

Fourth Semiannual Monitoring (SA4) Report (July – December 2017) Site Management Plan Monitoring

Former Clifton Manufactured Gas Plant Staten Island, New York NYSDEC Site No.: 2-43-023 Order on Consent Index #: D2-0001-98-04

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List of Acronyms

AWQSGV Ambient Water Quality Standards and Guidance Values

BTEX Benzene, Toluene, Ethylbenzene and Xylene

CAMP Community Air Monitoring Program

COD Chemical Oxygen Demand

DNAPL Dense Non-Aqueous Phase Liquid

DO Dissolved Oxygen

DUSR Data Usability Summary Report

EC Engineering Control

ECL Environmental Conservation Law

GC/MS Gas Chromatograph/Mass Spectrometry

IC Institutional Control

ICP Inductively Coupled Plasma
LCS Laboratory Control Standard
MGP Manufactured Gas Plant

MNA Monitored Natural Attenuation

MS/MSD Matrix Spike/Matrix Spike Duplicate

NTU Nephelometric Turbidity Unit

NYSDEC New York State Department of Environmental Conservation

ORP Oxidation Reduction Potential
PAH Polycyclic Aromatic Hydrocarbon

Report Fourth Semiannual Monitoring (SA4) Report

SA Semiannual

Site Former Clifton Manufactured Gas Plant located in Staten Island, New York

SMP Site Management Plan

SPDES State Pollutant Discharge Elimination System
USEPA United States Environmental Protection Agency

WWTP Waste Water Treatment Plant

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Measurements and Units

bgs Below Ground Surface

ft Feet in Inch

μg/L Micrograms per Liter

ND Not Detected

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1.0 Introduction

This Fourth Semiannual (SA4) Monitoring Report (Report) (July – December 2017) has been prepared by AECOM, on behalf of National Grid, to evaluate the on-going performance and effectiveness of the engineering and institutional controls at the Former Clifton Manufactured Gas Plant (the Site, Figure 1), located in Staten Island, New York. This Report summarizes and documents the results of monitoring activities completed at the Site from July through December 2017. Activities were completed in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved Site Management Plan (AECOM, 2016a; SMP). This is the fourth Semiannual Monitoring Report since the SMP was finalized in January 2016. Interim monitoring activities were completed from 2014 through 2015, and were reported upon separately.

The Site was remediated in accordance with the NYSDEC Records of Decision (NYSDEC, 2004 and NYSDEC, 2006) and, as documented in the SMP. Manufactured Gas Plant (MGP)-related residuals remaining in Site soils and groundwater are being managed in accordance with the SMP. The SMP provides details of institutional controls (ICs) and engineering controls (ECs) that restrict exposure to the MGP-related residuals. The SMP will include Environmental Easements (currently pending finalization), when they are executed in accordance with New York State Environmental Conservation Law (ECL) Article 71, Title 36.

This Report includes details on the following activities completed at the Site during the reporting period:

- Dense Non-Aqueous Phase Liquid (DNAPL) gauging and recovery;
- Groundwater monitoring (gauging and sampling);
- Depressurization pump and treat system operation and maintenance, and State Pollutant Discharge Elimination System (SPDES) permit equivalent-required sampling; and
- Details of any ground-intrusive activities within the SMP limits (none observed).

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2.0 Background

The Site is located in Staten Island, New York. The Site, as defined in the SMP, includes all or portions of 25 Willow Avenue and 40 Willow Avenue (Figure 2). The off-Site areas, as defined in the SMP, include all or portions of One Edgewater Street, 89 Willow Avenue (owned by National Grid but outside of the Operable Unit boundaries and considered off-Site for purposes of the SMP), 53 Lynhurst Avenue, properties east of 25 Willow Avenue (Block 2822, Lots 21, 22, 23, 24, and 26), and New York City rights-of-way along Willow Avenue, Bay Street, and Edgewater Street (Figure 2).

The SMP, approved by the NYSDEC in January 2016, concludes the remedy implementation at the Site. The SMP outlines a number of ECs/ ICs required to manage the remaining MGP-related impacts at the Site. In particular, these ECs include:

- Subsurface vertical DNAPL barrier walls;
- A subsurface vertical containment cell;
- A containment cell depressurization pump and treat system;
- Soil cover systems;
- Composite cover systems;
- Passive DNAPL collection systems; and
- Monitored natural attenuation (MNA).

ICs place restrictions on certain Site activities and require periodic monitoring to evaluate the performance and effectiveness of the Site remedy in reducing and mitigating remaining MGP-related residuals at the Site and off-Site areas.

An interim monitoring program of similar scope was in place for approximately two years, from 2014 through 2015, prior to approval of the SMP.

3.0 Monitoring Activities

3.1 Containment Cell Depressurization System

A depressurization pump and treatment system (system) was installed in 2015 and 2016 on the 40 Willow Avenue property to maintain the integrity of the containment cell that was constructed on that property. The system removes groundwater from the containment cell so that pressure does not build up within it and potentially cause a failure. The system is comprised of a groundwater extraction pump, wastewater treatment plant (WWTP), and discharge to New York Harbor via a storm sewer line under a SPDES permit equivalent. The Containment Pad Depressurization System – Final Construction Completion Report (AECOM, 2016b) provides details of the construction of the system. Start-up of the system, and routine operation, began in January 2016.

The system was generally operating as intended at the beginning of the period of this Report. However, a WWTP system shutdown was prompted by the analytical results for the monthly monitoring sample collected on July 28, 2017, in which a benzene concentration of 51 μ g/L was reported (exceeding the SPDES permit equivalent limit of 5 μ g/L); all other analytes were not detected or within acceptable ranges.

Initial investigations focused on whether this data was a result of laboratory error as the previous detection of benzene in June 2017 was 2.1 μ g/L. An initial resampling event indicated benzene was not detected in the effluent, and the system was restarted on August 14, 2017; compliance samples for benzene, toluene, ethylbenzene and xylenes (BTEX) only (following notice to the NYSDEC of the exceedance and concurrence that only BTEX sampling was required for system restart) were collected on August 14 and 15, during which time approximately 2,300 gallons of water was processed and discharged.

Results of the August 14 sample (received after the August 15 sample was collected) indicated benzene was present at 95 μ g/L, exceeding the discharge limit, and the system was again taken off-line. The results of the August 15 sample provided further confirmation of benzene in the effluent (detected at 450 μ g/L), indicating that the effluent sample results from July were not the result of laboratory or sampling error.

Upon review of the effluent monitoring data, it was concluded that breakthrough of organic constituents through the granulated activated carbon (GAC) media was likely occurring, and replacement of the media was planned for September 11, 2017. The spent GAC was removed from all three vessels in the WWTP and containerized on-site in 55-gallon drums for characterization and disposal. New virgin GAC, meeting the original WWTP design specifications, was placed in all three vessels and wetted for 24 hours before system restart, in accordance with manufacturer requirements and best practices for WWTP operation.

The system was restarted on the afternoon of September 12. In accordance with the SPDES permit equivalent restart sampling requirements and the prior concurrence from NYSDEC waiving requirements for non-BTEX analyses during system restart, compliance samples for BTEX analysis were planned for seven consecutive days upon system restart, and samples were collected on September 13 and September 14 (during which time approximately 2,000 gallons of water was processed and discharged). Results of the September 13 sample (received after the September 14 sample was collected) indicated benzene was still present in system effluent at 150 μ g/L, exceeding the discharge limit. The system restart was suspended and the WWTP was taken off-line. The results of the September 14 sample (received the following day) indicated a benzene concentration of 3.4 μ g/L, within discharge limits.

The system remained off-line while reviews of system performance were conducted. Over the ensuing weeks, water in the system was periodically recirculated with endpoint and midfluent samples collected

for purposes of evaluating performance of the GAC vessels. Based on review of the data and conversations with the GAC vendor, it was concluded that high benzene concentrations evident in sampled collected immediately upon system restarts were likely due to the affinity for benzene to desorb from the GAC media when there is no flow for an extended period of time. Sampling during extended recirculation confirmed this behavior; namely, that benzene concentrations decreased as recirculation flow time increased.

Accordingly, in preparation for restarting the system, water was first recirculated for approximately 18 hours before resuming groundwater extraction and discharge. Recirculation began in the evening of October 24, and restart of the extraction pump and resumption of system discharge was completed in the afternoon of October 25.

The restart compliance sampling for BTEX only began on October 26, 2017 and continued for seven consecutive days (October 26 through November 1). Analytical results indicated benzene concentrations ranged from not detected to maximum of $0.54~\mu g/L$ during this time. All other BTEX components were not detected. Upon completion of the seven-day restart period, normal system operation resumed and the effluent sampling schedule reverted to a monthly frequency.

WWTP system operation was again halted in December, after benzo[a]pyrene was detected at a concentration of 0.27 μ g/L in the monthly effluent compliance sample collected on December 21, 2017, exceeding the SPDES permit equivalent limit of 0.09 μ g/L. Other polycyclic aromatic hydrocarbons (PAHs) (benzo[a]anthracene, benzo[b]fluoranthene and indeno[1,2,3-cd)pyrene) were also detected in this sample, but below their SPDES permit equivalent discharge limits. After further investigation, including resampling, laboratory or sampler error was suspected as the cause the PAH detections in this sample. The system was subsequently restarted in January, 2018; complete reporting on this restart event will be made in a subsequent report as it occurred outside of the SA4 reporting period.

All effluent sample results for July through December 2017 are summarized in Table 1. A Data Usability Summary Report (DUSR) is included as Appendix A.1.

3.2 DNAPL Collection System

The Site DNAPL collection system is being monitored and DNAPL recovery is occurring in accordance with the SMP. Previous Interim Status and Semiannual Reports (AECOM, 2014a, AECOM, 2015a, AECOM, 2016b, AECOM, 2016c, AECOM, 2016d, AECOM, 2017 and AECOM, 2018) described in detail the initial testing and results, and gauging and removal program that has been implemented to date.

3.2.1 DNAPL Recovery Well Network

There are currently 25 passive DNAPL recovery wells at the Site for gauging of DNAPL levels, if any, and recovery of DNAPL, if present. Well construction details are summarized in Table 2, and details including construction logs and development logs are provided in the Construction Completion Report (AECOM, 2014b) and SMP (AECOM, 2016a). Three DNAPL recovery wells were initially installed in 2009 within the containment cell on the 40 Willow Avenue property and twenty-three DNAPL recovery wells were installed in 2013 adjacent to the vertical subsurface DNAPL barrier wall (slurry wall) along Willow Avenue and Bay Street. One of the 40 Willow Avenue recovery wells (NRW-03D) was abandoned in May 2017, in accordance with the SMP, reducing the total number of wells in the network to 25. The DNAPL recovery well network along Willow Avenue, including the containment cell and along Bay Street, is shown in Figures 3 and 4, respectively.

3.2.2 O&M DNAPL Gauging

As called for in the SMP, the DNAPL recovery wells are gauged on a bi-weekly, monthly, quarterly or annual basis to check for the presence of DNAPL. The most recent round of DNAPL recovery well gauging was completed on December 21, 2017. The recovery wells are gauged using a weighted stainless steel measuring tape as well as an Oil/Water Interface probe. Observations of blebs and sheens on the interface probe measuring tape are noted but not used to calculate DNAPL thickness. Observations from the weighted measuring tape are used to determine DNAPL thickness because the wire of the Oil/Water Interface probe can become thickly coated with DNAPL and not sink fully, providing inaccurate data. The results from the gauging events during the period of this Report are included in Table 3.

3.2.3 O&M DNAPL Removal and Disposal

As called for in the SMP and Record of Decision, DNAPL is removed from wells where present and removable. Since completion of a Baildown Test (AECOM, 2014a), DNAPL accumulated within the recovery wells has been removed as appropriate to the rate of DNAPL accumulation in each recovery well. Following gauging, recoverable DNAPL is removed from the wells. DNAPL is removed using the AECOM air lift™ (compressed air vacuum), peristaltic pumps or steel bailers as appropriate, based on the rate of accumulation and viscosity of the DNAPL at each recovery well. DNAPL removed from the recovery wells is containerized in 55-gallon drums, which are staged on-site in drum containment sheds until transported for off-site disposal.

The volume of DNAPL and water (fluid mixture) recovered from each recovery well between January 2010 and December 2017, and for each recovery event in 2017 is provided in Table 4. In summary, through the end of December 2017, the following cumulative volumes have been removed from ten (10) recovery wells:

- RW-201I 633 gallons since 2010, 79 gallons from July through December 2017;
- RW-205D 382 gallons since 2010, 24 gallons from July through December 2017;
- RW-206IA 19 gallons since 2010, 4 gallons from July through December 2017;
- RW-206IB 104 gallons since 2010, 10 gallons from July through December 2017;
- RW-207I 352 gallons since 2010, 102 gallons from July through December 2017;
- RW-208I 1,437 gallons since 2010, 132 gallons from July through December 2017;
- RW-209S 125 gallons since 2010, 62 gallons from July through December 2017;
- RW-211I 97 gallons since 2010, 5 gallons from July through December 2017;
- NRW-02I 48 gallons since 2010, none from July through December 2017; and
- NRW-03D 39 gallons since 2010, this well was abandoned in May 2017.

Disposal of the recovered DNAPL and water mixture stored onsite occurred on a regular basis. Manifests for DNAPL/water mixture disposal are included in Appendix B.

In accordance with the requirements of the SMP and revisions to the recovery well monitoring program approved as part of the Fourth Semi-Annual Interim Monitoring Report, National Grid will continue DNAPL recovery efforts according to the following schedule:

- RW-208I on a bi-weekly basis;
- RW-201I and RW-205D on a monthly basis;

- RW-206IB, RW-207I, RW-209S, and RW-211I on a guarterly basis; and
- The remaining eighteen (18) recovery wells on an annual basis (if DNAPL is present).

