRW-4	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing NRW-4. Well is in good condition with well plug and competent cover.	

CLIENT: NYSEG	**SITE NAME: Madison Avenue Former MGP Site**
PROJECT#: B0013134.0001	**SITE LOCATION: Elmira, New York**
WELL ID: NMW-0402S	
PHOTOGRAPHER: NJB	
DATE: 02/20/19	
DIRECTION: NA	
COMMENT: Photograph showing NMW-0402S. Well is in good condition with the plug and competent cover.	

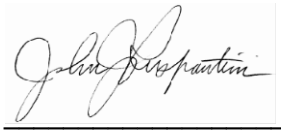
APPENDIX F

NYSEG Certification Statement

Appendix F
Certification Statement

Based on information provided to NYSEG, NYSEG verifies that the site engineering controls described in the ROD (NYSDEC 2008) were in place during the reporting period, and has no knowledge that changes have occurred at the Madison Avenue Former MGP Site that would impair the ability of the engineering controls to protect public health and the environment, or constitute a violation or failure to comply with the operation and maintenance plan described in the *Site Management Plan*.

During the reporting period, NYSDEC, NYSEG and the City of Elmira have worked to define and are working to establish Institutional Controls at the Site that would further protect public health and safety.



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