3.3 Cover System Monitoring

As described in the SMP, there are two cover systems installed at the Site and off-Site areas (Figure 5):

- A soil cover system comprised of a minimum of 24-inches of clean fill placed over the Site (25 Willow Avenue) and off-Site areas (89 Willow Avenue); and
- A composite cover system comprised of a minimum of 6-inches of concrete cap, concrete foundations, soil, and/or asphalt placed on the Site (40 Willow Avenue) and off-Site areas (One Edgewater Street, 89 Willow Avenue, 53 Lyndhurst Avenue, properties east of 25 Willow Avenue, and New York City rights-of-way).

There were no known disturbances to the caps during the period of this Report.

3.4 DNAPL Barrier Monitoring

There has been no activity or event on-site that is known to have impacted the subsurface remedial infrastructure (vertical barrier walls and the containment cell) from July through December 2017.

3.5 2017 Annual Groundwater Monitoring Event

The monitoring well network is to be initially monitored annually for a period of three years, and biannually thereafter. The first round of annual groundwater sampling was conducted in December, 2016; results from that sampling event are discussed in the Second Semiannual Monitoring Report (SA2, AECOM, 2017). Groundwater monitoring may be discontinued in monitoring wells if concentrations decrease below NYSDEC Ambient Water Quality Standards and Guidance Values (AWQSGV) for two consecutive sampling events, and approved by the NYSDEC. The sampling frequency may also be modified with the approval of the NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by the NYSDEC. The groundwater monitoring well network includes 13 wells, as shown on Figure 6. The second annual groundwater sampling event was conducted in December 2017, as described below.

3.5.1 Well Gauging and Redevelopment

Prior to the annual groundwater monitoring program, the thirteen site monitoring wells included in the annual groundwater monitoring program were inspected during a gauging event to measure groundwater and total well depths on December 6, 2017. Gauging data is summarized in Table 5. Based on the results of the gauging event, it was determined that no groundwater sampling wells required redevelopment prior to sampling in 2017.

3.5.2 Monitoring Well Sampling

AECOM performed the annual groundwater sampling event on December 20 and 21, 2017, in accordance with the SMP. During this event, samples were collected from RW-200I, RW-200S, RW-202I, RW-202S, RW-203I, RW-204I, RW-210I, RW-21, RW-23, RW-25, and RW-26. Although included in the monitoring network, RW-210S was not sampled due to the presence of DNAPL in the well at the time of the sampling event.

Each well was purged using low-flow sampling techniques specified in the United States Environmental Protection Agency (USEPA) Region 1 guidance document, "Low-Stress (low flow) Purging and

Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells" (USEPA, 2010). Wells were purged at a low flow rate using a Pine Peri-Pump peristaltic pump. During purging, water quality data (temperature, specific conductance, pH, dissolved oxygen (DO), oxidation/reduction potential (ORP), and turbidity) were recorded approximately every five minutes. These parameters were measured with a multi-parameter water quality meter attached to a continuous flow-through cell which was connected to the pump discharge tubing. Once field parameters stabilized, groundwater samples were collected. All equipment used for groundwater monitoring was calibrated to ensure accuracy and precision. Low Flow Groundwater Sample Collection Records from the 2017 annual sampling event are included in Appendix C.

All samples were packed in coolers with ice following collection, and sent by courier under proper chain of custody to TestAmerica Laboratories, Inc., in Edison, New Jersey. The samples were analyzed for the following parameters:

- Organic Compounds
 - o BTEX by USEPA SW-846 Method 8260C, and
 - PAHs by USEPA Method 8270D, including Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(ghi)perylene, Chrysene, Hexachlorobenzene and Indeno(1,2,3-cd)pyrene, were determined using gas chromatograph/mass spectrometry (GC/MS) in selected ion monitoring (SIM) mode.

MNA Parameters:

- Methane by RSK-175,
- Total, Bicarbonate, Carbonate and Hydroxide Alkalinity by Standard Method SM 2320B,
- o Ammonia by SM4500 NH3 H,
- Nitrate and Nitrite as N by USEPA Method 300.0,
- Total Kjeldahl Nitrogen by USEPA Method 351.2,
- Sulfate by ASTM Method D516-90, 02,
- Sulfide by Standard Method 4500 S2 F,
- Free Carbon Dioxide by Standard Method SM 4500 CO2 D,
- Chemical Oxygen Demand (COD) by Standard Method SM 5220D,
- Iron and Manganese on filtered and unfiltered samples by USEPA Method 6020A, and
- Ferrous Iron by Standard Method SM 3500 E D.

3.5.3 Groundwater Flow

Using groundwater elevation gauging data from the December 6, 2017 gauging event, the groundwater flow direction was determined to be east to northeast, towards Upper New York Bay. This data consisted of the groundwater elevations measured at RW-200S, RW-201S, RW-202S, RW-203S, RW-206S, RW-22, RW-23, RW-25, and RW-26. Groundwater elevations could not be measured at RW-207S, RW-208S, RW-209S or RW-210S because of artesian conditions. Groundwater elevations are presented in Table 5, and an illustration of groundwater flow contours can be found on Figure 6.

3.5.4 Data Usability Summary Report (DUSR)

Data validation was performed on two data packages from TestAmerica Laboratories, Inc. of Edison, New Jersey for the analysis of aqueous recovery samples collected at the Site on December 20-21, 2017. Data quality for the organic analyses was evaluated by reviewing the following parameters: holding times, GC/MS tuning and performance standards, internal standards, initial and continuing calibrations, matrix spike/matrix spike duplicates (MS/MSD), surrogate recoveries, laboratory control standards (LCSs), laboratory blanks, laboratory and field duplicates, compound identification, and compound quantitation. Inorganic data quality was evaluated by reviewing the following parameters: holding times, MS/MSDs, initial calibrations, continuing calibration verification standard recoveries, contract required detection limit standard recoveries, LCSs, inductively-coupled plasma (ICP) interference check sample recoveries, ICP serial dilution results, field and laboratory duplicates, laboratory blanks, and analyte quantitation.

Six non-detect free carbon dioxide results and one non-detect ferrous iron result were rejected because the holding time was grossly exceeded. One non-detect SVOC result was rejected because of poor method sensitivity. All other data have been determined to be useable for the purpose of assessing the presence/absence and quantitative concentrations of the compounds in groundwater with some qualification. The qualifications used to determine the usability of these samples is presented in Appendix A.2. The completeness of this data set was 98.3%, within the 90-100% acceptable range.

3.5.5 Groundwater Monitoring Analytical Results

A summary of organic compounds (BTEX and PAHs) data, compared to NYSDEC AWQSGVs, is presented in Table 6. The AWQSGVs include statutory standards for BTEX compounds; no standards exist for PAHs, and data is compared to relevant guidance values. Analytical results for MNA parameters is presented for comparison purposes only, and are not compared to any regulatory standards or guidance values. Analytical results are also depicted on site maps in Figures 7 and 8. Results are summarized below for groupings of site wells, downgradient wells, and up/sidegradient wells as described in the SMP.

3.5.5.1 Site Wells

Wells RW-202S and RW-202I are located within the Site behind the barrier wall, adjacent to Bay Street, and are considered to function as Site wells in the SMP. With regard to BTEX and PAH compounds, all constituent concentrations were below the AWQSGVs at RW-202S and RW-202I. During the previous groundwater sampling event in December 2016, there were exceedances of the AWQSGVs for BTEX at RW-202S and for PAHs at RW-202S and RW-202I. While there are no PAH detections, the detection limit exceeds the AWQSGVs for Benzo(a)anthracene, Benzo(b)fluoranthene, Chrysene, and Indeno(1,2,3-cd)pyrene.

MNA values for the Site Wells are summarized in Table 6.

3.5.5.2 Downgradient Wells

Wells RW-203S and RW-203I are located outside of the barrier wall just off-Site within the Bay Street right-of-way, and are considered downgradient wells in the SMP. Wells RW-22, RW-23, RW-25, and RW-26 are all located on the One Edgewater Plaza property, and are likewise considered downgradient wells in the SMP. BTEX constituents did not exceed AWQSGVs at any of the Edgewater Plaza downgradient wells, but exceeded AWQSGVs at RW-203S and RW-203I:

- Benzene (AWQSGV standard of 1 μ g/L): RW-203S (91 μ g/L [90 μ g/L in the duplicate]), and RW-203I (69 μ g/L).
- Ethylbenzene (AWQSGV standard of 5 μ g/L): RW-203S (940 μ g/L [920 μ g/L in the duplicate]), and RW-203I (1,100 μ g/L).

 Total Xylenes (AWQSGV standard of 5 μg/L): RW-203S (390 μg/L [380 μg/L in the duplicate]), and RW-203I (1,100 μg/L).

Toluene (AWQSGV standard of 5 μg/L): RW-203S (34 μg/L [33 μg/L in the duplicate]), and RW-203I (310 μg/L).

With regard to PAH constituents, RW-22, RW-25, and RW-26 had no exceedances of the AWQSGVs, and exceedances at RW-23, RW-203S (and the duplicate sample from RW-203S) and RW-203I, summarized as follows:

- Acenaphthene (AWQSGV guidance of 20 μg/L): RW-203S (120 μg/L [130 μg/L in the duplicate]), and RW-203I (79 μg/L).
- Benzo(a)anthracene (AWQSGV guidance of 0.002 μg/L): RW-23 (0.16 μg/L).
- Benzo(b)fluoranthene (AWQSGV guidance of 0.002 μg/L): RW-23 (0.031 J μg/L).
- Naphthalene (AWQSGV guidance of 10 μg/L): RW-203S (2,600 μg/L [3,100 μg/L in the duplicate]), and RW-203I (2,900 μg/L).

3.5.5.3 Upgradient and Sidegradient Wells

Wells RW-200S and RW-200I (located on-Site at the north end of the barrier wall along Bay Street), and RW-204I (located along Willow Avenue, near the Bay Street end of the barrier wall) are considered sidegradient wells in the SMP. Wells RW-210S and RW-210I (located at the opposite end of the barrier wall from RW-204I) are considered upgradient wells in the SMP. Monitoring well RW-210S was not sampled during the 2017 groundwater monitoring sampling event due to the presence of trace NAPL in the well. There were no BTEX exceedances at RW-200I and RW-204I. RW-200S and RW-210I had constituent concentrations in exceedance of AWQSGVs for the BTEX compounds:

- Benzene (AWQSGV standard of 1 μg/L): RW-200S (220 μg/L) and RW-210I (930 μg/L).
- Ethylbenzene (AWQSGV standard of 5 μg/L): RW-200S (410 μg/L) and RW-210I (220 μg/L).
- Total Xylenes (AWQSGV standard of 5 μg/L): RW-200S (550 μg/L) and RW-210I (150 μg/L).
- Toluene (AWQSGV standard of 5 μg/L): RW-200S (290 μg/L).

With regard to PAH constituents, there were no AWQSGVs exceedances at RW-200I and RW-204I. RW-200S and RW-210I had PAH impacts in exceedance of NYSDEC AWQSGVs, summarized as follows:

- Acenaphthene (AWQSGV guidance of 20 μg/L): RW-210I (77 μg/L).
- Benzo(a)anthracene (AWQSGV guidance of 0.002 µg/L); RW-210I (0.04 µg/L).
- Benzo(b)fluoranthene (AWQSGV guidance of 0.002 μg/L): RW-210I (0.023 μg/L).
- Naphthalene (AWQSGV guidance of 10 μg/L): RW-200S (3,800 μg/L) and RW-210I (87 μg/L).

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4.0 Conclusions and Findings

4.1 Summary of Activities

National Grid has conducted Site management activities in accordance with the SMP since it was approved in January 2016. As previously described, Site management activities occurring during the period July through December 2017 included:

- DNAPL gauging and recovery, including recovery of 418 gallons of DNAPL/water fluid mixture from July through December 2017 and a total of 3,220 gallons removed since 2010;
- Groundwater monitoring;
- Depressurization pump and treat system operation and maintenance, and SPDES permit equivalent-required sampling; and
- Cover system monitoring.

4.2 Extent of Impacts to Groundwater

As described in Table 6 and Figures 6 through 8, the groundwater monitoring program identified detectable concentrations of BTEX and PAH compounds. BTEX detections in exceedance of the NYSDEC AWQSGVs for BTEX were limited to one upgradient well and one sidegradient well located immediately adjacent to the Site, and two downgradient wells on Bay Street. BTEX compounds were not detected above standards in the two Site wells or the four downgradient wells at One Edgewater Plaza. PAHs were detected in exceedance of the NYSDEC AWQSGVs at the one upgradient well, one sidegradient well, one well downgradient at One Edgewater Plaza, and two downgradient wells on Bay Street. PAHs were not detected in samples from the Site wells.

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5.0 Future Activities

In accordance with the SMP, the 2018 monitoring will include:

- · Annual groundwater monitoring,
- On-going DNAPL gauging and recovery,
- On-going SPDES permit-required sampling,
- Site-wide cover system inspection, and intrusion oversight, and
- Semi-annual reporting and Annual Periodic Review Report.

AECOM 6-1

6.0 References

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Tables



Containment Pad Depressurization System SPDES Equivalent Monitoring Results National Grid Former Clifton MGP Site Staten Island, New York



Sample ID		;	SPDES Permi	t Equivalent		WWTP-072817	WWTP-080717	WWTP-081417	WWTP-081517	WWTP-091317	WWTP-091417	WWTP-10262017	WWTP-10272017	WWTP-10282017
Date Sampled	Dischar	rge Limitatior	าร	Minimum Monitori	ng Requirements 1	7/28/2017	8/7/2017	8/14/2017	8/15/2017	9/13/2017	9/14/2017	10/26/2017	10/27/2017	10/28/2017
Parameter	Monthly Avg.	Daily Max	Units	Measurement Frequency	Sample Type	4601381271	4601387001	4601391371	4601392011	4601408571	4601409001	4601437321	4601438261	4601439081
pH														
рН	Monitor	6.5 - 8.5	pH units	Monthly	Grab	8.2 J	NS	NS	NS	NS	NS	NS	NS	NS
Total Suspended Solids														
Total Suspended Solids	Monitor	20	mg/l	Continuous	Meter	2.7	NS	NS	NS	NS	NS	NS	NS	NS
BTEX														
Benzene	Monitor	5	μg/l	Monthly	Grab	51	44	95	450	150	3.4	0.13	0.54	0.18
Ethylbenzene	Monitor	5	μg/l	Monthly	Grab	< 1.0 U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m/p-Xylenes	Monitor	10	μg/l	Monthly	Grab	< 1.0 U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	Monitor	5	μg/l	Monthly	Grab	< 1.0 U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	Monitor	5	μg/l	Monthly	Grab	< 1.0 U	< 1.0	< 1.0	< 1.0	0.25	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes (total)	Monitor		μg/l	Monthly	Grab	< 2.0 U	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
SVOCs														
Acenaphthene	Monitor	10	μg/l	Monthly	Grab	< 10 U	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthylene	Monitor	10	μg/l	Monthly	Grab	< 10 U	NS	NS	NS	NS	NS	NS	NS	NS
Anthracene	Monitor	10	μg/l	Monthly	Grab	< 10 U	NS	NS	NS	NS	NS	NS	NS	NS
Benzo(a)anthracene	Monitor	10	μg/l	Monthly	Grab	< 0.052 U	NS	NS	NS	NS	NS	NS	NS	NS
Benzo(a)pyrene	Monitor	0.09	μg/l	Monthly	Grab	< 0.052 U	NS	NS	NS	NS	NS	NS	NS	NS
Benzo(b)fluoranthene	Monitor	10	μg/l	Monthly	Grab	< 0.052 UJ	NS	NS	NS	NS	NS	NS	NS	NS
Benzo(ghi)perylene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS						
Chrysene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS						
Fluoranthene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS						
Fluorene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS						
Hexachlorobenzene	Monitor		μg/l	Monthly	Grab	< 0.021 U	NS	NS	NS	NS	NS	NS	NS	NS
Indeno(1,2,3-cd)pyrene	Monitor	10	μg/l	Monthly	Grab	< 0.052 U	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	Monitor	50	μg/l	Monthly	Grab	NS	NS	NS						
Phenanthrene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS						
Pyrene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS						
Metals	i e	İ	. 0	•	•									
Arsenic	Monitor	10	μg/l	Monthly	Grab	< 2.0 U	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	Monitor	80	μg/l	Monthly	Grab	1.4 J	NS	NS	NS	NS	NS	NS	NS	NS
Cvanide			, ,	,										
Cyanide, Total	Monitor	Monitor	mg/l	Monthly	Grab	< 0.010 U	NS	NS	NS	NS	NS	NS	NS	NS
Available Cyanide	Monitor	0.01	mg/l	Monthly	Grab	< 0.0020 U	NS	NS	NS	NS	NS	NS	NS	NS
Turbidity			.,	,										
Turbidity	No increase that v substantial visible Natural Cond	contrast to	NTU	Monthly	Grab	4.34	NS	NS	NS	NS	NS	NS	NS	NS

Notes:

NS - Not sampled

1 Upon system start/restart, monitor parameters daily for 7 consecutive days; if results for all parameters comply with the limits, the monitoring frequency becomes monthly.

Qualifiers:

Bold indicates compound was detected

Gray highlighting indicates a discharge limit exceedance

- J The analyte was positively identified; the numerical value is the approximate concentration of the analyte in the sample.
- U The material was analyzed for, but not detected above the level of the reported sample quantitation limit.
- UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximated and may be inaccurate or imprecise.



Containment Pad Depressurization System SPDES Equivalent Monitoring Results National Grid Former Clifton MGP Site Staten Island, New York



Sample ID		;	SPDES Permi	t Equivalent		WWTP-10292017	WWTP-10302017	WWTP-10312017	WWTP11012017	WWTP-112217	WWTP-12212017
Date Sampled	Discha	rge Limitatior	ıs	Minimum Monitori	ng Requirements 1	10/29/2017	10/30/2017	10/31/2017	11/1/2017	11/22/2017	12/21/2017
Parameter	Monthly Avg.	Daily Max	Units	Measurement Frequency	Sample Type	4601439381	4601439381	4601440021	4601440881	4601457111	4601475241
рН											
рН	Monitor	6.5 - 8.5	pH units	Monthly	Grab	NS	NS	NS	NS	8.5 J	8.6 J
Total Suspended Solids											
Total Suspended Solids	Monitor	20	mg/l	Continuous	Meter	NS	NS	NS	NS	4.1	3.7
BTEX											
Benzene	Monitor	5	μg/l	Monthly	Grab	0.14	0.093	< 1.0	0.25	0.14 J	< 1.0 U
Ethylbenzene	Monitor	5	μg/l	Monthly	Grab	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 U	< 1.0 U
m/p-Xylenes	Monitor	10	μg/l	Monthly	Grab	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 U	< 1.0 U
o-Xylene	Monitor	5	μg/l	Monthly	Grab	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 U	< 1.0 U
Toluene	Monitor	5	μg/l	Monthly	Grab	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 U	< 1.0 U
Xylenes (total)	Monitor		μg/l	Monthly	Grab	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0 U	< 2.0 U
SVOCs					•						
Acenaphthene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS	NS	< 10 U	< 10 U
Acenaphthylene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS	NS	< 10 U	< 10 U
Anthracene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS	NS	< 10 U	< 10 U
Benzo(a)anthracene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS	NS	< 0.052 U	0.075
Benzo(a)pyrene	Monitor	0.09	μg/l	Monthly	Grab	NS	NS	NS	NS	< 0.052 U	0.27
Benzo(b)fluoranthene	Monitor	10	µg/l	Monthly	Grab	NS	NS	NS	NS	< 0.052 U	0.47
Benzo(ghi)perylene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS	NS	< 10 U	< 10 U
Chrysene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS	NS	< 2.1 U	< 2.0 U
Fluoranthene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS	NS	< 10 U	< 10 U
Fluorene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS	NS	< 10 U	< 10 U
Hexachlorobenzene	Monitor		μg/l	Monthly	Grab	NS	NS	NS	NS	< 0.021 U	< 0.020 U
Indeno(1,2,3-cd)pyrene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS	NS	< 0.052 U	0.38
Naphthalene	Monitor	50	μg/l	Monthly	Grab	NS	NS	NS	NS	< 10 U	< 10 U
Phenanthrene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS	NS	< 10 U	< 10 U
Pyrene	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS	NS	< 10 U	< 10 U
Metals			1.0	,							
Arsenic	Monitor	10	μg/l	Monthly	Grab	NS	NS	NS	NS	< 2.0 U	< 2.0 U
Nickel	Monitor	80	μg/l	Monthly	Grab	NS	NS	NS	NS	< 4.0 U	< 4.0 U
Cyanide			۳۵ [,] .	,		 			-		
Cyanide, Total	Monitor	Monitor	mg/l	Monthly	Grab	NS	NS	NS	NS	< 0.010 U	< 0.010 U
Available Cyanide	Monitor	0.01	mg/l	Monthly	Grab	NS	NS	NS	NS	< 0.0020 U	< 0.0020 U
Turbidity				,							
Turbidity	No increase that substantial visible Natural Con-	contrast to	NTU	Monthly	Grab	NS	NS	NS	NS	6.81	9.39

Notes:

NS - Not sample

1 Upon system start/restart, monitor parameters daily for 7 consecutive days; if results for all parameters comply with the limits, the monitoring frequency becomes monthly.

Qualifiers:

Bold indicates compound was detected

Gray highlighting indicates a discharge limit exceedance

- J The analyte was positively identified; the numerical value is the approximate concentration of the analyte in the sample.
- U The material was analyzed for, but not detected above the level of the reported sample quantitation limit.
- UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximated and may be inaccurate or imprecise.



Table 2 DNAPL Recovery Well Construction Details National Grid Former Clifton MGP Site Staten Island, New York

DNAPL Recovery Well I.D.	Ground Surface Elevation ¹	Top of Vault Elevation	Top of Riser Pipe Elevation	Depth of Well (feet bgs)	Screen Interval	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Diameter (inches)	Top of Screen Elevation	Bottom of Screen Elevation	Protective Casing	Riser Type	Screen Type	Screen Slotted size/diameter (inches)	Sump Type	Sump Length (feet)
RW-200S	9.2	9.57	9.32	23	10.0 - 20.0	10	20	4.0	-0.8	-10.8	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-200I	9.2	9.58	9.33	37	24.0 - 34.0	24	34	4.0	-14.8	-24.8	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-201S	9.2	9.57	8.77	29	14.0 - 24.0	14	24	6.0	-4.8	-14.8	Flush-Mount	PVC	Wire Wrap SS	0.02/6.0	SS	5.0
RW-201I	8.9	9.37	8.6	37.5	22.5-32.5	22.5	32.5	6.0	-13.6	-23.6	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	5.0
RW-202S	9.85	9.94	9.64	25	10.0 - 20.0	10	20	6.0	-0.2	-10.2	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	5.0
RW-202I	9.85	9.85	9.48	42	27.0 - 37.0	27	37	6.0	-17.2	-27.2	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	5.0
RW-203S	9.3	9.16	8.67	27	14.0 - 24.0	14	24	4.0	-4.7	-14.7	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-203I	9.3	9.14	8.54	37	24.0 - 34.0	24	34	4.0	-14.7	-24.7	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-204I	9.12	9.35	8.6	43	30.0 - 40.0	30	40	4.0	-20.9	-30.9	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-205D	8.75	8.82	8.18	77	64.0 - 74.0	64	74	4.0	-55.3	-65.3	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-206S	8.6	9.02	8.26	28	15.0 - 25.0	15	25	4.0	-6.4	-16.4	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-206IA	8.6	9.05	8.15	48	35.0 - 45.0	35	45	4.0	-26.4	-36.4	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-206IB	8.55	9.13	7.63	58	45.0 - 55.0	45	55	4.0	-36.5	-46.5	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-207S	8.5	8.8	8.15	23	10.0 - 20.0	10	20	4.0	-1.5	-11.5	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-207I	8.5	8.77	8.23	33	20.0 - 30.0	20	30	4.0	-11.5	-21.5	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-208S	8.27	8.53	7.81	23	10.0 - 20.0	10	20	4.0	-1.7	-11.7	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-208I	8.27	8.52	7.23	42	29.0 - 39.0	29	39	4.0	-20.7	-30.7	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-209S	8	8.48	7.63	30	15.0 - 25.0	15	25	6.0	-7.0	-17.0	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	5.0
RW-209I	8	8.28	7.69	40	25.0 - 35.0	25	35	6.0	-17.0	-27.0	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	5.0
RW-210S	7.6	7.85	7.3	28	15.0 - 25.0	15	25	4.0	-7.4	-17.4	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-210I	7.6	7.93	7.32	38	25.0 - 35.0	25	35	4.0	-17.4	-27.4	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-211S	8.5	8.74	7.15	29	6.0 - 26.0	6	26	4.0	2.5	-17.5	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-211I	8.5	8.76	7.23	43	30.0 - 40.0	30	40	4.0	-21.5	-31.5	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
NRW-01S ²	14.18	15.28	14.86	19	9.0 - 19.0	9	19	4.0	5.2	-4.8	Flush-Mount	SS	SS	0.02/4.0		
NRW-02I ²	14.27			49	34.0 - 44.0	34	44	4.0	-19.7	-29.7	Stick Up	SS	SS	0.02/4.0	SS	5.0

Notes:

1 - Derived from the nearest surface elevation from final as-built survey

2 - Containment Pad Surface

NM - Not measured

ft bgs - feet below ground surface

DNAPL - Dense Non-Aqueous Phase Liquid

MGP - Manufactured Gas Plant

SS - stainless steel

RW-200**S** = Shallow recovery wells
RW-200**I** = Intermediate recovery wells

RW-205**D**

= Deep recovery wells

Table 3 DNAPL Thickness During Gauging Events National Grid Former Clifton MGP Site Staten Island, New York



Parcel	Bay Street			Wil	low Avenue				Co	ntainment C	Cell
Well ID	RW-201I	RW-205D	RW-206IA	RW-206IB	RW-207I	RW-208I	RW-209S	RW-211I	NRW-01S	NRW-02I	NRW-03D
Date	feet	feet	feet	feet	feet	feet	feet	feet	feet	feet	feet
			Data p	orior to July 2	2017 omitted	for clarity					
7/3/2017	1.80	1.20	NE	0.10	3.50	7.85	1.90	0.30	NE	NM	ABD
7/13/2017	2.30	2.80	NE	1.20	1.60	7.10	2.40	0.80	NE	0.10	ABD
7/27/2017	2.70	NM	NE	1.25	1.80	8.30	NA	1.30	NE	0.00	ABD
8/10/2017 ¹	1.50	1.00	NM	NM	NM	8.00	NM	NM	NM	NM	ABD
9/1/2017	0.00	0.00	NE	1.00	2.00	NM	NA	1.40	NE	NM	ABD
9/14/2017	6.80	0.70	NE	1.20	1.30	8.20	1.80	0.60	NE	NM	ABD
9/28/2017	1.40	2.30	NE	2.00	2.20	4.00	3.50	1.80	NE	NM	ABD
10/16/2017	2.65	1.70	NE	0.00	3.20	7.80	2.80	2.20	NE	NM	ABD
10/25/2017	NM	NM	NM	NM	NM	5.00	2.00	NM	NM	NM	ABD
11/14/2017	3.60	0.00	NM	NM	NM	7.70	NM	NM	NM	NM	ABD
11/23/2017	1.30	1.75	NM	NE	2.70	5.70	NA	NM	NM	NM	ABD
12/7/2017	2.50	0.70	NM	NM	2.80	6.50	NM	1.50	NM	NM	ABD
12/21/2017	1.30	0.80	0.80	0.00	1.80	6.70	1.20	0.40	NM	NM	ABD
				July 2017 – I	December 2	2017					
Min Thickness (ft)	0.00	0.00	NM	0.00	1.30	4.00	1.20	0.30	NM	0.00	ABD
Max Thickness (ft)	6.80	2.80	NM	2.00	3.50	8.30	3.50	2.20	NM	0.10	ABD
Avg Thickness (ft)	2.32	1.18	NM	0.84	2.29	6.90	2.23	1.14	NM	0.05	ABD
			Ja	anuary 2010 -	 Decembe 	r 2017					
Min Thickness (ft)	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Max Thickness (ft)	8.80	11.80	3.90	3.50	6.00	21.30	7.50	4.40	0.50	13.00	9.05
Avg Thickness (ft)	3.37	1.95	0.95	0.93	1.60	8.89	2.20	1.08	0.05	0.80	5.61

Notes:

¹ Field records from August 10, 2017 event incomplete; approximate values are provided.

ABD - Abandoned

ft - feet

DNAPL - Dense Nonaqueous Phase Liquid

NA - Not Accessible; vegetative overgrowth occasionally interferes with access to RW-209S.

NE - DNAPL was not observed

NM - Not Measured

Only recovery wells with measurable DNAPL thickness have been included; all recovery wells are gauged on at least an annual basis consistent with the Site Management Plan, and the last complete DNAPL recovery well network gauging event was completed on September 14, 2017.

DNAPL was gauged using a weighted steel tape and using interface probe. Thicknesses listed in this table are based on weighted steel tape measurement; a thickness of 0.00 indicates that DNAPL was observed only in the form of blebs, and thickness could not measured.

Fourth Semiannual Monitoring Report, July - December 2017 Former Clifton Manufactured Gas Plant, Staten Island, New York

Table 4 Summary of DNAPL Removal National Grid Former Clifton MGP Site Staten Island, New York



Parcel	Bay Street			Wil	low Avenue)			Со	ntainment (Cell	Event
Well ID	RW-201I	RW-205D	RW-206IA	RW-206IB	RW-207I	RW-2081	RW-209S	RW-211I	NRW-01S	NRW-02I	NRW-03D	Volume
Date	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons
			D	ata prior to J	uly 2017 or	nitted for cl	arity					
7/3/2017	NP	NP	NE	NP	10	11	NP	NP	NE	NM	ABD	21
7/13/2017	NP	9	NE	NP	5	19	NP	NP	NE	NP	ABD	33
7/27/2017	8	NM	NE	NP	NP	4	NA	NP	NE	NP	ABD	12
8/10/2017 ¹	NP	NP	NM	NM	NM	20	NM	NM	NM	NM	ABD	20
9/1/2017	NP	NP	NE	NP	7	30	NA	NP	NE	NM	ABD	37
9/14/2017	10	NP	NE	NP	NP	13	NP	NP	NE	NM	ABD	23
9/28/2017	NP	10	NE	10	22	15	0	NP	NE	NM	ABD	57
10/16/2017	49	NP	NE	NP	49	13	62	4	NE	NM	ABD	177
10/25/2017	NM	NM	NM	NM	NM	6	25	NM	NM	NM	ABD	31
11/14/2017	5	NP	NM	NM	NM	10	NM	NM	NM	NM	ABD	15
11/23/2017	NP	5	NM	NE	3	6	NA	NM	NM	NM	ABD	14
12/7/2017	6	NP	NM	NP	3	6	NM	2	NM	NM	ABD	17
12/21/2017	NP	NP	4	NP	3	6	NP	NP	NM	NM	ABD	13
			,	July 2017 – E	ecember 2	.017						
Total Gallons	79	24	4	10	102	158	87	5	0	0	0	469
Percent of Total	17%	5%	1%	2%	22%	34%	19%	1%	0%	0%	0%	100%
	January 2010-December 2017											
Total Gallons	633	382	19	104	352	1,463	150	97	0	48	39	3,271
Percent of Total	19%	12%	1%	3%	11%	45%	5%	3%	0%	1%	1%	100%

Note:

ABD - Abandoned

NA - Not Accessible

NE - DNAPL was not observed

NM - Not Measured

NP - Not pumped because the because DNAPL was not encountered or not thick enough to warrant pumping Volumes recorded consist of DNAPL and water mixture

¹ Field records from August 10, 2017 event incomplete; approximate values are provided.

^{*} AECOM Air Lift systems were installed on 4/17/2014

Table 5 December 2017 Groundwater Gauging Data National Grid Former Clifton MGP Site Staten Island, New York



DNAPL Recovery Well I.D.	Top of Riser Pipe Elevation (ft NAVD88)	Depth to Water 12/16/2017 (ft bTOC)	Depth to Well Bottom 12/16/2017 (ft bTOC)	Groundwater Elevation 12/16/2017 (ft NAVD88)	Note
RW-22	9.67	6.92	20.67	2.75	
RW-23	8.86	5.78	13.23	3.08	
RW-24	9.16	4.19	12.85	4.97	(1)
RW-25	9.74	6.38	17.47	3.36	
RW-26	9.29	6.75	17.26	2.54	
RW-200S	9.32	3.36	20.31	5.96	
RW-200I	9.33	3.06	37.75	6.27	
RW-201S	8.77	1.79	29.39	6.98	
RW-201I	8.6	1.52	38.47	7.08	
RW-202S	9.64	2.61	25.51	7.03	
RW-202I	9.48	1.01	42.12	8.47	
RW-203S	8.67	2.55	27.38	6.12	
RW-203I	8.54	1.98	36.6	6.56	
RW-204I	8.6	0.89	42.29	7.71	
RW-205D	8.18	0	77.82	8.18	(2)
RW-206S	8.26	0.47	26.98	7.79	
RW-206IA	8.15	0	45.78	8.15	(2)
RW-206IB	7.63	0	59.91	7.63	(2)
RW-207S	8.15	0	24.05	8.15	(2)
RW-207I	8.23	0	34.83	8.23	(2)
RW-208S	7.81	0	21.09	7.81	(2)
RW-208I	7.23	0	43.15	7.23	(2)
RW-209S	7.63	NM	NM	NM	(3)
RW-209I	7.69	0	39.41	7.69	(2)
RW-210S	7.3	0	25.25	7.3	(2)
RW-210I	7.32	0	37.89	7.32	(2)
RW-211S	7.15	0	28.85	7.15	(2)
RW-211I	7.23	0.12	41.14	7.11	

Notes:

- 1 Groundwater depth & elevation not consistent with nearby elevations and assumed to be a spurious measurement; ignored for purposes of developing a potentiometric surface
- 2 Groundwater elevation is assumed equal to vault rim elevation
- 3 Well cap could not be removed during synoptic well gauging event

NM - Not measured

ft bTOC - feet below top of casing

ft NAVD88 - feet North American Vertical Datum 1988

MGP - Manufactured Gas Plant

RW-200**S** = Shallow recovery wells
RW-200**I** = Intermediate recovery wells
RW-205**D** = Deep recovery wells



Table 6 **Groundwater Monitoring Analytical Data** December 2017 **National Grid Former Clifton MGP Site** Staten Island, New York

Location Sample Date	CAS#	AWQSGV	RW-22 12/20/2017	RW-23 12/20/2017	RW-25 12/20/2017	RW-26 12/21/2017	RW-200I 12/20/2017	RW-200S 12/20/2017	RW-202I 12/20/2017	RW-202S 12/20/2017
SDG			4601473891	4601473891	4601473891	4601475101	4601473891	4601473891	4601473891	4601473891
BTEX (ug/l)	71-43-2	1	< 1.0 U	220	< 1.0 U	< 1.0 U				
Benzene Ethylbenzene	100-41-4	5	< 1.0 U	410	< 1.0 U	0.48 J				
Toluene	108-88-3	5	< 1.0 U	290	< 1.0 U	0.46 J 0.27 J				
Xylenes (total)	1330-20-7	5	< 2.0 U	< 1.0 U	< 2.0 U	< 2.0 U	0.43 J	550	< 2.0 U	3.0
Total BTE		J	ND	ND	ND	\ 2.0 U	0.43	1470	\ \ 2.0 U	3.75
PAHs (ug/l)	^		ND	ND	ND	ND	0.43	1410	ND	3.73
	04.57.0	NII.	44011	40.11	14011	40.11	14011	420.1	14011	40.11
2-Methylnaphthalene	91-57-6	NL 20	< 10 U	130 J	< 10 U	< 10 U				
Acenaphthene	83-32-9	20	< 10 U	< 200 U	< 10 U	< 10 U				
Acenaphthylene	208-96-8	NL	< 10 U	61 J	< 10 U	< 10 U				
Anthracene	120-12-7	50	< 10 U	< 200 U	< 10 U	< 10 U				
Benzo(a)anthracene	56-55-3	0.002	< 0.051 U	0.16	< 0.050 U	< 0.052 U	< 0.051 U	< 0.25 U	< 0.051 U	< 0.051 U
Benzo(a)pyrene	50-32-8	NL	< 0.051 U	< 0.051 U	< 0.050 U	< 0.052 U	< 0.051 U	< 0.25 U	< 0.051 U	< 0.051 U
Benzo(b)fluoranthene	205-99-2	0.002	< 0.051 U	0.031 J	< 0.050 U	< 0.052 U	< 0.051 U	< 0.25 U	< 0.051 U	< 0.051 U
Benzo(ghi)perylene	191-24-2	NL	< 10 U	< 200 U	< 10 U	< 10 U				
Benzo(k)fluoranthene	207-08-9	0.002	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U				
Chrysene	218-01-9	0.002	< 2.0 U	< 2.0 U	< 2.0 U	< 2.1 U	< 2.0 U	< 40 U	< 2.0 U	< 2.0 U
Dibenz(a,h)anthracene	53-70-3	NL	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U				
Fluoranthene	206-44-0	50	< 10 U	3.6 J	< 10 U	< 10 U	< 10 U	< 200 U	< 10 U	< 10 U
Fluorene	86-73-7	50	< 10 U	< 200 U	< 10 U	< 10 U				
Hexachlorobenzene	118-74-1	0.4	< 0.020 U	< 0.020 U	< 0.020 U	< 0.021 U	< 0.020 U	< 0.10 U	< 0.020 U	< 0.020 U
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	< 0.051 U	< 0.051 U	< 0.050 U	< 0.052 U	< 0.051 U	< 0.25 U	< 0.051 U	< 0.051 U
Naphthalene	91-20-3	10	< 10 U	0.82 J	< 10 U	< 10 U	0.98 J	3800	< 10 U	< 10 U
Phenanthrene	85-01-8	50	< 10 U	< 200 U	< 10 U	< 10 U				
Pyrene	129-00-0	50	< 10 U	2.8 J	< 10 U	< 10 U	< 10 U	< 200 U	< 10 U	< 10 U
Total PAH	S		ND	7.41	ND	ND	0.98	3861	ND	ND
Total Metals (ug/l)										
Iron	7439-89-6	300	4090	2230	919	21100	< 120 U	< 120 U	< 120 U	< 120 U
Manganese	7439-96-5	300	76.7	3650	459	4180	3.0 J	55.3	< 8.0 U	< 8.0 U
Dissolved Metals (ug/l)										
Iron	7439-89-6	300	3880	2060	142	20600	< 120 U	< 120 U	< 120 U	< 120 U
Manganese	7439-96-5	300	66.3	3700	106	4010	< 8.0 U	51.2	< 8.0 U	< 8.0 U
MNA (mg/l)										
Ammonia Nitrogen	7664-41-7	NL	NS	NS	NS	4.8	NS	NS	NS	NS
Carbon Dioxide, Free	CO2 FREE	NL	41.3	56.6	16.7	45.3	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Chemical Oxygen Demand (COD)	COD	NL	NS	26.5	6.2 J	15.9	5.0 J	12.0	12.0	17.5
Ferrous Iron	C-FE+2	NL	< 0.10 U	< 0.10 U	< 0.10 U	0.13	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U
Methane	74-82-8	NL	0.21	2.8	< 0.0050 U	2.4	< 0.0050 U	0.026	0.0033 J	1.6
Nitrate as N	14797-55-8	NL	< 0.10 U	< 0.10 U	1.73	< 0.10	0.16	0.067 J	0.068 J	0.066 J
Nitrate Nitrite as N	NO3NO2N	NL	< 0.10 U	< 0.10 U	1.73	NS	0.16	0.067 J	0.30	0.066 J
Nitrite as N	14797-65-0	NL	NS	NS	NS	0.032	NS	NS	NS	NS
Nitrogen	7727-37-9	NL	0.47	1.8	1.7	3.7	0.16	0.34	1.1	7.4
Sulfate	14808-79-8	NL	1210	67.3	115	20.6	36.3	25.2	80.6	55.5
Total Kjeldahl Nitrogen	KN	NL	0.45	1.8	< 0.25 U	3.7	< 0.25 U	0.27	0.76	7.3
Total Sulfide	18496-25-8	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U				
Turbidity	TURBIDITY	NL	NS	NS	NS	NS	NS	NS	NS	NS
Alkalinity (mg/l)										
Alkalinity, Total (As CaCO3)	ALK	NL	188	438	247	306	51.3	129	69.9	247
Bicarbonate Alkalinity as CaCO3	ALKB	NL	188	438	247	306	51.3	129	< 5.0 U	198
Carbonate Alkalinity as CaCO3	ALKC	NL	< 5.0 U	< 5.0 U	31.8	49.6				
Hydroxide Alkalinity	ALKH	NL	< 5.0 U	< 5.0 U	38.1	< 5.0 U				

Notes:

AWQSGV - NYSDEC Ambient Water Quality Standards and Guidance Values
CAS # - Chemical Abstracts Service Registry Number
DUP - Field duplicate
ND = Not detected
NL = Not listed
ug/L = micrograms per liter; mg/L = milligrams per liter (ppm)
Qualifiers:
Bold indicates compound was detected

| Carave Highlighted values exceed NYSDEC Groundwater Guidance Value

Gray Highlighted values exceed NYSDEC Groundwater Guidance Value

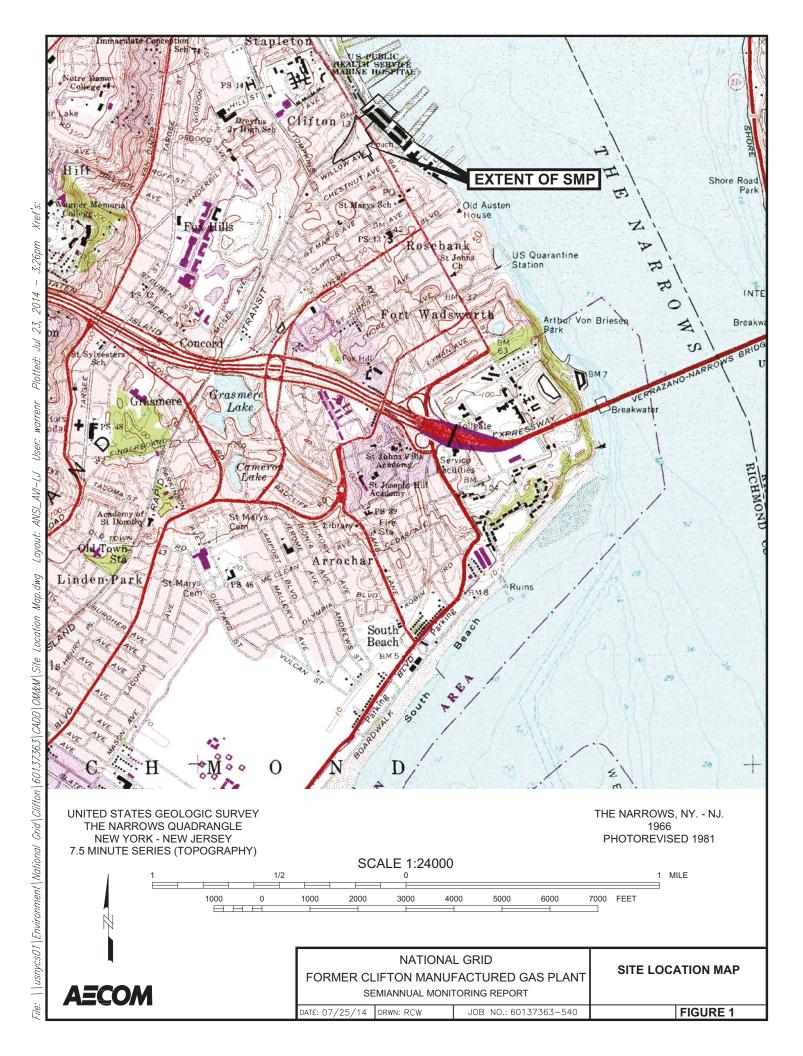
U - The material was analyzed for, but not detected above the level of the reported sample quantitation limit.

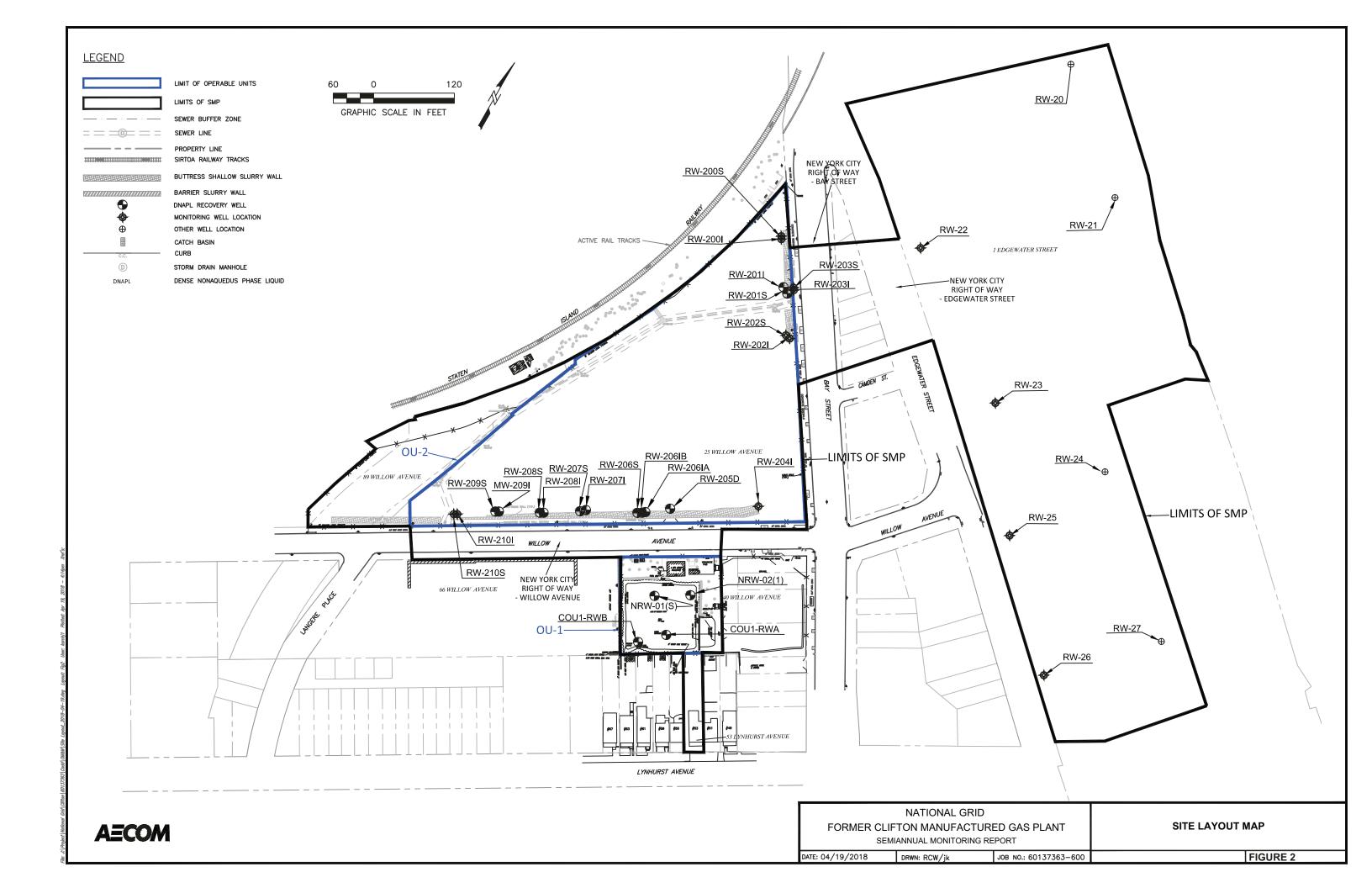
Table 6
Groundwater Monitoring Analytical Data
December 2017
National Grid Former Clifton MGP Site
Staten Island, New York

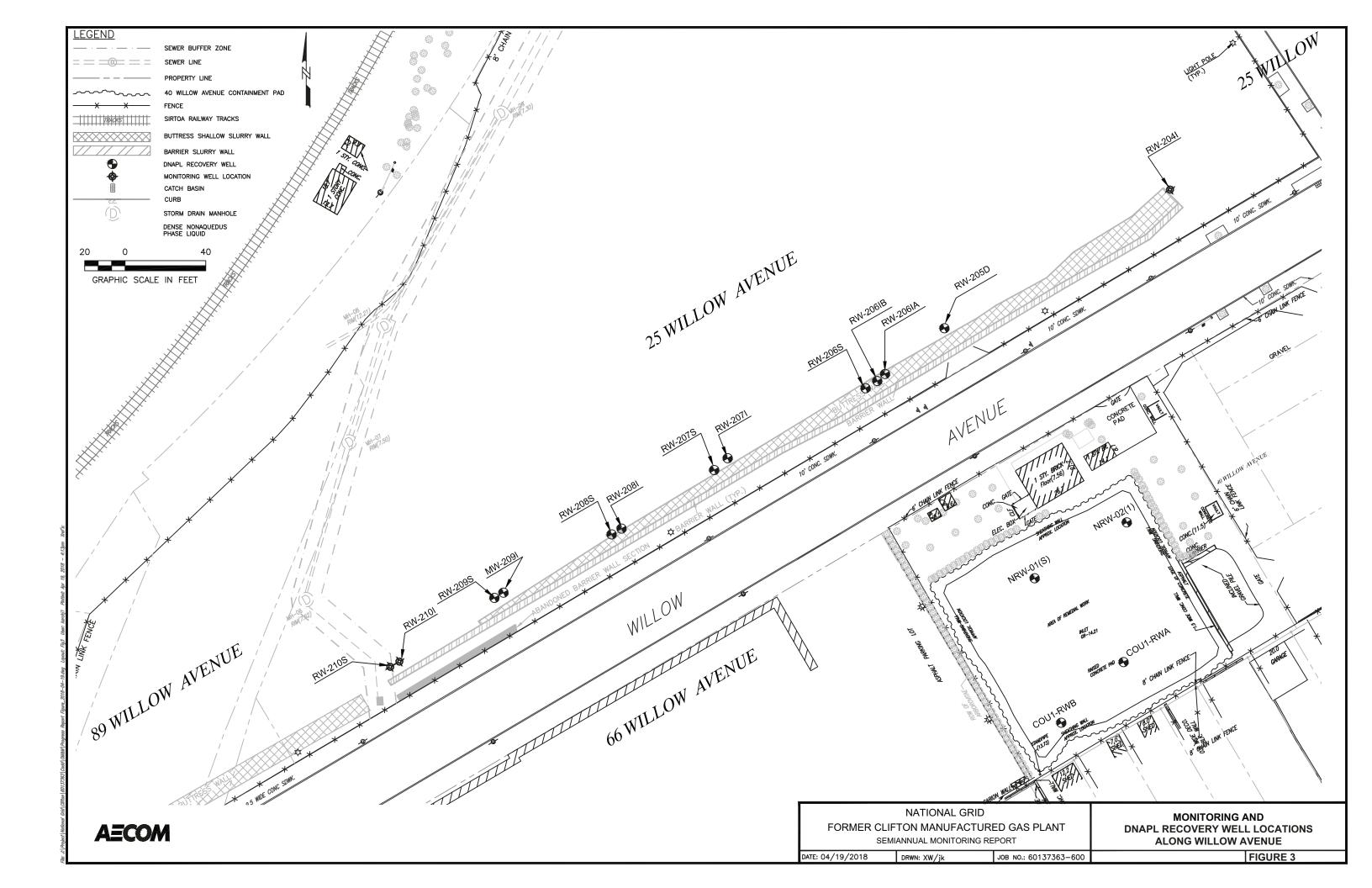


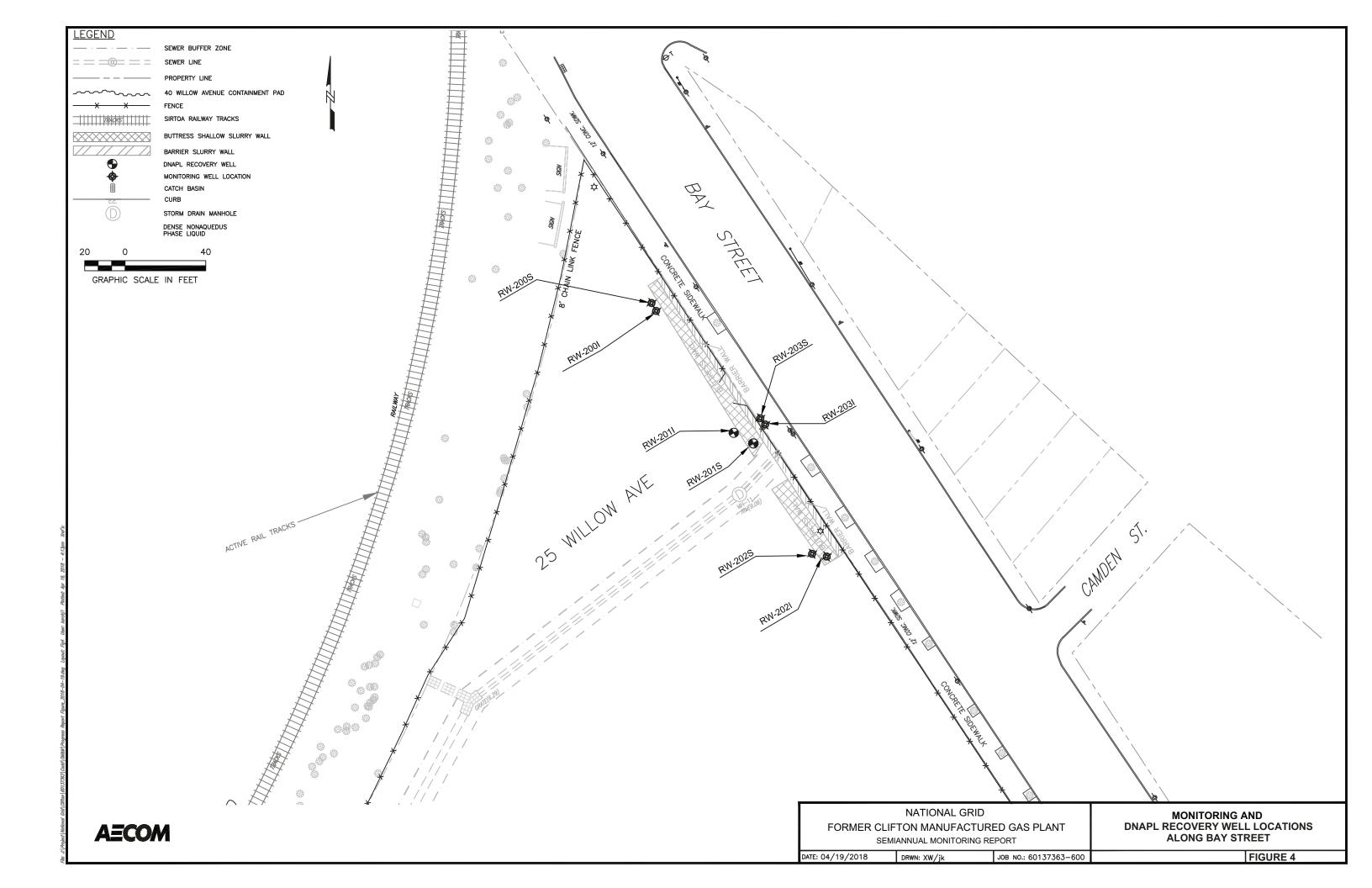
RW-203I	RW-203S	RW-203S Dup	RW-204	RW-210I
12/21/2017	12/21/2017	12/21/2017	12/21/2017	12/21/2017
4601475101	4601475101	4601475101	4601475101	4601475101
69	91	90	0.22	930
1100	940	920	< 1.0 U	220
310	34	33	< 1.0 U	3.4
1100	390	380	< 2.0 U	150
2579	1455	1423	0.22	1303.4
410	160	190	< 10 U	260 J
79	120	130	< 10 U	77
74	< 200	< 210	< 10 U	3.6
< 200	< 200	< 210	< 10 U	< 21
< 0.25	< 0.050	< 0.052	< 0.052 U	0.04
< 0.25	< 0.050	< 0.052	< 0.052 U	< 0.053
< 0.25	< 0.050	< 0.052	< 0.052 U	0.023
< 200	< 200	< 210	< 10 U	< 21
< 20 U	< 20 U	< 21 U	< 1.0 U	< 2.1 U
< 40	< 40	< 42	< 2.1 U	< 4.3
< 20 U	< 20 U	< 21 U	< 1.0 U	< 2.1 U
< 200	< 200	< 210	< 10 U	< 21
38	33	34	< 10 U	21
< 0.10	< 0.020	< 0.021	< 0.021 U	< 0.021
< 0.25	< 0.050	< 0.052	< 0.052 U	< 0.053
2900	2600	3100	< 10 U	87
29 < 200	26 < 200	28 < 210	< 10 U < 10 U	9.2 < 21
3120		3292		197.86
3120	2779	3292	ND	197.00
229	1540	1310	< 120	1450
6.9	338	321	48.5	356
164	1340	1110	< 120	1430
6.4	322	322	47.7	368
0.77	1.4	1.4	0.24	2.6
< 5.0	7.5	5.5	< 5.0	7.5
23.3	15.6	12.4	< 10.0	11.7
< 0.10	< 0.10	NS	< 0.10	< 0.10
0.054	0.29	0.27	0.047	3.0
0.052	0.047	< 0.10	0.070	0.055
NS 0.028	NS 0.023	NS 0.0051	NS 0.14	NS 0.029
2.6	1.5	1.6	0.14	2.6
14.6	< 5.0 U	< 5.0 U	87.8	< 5.0 U
0.84	1.4	1.3	0.40	2.4
< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
NS NS	NS	0.38	NS	NS NS
99.4	193	193	117	226
79.3	193	193	117	226
20.1	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U

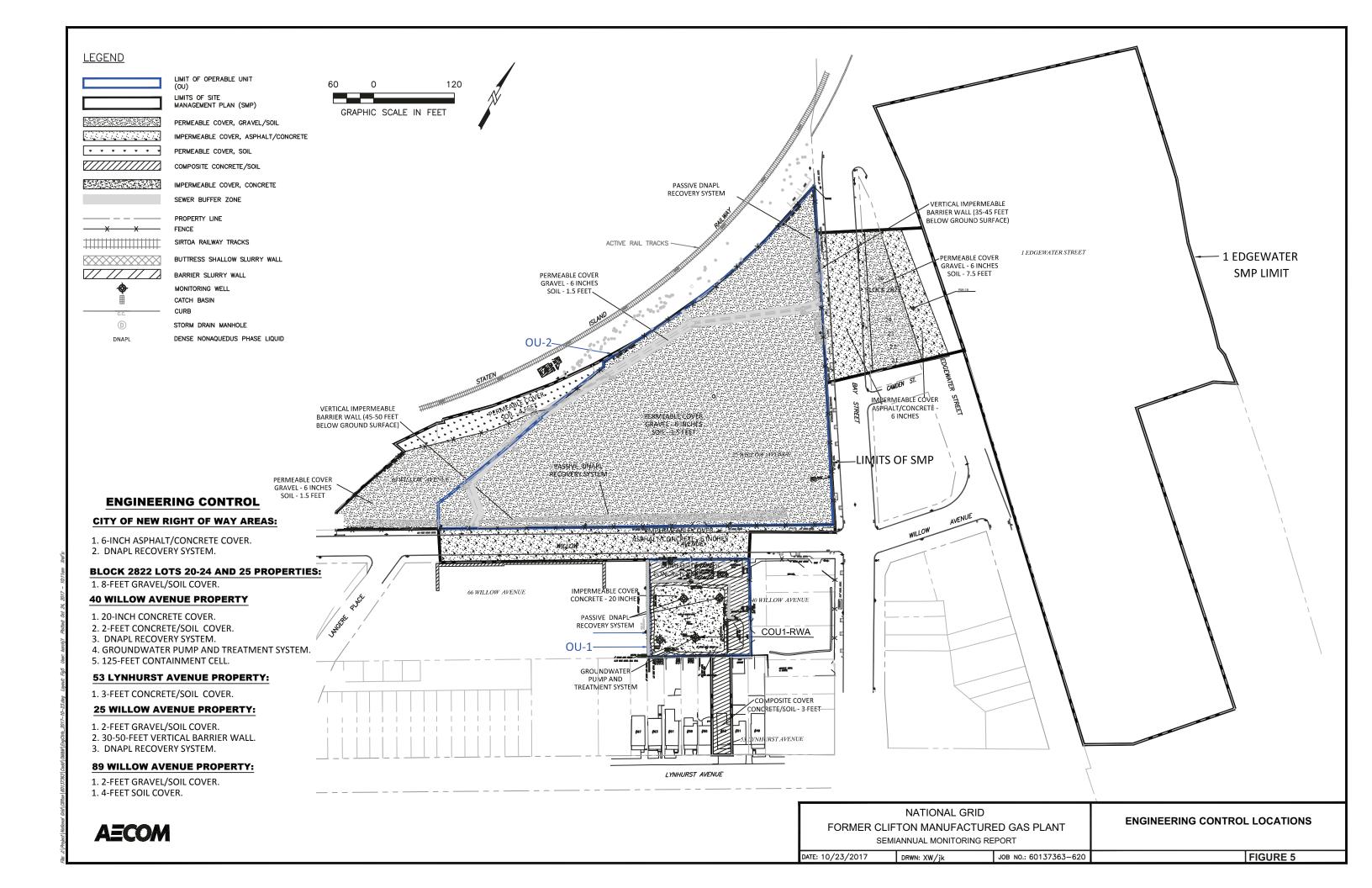
Figures

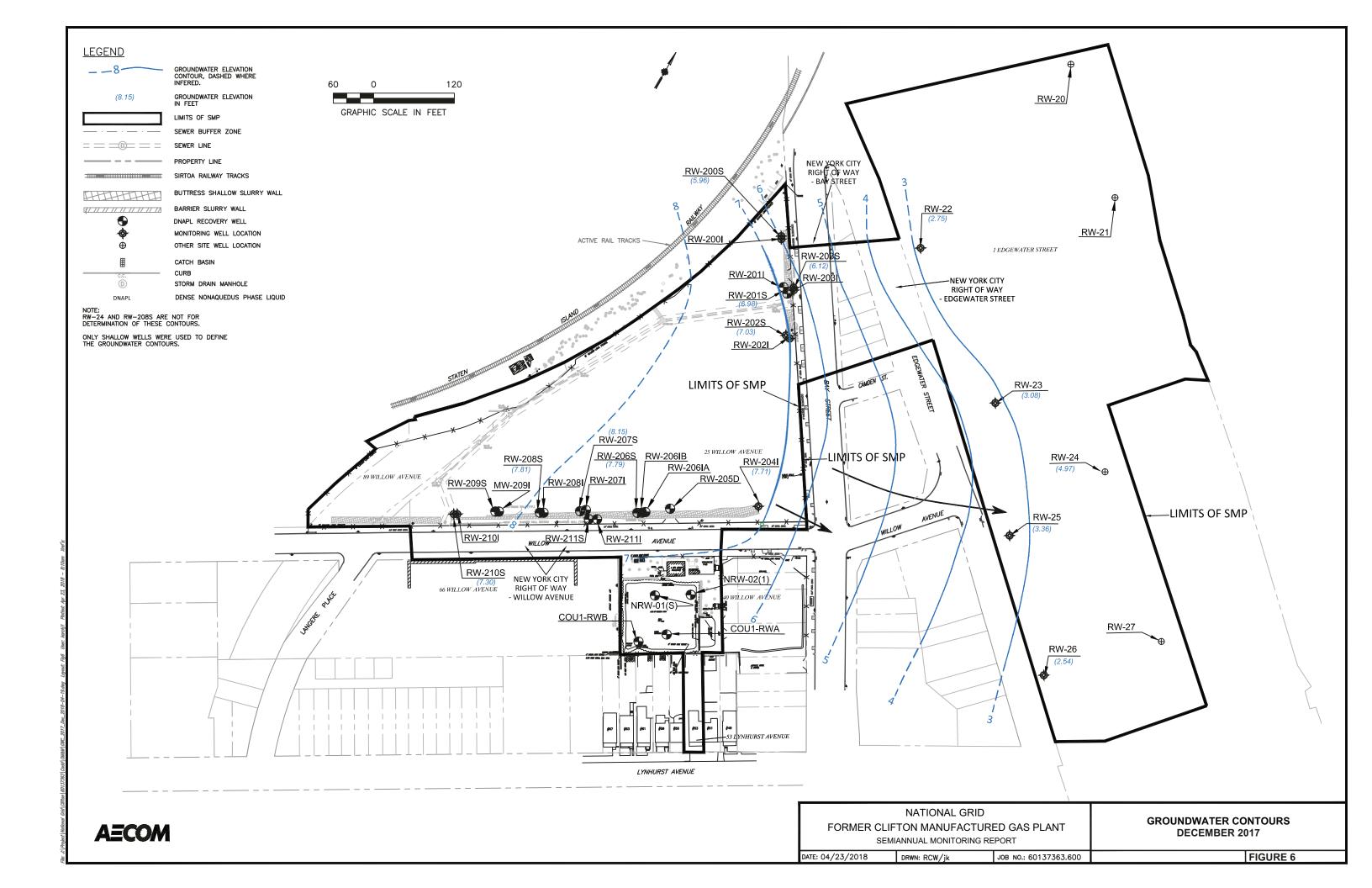


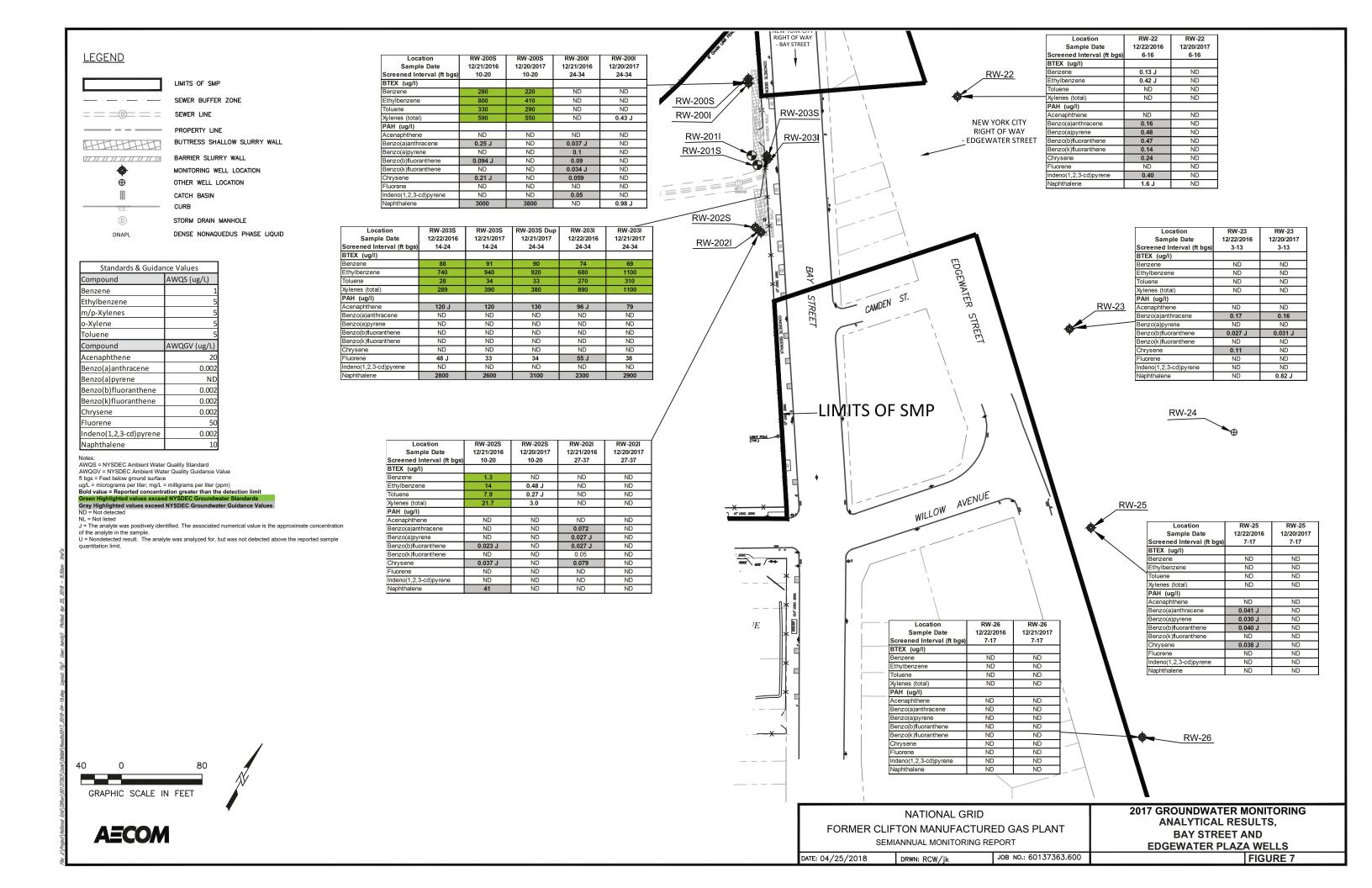














LIMITS OF SMP

SEWER BUFFER ZONE

SEWER LINE

BUTTRESS SHALLOW SLURRY WALL BARRIER SLURRY WALL

DNAPL RECOVERY WELL MONITORING WELL LOCATION

CATCH BASIN

STORM DRAIN MANHOLE

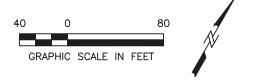
DENSE NONAQUEDUS PHASE LIQUID DNAPL

Standards & Guidar	nce Values
Compound	AWQS (ug/L)
Benzene	1
Ethylbenzene	9
m/p-Xylenes	9
o-Xylene	9
Toluene	9
Compound	AWQGV (ug/L)
Acenaphthene	20
Benzo(a)anthracene	0.002
Benzo(a)pyrene	NE
Benzo(b)fluoranthene	0.002
Benzo(k)fluoranthene	0.002
Chrysene	0.002
Fluorene	50
Indeno(1,2,3-cd)pyrene	0.002
Naphthalene	10

AWQS = NYSDEC Ambient Water Quality Standard AWQGV = NYSDEC Ambient Water Quality Guidance Value ft bgs = Feet below ground surface

It Ugs – Feet carry ground states ug/L = micrograms per liter;
mg/L = milligrams per liter (ppm)
Bold value = Reported concentration greater than the detection limit
Green Highlighted values exceed NYSDEC Groundwater Standards

J = The analyte was positively identified. The associated numerical value is the approximate concentration U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.



Location	RW-210I	RW-210I (Dup)	RW-210I
Sample Date	12/21/2016	12/21/2016	12/21/2017
Screened Interval (ft bgs)	25-35	0	25-35
BTEX (ug/l)			
Benzene	1100	1100	930
Ethylbenzene	470	470	220
Toluene	6.1	5.9	3.4
Xylenes (total)	134	134	150
PAH (ug/l)			
Acenaphthene	63	65	77
Benzo(a)anthracene	0.065	0.068	0.04
Benzo(a)pyrene	0.030 J	0.032 J	ND
Benzo(b)fluoranthene	0.038 J	0.037 J	0.023
Benzo(k)fluoranthene	ND	ND	ND
Chrysene	0.063	0.071	ND
Fluorene	21	21	21
Indeno(1,2,3-cd)pyrene	ND	ND	ND
Naphthalene	ND	ND	87

OW AVENUE

RW-210I

RW-204I RW-204I Location 12/21/2016 12/21/2017 Sample Date 30-40 Screened Interval (ft bg 30-40 BTEX (ug/l) 0.26 J Ethylbenzene 0.48 J ND 0.87 J ND Toluene 1.54 J ND Xylenes (total) PAH (ug/l) Acenaphthene 2.9 J Benzo(a)anthracene 0.13 ND Benzo(a)pyrene
Benzo(b)fluoranthene 0.06 ND ND 0.07 Benzo(k)fluoranthene 0.020 J ND Chrysene 0.1 ND Fluorene 2.1 J ND 0.03 J ND Indeno(1,2,3-cd)pyrene ND ND Naphthalene 25 WILLOW AVENUE

RW-2011

RW-204

AVENUE WILLOW NEW YORK CITY RIGHT OF WAY 66 WILLOW AVENUE - WILLOW AVENUE 40 WILLOW AVENUE

ACTIVE RAIL TRACKS

AECOM

NATIONAL GRID FORMER CLIFTON MANUFACTURED GAS PLANT SEMIANNUAL MONITORING REPORT

2017 GROUNDWATER MONITORING ANALYTICAL RESULTS WILLOW AVENUE WELLS

DATE: 04/25/2018

DRWN: RCW/jk

JOB NO.: 60137363.600

FIGURE 8

Appendix A

Data Usability Summary and Analytical Reports (on CD Only)



To: Robert Forstner AECOM 125 Broad Street, 16th FI New York, New York 10004

CC: Shail Pandya AECOM 125 Broad Street, 16th FI New York, New York 10004 AECOM 707 Grant Street Pittsburgh, PA 15219 aecom.com

Project name:Clifton MGP Groundwater

Project ref: 60137363-600

From: Gregory A. Malzone

Date:

May 7, 2018 revised

Data Assessment Memorandum

Subject: Clifton Former MGP December 2017 Groundwater Data Assessment

Overview

Data validation was performed by Gregory A. Malzone of AECOM Pittsburgh on two data packages from TestAmerica Laboratories, Inc., 777 New Durham Road, Edison, NJ 08817 (TAL-Edison) for the analysis of groundwater samples collected on December 20-21, 2017 at the Clifton, NY former manufactured gas plant (MGP) site. TAL-Edison conducted the testing and reported the results under sample delivery groups (SDGs) 460-147389-1 and 460-147510-1.

The following analytical methods were requested on the chain-of-custody (CoC) records.

- USEPA Method 8260C Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by GC/MS
- USEPA Method 8270D 2-Methylnaphthalene, Acenaphthene, Acenapthylene, Anthracene, Benzo(g,h,i)perylene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Fluorene, Naphthalene, Phenanthrene and Pyrene by GC/MS Full Scan
- USEPA Method 8270D SIM Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Hexachlorobenzene and Indeno(1,2,3-cd)pyrene by GC/MS in Selected Ion Monitoring (SIM) Mode (low-level)
- RSK 175 Methane by GC
- USEPA Method 300.0 Anions (Nitrite and Nitrate) by Ion Chromatography (IC)
- USEPA Method 6020A Total and Dissolved Iron and Manganese by ICP/MS
- Method SM 2320B Total, Bicarbonate, Carbonate and Hydroxide Alkalinity
- Method SM 4500 CO2 D Free Carbon Dioxide
- ASTM Method D516-90,02 Sulfate
- Method SM 4500 S2 F Sulfide
- Method SM 5220D Chemical Oxygen Demand (COD)*

- Method SM 3500 FE D Ferrous Iron
- USEPA Method 351.2 Kjeldahl Nitrogen (TKN) and Total Nitrogen (by Calculation)
- Method SM4500 NH3 H Ammonia

The data were evaluated for conformance to method specifications and qualifiers were applied using the USEPA Region II SOPs and the validation criteria set forth in the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Superfund Methods Data Review*, EPA-540-R-2017-002, January 2017 and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review*, EPA-540-R-2017-001, January 2017, as they apply to the analytical methods employed.

Field duplicate relative percent difference (RPD) review and applicable control limits were taken from the *USEPA Region I, New England Data Validation Functional Guidelines for Evaluating Environmental Analyses*, December 1996.

Review Elements

The following elements of the data reports were reviewed.

- Agreement of analyses conducted with CoC requests
- Compound identification and quantitation
- Holding times/sample preservation
- Initial and continuing calibrations
- Method preparation blanks
- · Laboratory control sample (LCS) results
- Matrix spike/matrix spike duplicate and serial dilution results
- Surrogate recoveries
- Internal standards
- Field duplicate precision

Samples

Table 1 below lists the sample field identifications cross-referenced to the laboratory identifications.

Table 1 – Clifton MGP Groundwater Sample Submittals

Sample ID	Lab Sample ID	Quality Control	Matrix	Sample Date
RW-22	460-147389-1		Groundwater	12/20/2017 11:30
RW-23	460-147389-2		Groundwater	12/20/2017 12:25
RW-25	460-147389-3		Groundwater	12/20/2017 14:35
RW-200S	460-147389-4		Groundwater	12/20/2017 11:20
RW-200I	460-147389-5		Groundwater	12/20/2017 11:45
RW-202S	460-147389-6		Groundwater	12/20/2017 14:00
RW-202I	460-147389-7		Groundwater	12/20/2017 13:50
RW-26	460-147510-1		Groundwater	12/21/2017 08:15
RW-204	460-147510-2		Groundwater	12/21/2017 09:30
RW-203I	460-147510-3		Groundwater	12/21/2017 10:00
RW-203S	460-147510-4		Groundwater	12/21/2017 11:45
RW-210I	460-147510-5	MS/MSD	Groundwater	12/21/2017 14:10
Dup-01	460-147510-6	RW-203S	Groundwater (QC)	12/21/2017 12:00

^{*}Sample RW-22 was subcontracted to ALS Group USA, Rochester, NY for COD (high-level) analysis by USEPA 410.4.

Data Qualifiers

The following USEPA-defined data qualifiers were assigned in this data assessment.

- U: Indicates the compound was not detected in the sample above the sample reporting limit.
- J: Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample with an unknown directional bias.
- UJ: Indicates the compound was not detected above the reporting limit and the reporting limit was approximate.
- J-: Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample with a potential low bias.
- R: The data are unusable. The sample results are rejected due to serious deficiencies in the ability to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Discussion

Agreement of Analyses Conducted with CoC Requests

Sample reports were checked to verify that the results corresponded to analytical requests as designated on the CoC. No discrepancies were noted.

<u>Data Validation Report Revision 1.0:</u> At the request of the AECOM project manager, The data reports for SDGs 460-147389-1 and 460-147510-1 were revised to: 1) include benzo(k)fluoranthene in the SIM target compound list in order to achieve lower detection limits, and 2) include 2-methylnaphthalene and dibenz(a,h)anthracene in the full scan target compound list. The data for the added compounds were reviewed and the findings were included in this revised data validation report.

Compound Identification and Quantitation

All BTEX and semivolatile compound results were reported to the method detection limits (MDLs) in μ g/L (ppb). All methane and general chemistry results were reported to the MDLs in mg/L (ppm).

Holding Times and Sample Preservation

The sample shipments was received on ice, intact, with the proper chemical preservation, and in good condition. The cooler temperatures were 0.1 to 3.3 degrees Celsius (°C) which were within the optimal range of just above freezing to 6° C upon receipt.

All samples were analyzed within the USEPA-recommended preparation and analysis holding times for aqueous samples with the following exceptions.

<u>Ferrous Iron:</u> The analyses for ferrous iron samples DUP-01, RW-22, RW-23, RW-25, RW-26, RW-200S, RW-200I, RW-202S, RW-203I, RW-203S, RW-204 and RW-210I were performed several hours to one day beyond the USEPA 24-hour holding time. The positive and non-detect ferrous iron results were qualified "J/UJ," as estimates, because the holding time was exceeded.

The analysis for ferrous iron sample RW-202I was performed two days beyond the USEPA-24 hour holding time. The non-detect ferrous iron result for sample R-202I was qualified "R," as rejected, because the holding time was grossly exceeded.

<u>Free Carbon Dioxide:</u> The analyses for free carbon dioxide samples DUP-01, RW-22, RW-23, RW-25, RW-26, RW-200S, RW-200I, R-202I, RW-202S, RW-203I, RW-203S, RW-204 and RW-210I were performed five days beyond the USEPA 24-

hour holding time. The free carbon dioxide results for samples RW-200S, RW-200I, RW-202S, RW-202I, RW-203I and RW-204 were non-detect and were qualified "R," as rejected, because the holding time was grossly exceeded. The free carbon dioxide results for samples DUP-01, RW-22, RW-23, RW-25, RW-26, RW-203S and RW-210I were positive and were qualified "J," as estimated concentrations, because the holding time was grossly exceeded.

Initial and Continuing Calibrations

The initial and continuing calibrations were within the method specification limits with the following exceptions.

<u>Full Scan Semivolatiles:</u> The continuing calibration verification percent difference (%D) for dibenz(a,h)anthracene was greater than the method specification limit of 20%, on December 26, 2017 at 10:48 on instrument CBNAMS16. The dibenz(a,h)anthracene result for associated sample RW-200S was non-detect and did not require qualification in response to the high instrument bias.

SIM Semivolatiles: The initial calibration average RRF for benzo(a)anthracene was less than the minimum method specification limit on December 28, 2017 on instrument CBNAMS13. The continuing calibration RRF on December 26, 2017 at 11:14 on instrument CBNAMS13 was also was less than the minimum method specification limit for benzo(a)anthracene. The benzo(a)anthracene result for associated sample RW-203I was non-detect and was qualified "R," as rejected, because of poor method sensitivity.

The SIM continuing calibration percent difference for benzo(b)fluoranthene was greater than the upper method specification limit of 20% on December 26, 2017 at 11:14 on instrument CBNAMS13. The benzo(b)fluoranthene result for associated sample RW-203I was non-detect and did not require qualification in response to the high instrument bias.

Laboratory Method Blanks

No target compounds were detected at concentrations exceeding the MDLs in the laboratory method blanks with the following exception.

Nitrite: Nitrite was detected in the method blank MB 460-487454/10 at a concentration of 0.0538 J mg/L. Nitrite was also detected in the continuing calibration blanks, but the highest concentration was in the method blank. Samples RW-203I, RW-203S, RW-204, RW-210I and RW-26 were affected. The nitrite results for associated samples, RW-203I, RW-203S, RW-204 and RW-210I were less than ten times the blank level and less than the RL and were qualified "U"as undetected at the RL, because of laboratory contamination. The nitrite result for associated sample RW-26 was greater than ten times the blank level and did not require qualification.

Laboratory Control Samples (LCS)

Laboratory control sample recoveries were within the quality control limits with the following exception.

<u>SIM Semivolatiles:</u> The LCSD 460-486727/5-A recovery for hexachlorobenzene was greater than the upper quality control limit. The hexachlorobenzene results for associated samples DUP-01, RW-203I, RW-203S, RW-204, RW-210I and RW-26 were non-detect. No data qualification was required in response to the high method bias.

Matrix Spike/Matrix Spike Duplicates (MS/MSD), RPDs and ICP Serial Dilutions

Matrix spike and matrix spike duplicates and ICP serial dilution analyses that were performed on non-project samples were not evaluated because matrix similarity to project samples could not be assumed.

<u>Full Scan Semivolatiles:</u> The RW-210I MS recovery for acenaphthene was greater than the upper advisory limit. The acenaphthene result for sample RW-210I was positive and was qualified "J," as an estimated concentration, because of high bias and/or sample heterogeneity.

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The RW-210I MS and MSD recoveries for naphthalene were outside the advisory limits. The RPD between the RW-210I MS and MSD recoveries for naphthalene was greater than the maximum advisory limit. The naphthalene result for sample RW-210I was positive and was qualified "J," as an estimated concentration, because of sample heterogeneity.

The RW-210I MS recovery for 2-methylnaphthalene was less than the lower advisory limit, but greater than 20%. The RW-210I MSD recovery for 2-methylnaphthalene was greater than the upper advisory limit. The 2-methylnaphthalene result for sample RW-210I was positive and was qualified "J," as an estimated concentration, because of sample heterogeneity.

The RW-210I MS and MSD recoveries for dibenz(a,h)anthracene were greater than the upper advisory limit. The dibenz(a,h)anthracene result for sample RW-210I was non-detect and did not require qualification in response to the high bias attributable to matrix effects and/or sample heterogeneity.

<u>COD</u>: The RW-210I MS and MSD recoveries for COD were less than the lower advisory limits, but greater than 30%. All samples except RW-22 were affected. The positive and non-detect COD results were qualified "J/J-/UJ," as estimates, because of low method bias and/or matrix effects.

<u>TKN</u>: The RW-210I MS recovery for TKN was less than the lower advisory limit, but greater than 30% and the RW-203I MSD recovery for TKN was greater than the upper quality control limit. All samples were affected. The positive and non-detect TKN results were qualified "J/UJ," as estimates, because of method imprecision and/or matrix effects. The direction of bias could not be determined.

Surrogate Recoveries

All surrogate recoveries were within the quality control limits with the following exceptions.

<u>Full Scan Semivolatiles:</u> Samples RW-203I, RW-203S and DUP-01 required analysis at an initial 20-fold dilution to bring the target compound concentration(s) into the calibration range. There were sufficient, acceptable quality control data to show that the analytical process was in control. No data qualifications were required.

Internal Standards

The GC/MS and ICP/MS internal standards were within the method specification limits.

Field Duplicate Precision

A field duplicate sample was collected for sample RW-203S. See Table 2 below for the calculated RPDs for each parameter for which there was positive results.

Field duplicate results were evaluated using the following criteria.

Organics: The RPD must be $\leq 30\%$ for results greater than or equal to two times the reporting limit. If one of the results

is non-detect or less than two times the reporting limit, and the duplicate is greater than two times the reporting limit, the difference between the parent and field duplicate results must be less than or equal to two

times the reporting limit.

Action applies only to the affected analyte in the organic duplicate sample pair.

Inorganics: The RPD must be ≤ 30% for results greater than or equal to five times the reporting limit. For results less

than five times the reporting limit, the difference between the parent and field duplicate results must be less

than or equal to two times the reporting limit.

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Action applies to the affected analyte in all inorganic samples of the same matrix prepared and analyzed by the same method.

The results associated with a nonconforming RPD or absolute difference were qualified "J/UJ," as estimates because of field sampling/laboratory imprecision and/or sample heterogeneity. See Table 2 below.

The following notations are used in the field precision table.

RPD: Relative percent difference

NC: RPD could not be calculated

≤2RL: The absolute difference between the parent and field duplicate results was less than or equal to two times the reporting limit. Variation of this magnitude is acceptable.

μg/L: micrograms per liter (ppb) and mg/L: milligrams per liter (ppm)

Summary

Six non-detect free carbon dioxide results and one non-detect ferrous iron result were rejected because the holding time was grossly exceeded. One non-detect semivolatile result was rejected because of poor method sensitivity. All other data have been determined to be useable for the purpose of assessing the presence/absence and quantitative concentrations of the compounds in the media tested (i.e., groundwater) with some qualification. See Table 3 below for a list of the qualified analytical data.

Table 2 – Clifton MGP Groundwater Field Duplicate Precision

Parameter	Units	RW-203S	DUP-01	RPD (%)	Qual
Benzene	μg/L	91	90	1.1	None
Toluene	μg/L	34	33	2.9	None
Ethylbenzene	μg/L	940	920	2.1	None
m/p-Xylene	μg/L	130	130	0	None
o-Xylene	μg/L	260	250	3.9	None
Xylenes, total	μg/L	390	380	2.6	None
2-Methylnaphthalene	μg/L	160 J	190 J	17	None
Acenaphthene	μg/L	120 J	130 J	8.0	None
Fluorene	μg/L	33 J	34 J	2.9	None
Naphthalene	μg/L	2600	3100	17	None
Phenanthrene	μg/L	26 J	28 J	7.4	None
Methane	mg/L	0.29	0.27	7.1	None
Iron, Total	μg/L	1540	1310	16	None
Manganese, Total	μg/L	338	321	5.2	None
Iron, Dissolved	μg/L	1340	1110	19	None
Manganese, Dissolved	μg/L	322	322	0	None
Kjeldahl Nitrogen	mg/L	1.4	1.3	7.4	None
Ammonia	mg/L	1.4	1.4	0	None
Nitrite	mg/L	0.023 J	0.0051 J	127	≤2RL, None
Nitrogen, Total	mg/L	1.5	1.6	6.5	None
Alkalinity, Total	mg/L	193	193	0	None
Alkalinity, Bicarbonate	mg/L	193	193	0	None
Ferrous Iron	mg/L	0.056 U	0.38	NC	J/UJ
Carbon dioxide, free	mg/L	7.5	5.5	31	≤2RL, None
COD	mg/L	15.6	12.4	23	None

Table 3 – Clifton MGP Groundwater Qualified Analytical Data

Field ID	Lab ID	Parameter	Result	Lab Qualifier ¹	Validation Qualifier ¹	Units ³	Reason Code(s) ²
RW-22	460-147389-1	Total Kjeldahl Nitrogen	0.45		J	mg/L	MS
RW-22	460-147389-1	Ferrous Iron	0.10	U	UJ	mg/L	HT, FD
RW-22	460-147389-1	Carbon Dioxide, Free	41.3		J	mg/L	HT
RW-23	460-147389-2	Total Kjeldahl Nitrogen	1.8		J	mg/L	MS
RW-23	460-147389-2	Ferrous Iron	0.10	U	UJ	mg/L	HT, FD
RW-23	460-147389-2	Carbon Dioxide, Free	56.6		J	mg/L	HT
RW-23	460-147389-2	Chemical Oxygen Demand	26.5		J-	mg/L	MS
RW-25	460-147389-3	Total Kjeldahl Nitrogen	0.25	U	UJ	mg/L	MS
RW-25	460-147389-3	Ferrous Iron	0.10	U	UJ	mg/L	HT, FD
RW-25	460-147389-3	Carbon Dioxide, Free	16.7		J	mg/L	HT
RW-25	460-147389-3	Chemical Oxygen Demand	6.2	J	J	mg/L	MS
RW-200S	460-147389-4	Total Kjeldahl Nitrogen	0.27		J	mg/L	MS
RW-200S	460-147389-4	Ferrous Iron	0.10	U	UJ	mg/L	HT, FD
RW-200S	460-147389-4	Carbon Dioxide, Free	5.0	U	R	mg/L	HT
RW-200S	460-147389-4	Chemical Oxygen Demand	12.0		J-	mg/L	MS
RW-200I	460-147389-5	Total Kjeldahl Nitrogen	0.25	U	UJ	mg/L	MS
RW-200I	460-147389-5	Ferrous Iron	0.10	U	UJ	mg/L	HT, FD
RW-200I	460-147389-5	Carbon Dioxide, Free	5.0	U	R	mg/L	HT
RW-200I	460-147389-5	Chemical Oxygen Demand	5.0	J	J	mg/L	MS
RW-202S	460-147389-6	Total Kjeldahl Nitrogen	7.3		J	mg/L	MS
RW-202S	460-147389-6	Ferrous Iron	0.10	U	UJ	mg/L	HT, FD
RW-202S	460-147389-6	Carbon Dioxide, Free	5.0	U	R	mg/L	HT
RW-202S	460-147389-6	Chemical Oxygen Demand	17.5		J-	mg/L	MS
RW-202I	460-147389-7	Total Kjeldahl Nitrogen	0.76		J	mg/L	MS
RW-202I	460-147389-7	Ferrous Iron	0.10	U	R	mg/L	HT, FD
RW-202I	460-147389-7	Carbon Dioxide, Free	5.0	U	R	mg/L	HT
RW-202I	460-147389-7	Chemical Oxygen Demand	12.0		J-	mg/L	MS
RW-26	460-147510-1	Total Kjeldahl Nitrogen	3.7		J	mg/L	MS
RW-26	460-147510-1	Ferrous Iron	0.13		J	mg/L	HT, FD
RW-26	460-147510-1	Carbon Dioxide, Free	45.3		J	mg/L	HT
RW-26	460-147510-1	Nitrite as N	0.032	JB	0.10 U	mg/L	MB
RW-26	460-147510-1	Chemical Oxygen Demand	15.9		J-	mg/L	MS
RW-204	460-147510-2	Total Kjeldahl Nitrogen	0.40		J	mg/L	MS
RW-204	460-147510-2	Ferrous Iron	0.1	U	UJ	mg/L	HT, FD
RW-204	460-147510-2	Carbon Dioxide, Free	5.0	U	R	mg/L	HT
RW-204	460-147510-2	Chemical Oxygen Demand	10.0	U	UJ	mg/L	MS
RW-203I	460-147510-3	Total Kjeldahl Nitrogen	0.84		J	mg/L	MS
RW-203I	460-147510-3	Ferrous Iron	0.10	U	UJ	mg/L	HT, FD
RW-203I	460-147510-3	Carbon Dioxide, Free	5.0	U	R	mg/L	HT
RW-203I	460-147510-3	Nitrite as N	0.028	JB	0.10 U	mg/L	MB
RW-203I	460-147510-3	Chemical Oxygen Demand	23.3		J-	mg/L	MS
RW-203I	460-147510-3	Benzo(a)anthracene	0.25	U	R	ug/l	RRF
RW-203S	460-147510-4	Total Kjeldahl Nitrogen	1.4	-	J	mg/L	MS

Field ID	Lab ID	Parameter	Result	Lab Qualifier ¹	Validation Qualifier ¹	Units ³	Reason Code(s) ²
RW-203S	460-147510-4	Ferrous Iron	0.10	U	UJ	mg/L	HT, FD
RW-203S	460-147510-4	Carbon Dioxide, Free	7.5		J	mg/L	HT
RW-203S	460-147510-4	Nitrite as N	0.023	JB	0.10 U	mg/L	MB
RW-203S	460-147510-4	Chemical Oxygen Demand	15.6		J-	mg/L	MS
RW-210I	460-147510-5	2-Methylnaphthalene	260		J	ug/l	MS
RW-210I	460-147510-5	Acenaphthene	77		J	ug/l	MS
RW-210I	460-147510-5	Carbon Dioxide, Free	7.5		J	mg/L	HT
RW-210I	460-147510-5	Chemical Oxygen Demand	11.7		J-	mg/L	MS
RW-210I	460-147510-5	Ferrous Iron	0.10	U	UJ	mg/L	HT, FD
RW-210I	460-147510-5	Naphthalene	87		J	ug/l	MS, RPD
RW-210I	460-147510-5	Nitrite as N	0.029	JB	0.10 U	mg/L	MB
RW-210I	460-147510-5	Total Kjeldahl Nitrogen	2.4		J	mg/L	MS
DUP-01	460-147510-6	Chemical Oxygen Demand	12.4		J-	mg/L	MS
DUP-01	460-147510-6	Total Kjeldahl Nitrogen	1.3		J	mg/L	MS
DUP-01	460-147510-6	Ferrous Iron	0.38		J	mg/L	HT, FD
DUP-01	460-147510-6	Carbon Dioxide, Free	5.5		J	mg/L	HT

(1): Data Validation Qualifiers:

- U: The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J: The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- UJ: The analyte was analyzed for, but was not detected. The reported quantitation limit is approximated and may be inaccurate or imprecise.
- J-: The result is an estimated quantity, likely to be biased low.
- R: The data are unusable. The sample results are rejected due to serious deficiencies in the ability to meet quality control criteria. The presence or absence of the analyte cannot be verified.

(2): Reason Codes:

- FD: The field duplicate RPD was greater than the maximum advisory limit.
- HT: The USEPA-recommended holding time was exceeded.
- MB: Contamination was detected in the associated method blank.
- MS: The matrix spike recovery was outside the advisory limits.
- RPD: The laboratory duplicate RPD was greater than the maximum advisory limit.
- RRF: The calibration relative response factors were less than the minimum method specification limit.

(3): Units

μg/L: micrograms per liter (ppb) mg/L: milligrams per liter (ppm)



January 30, 2018

Data Usability Summary Report

National Grid/Clifton Former MGP Site WWTP Effluent Sampling Events TestAmerica-Edison Laboratory July-December 2017 Final



Data Usability Summary Report

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Appendix A Glossary of Data Qualifier Codes

Appendix B Data Qualification Summaries

Appendix C Support Documentation

AECOM ES-1

Executive Summary

Overview

A data assessment was performed by Gregory A. Malzone of AECOM Pittsburgh on six data packages from TestAmerica Laboratories, Inc., 777 New Durham Road, Edison, NJ 08817 (TAL-Edison) for the analysis of aqueous effluent samples collected on July – December 2017 at the Clifton former manufactured gas plant (MGP) site.

The following analytical methods were requested on the chain-of-custody (CoC) records:

- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) by USEPA Method 8260C,
- Polynuclear Aromatic Hydrocarbons (PAHs) by USEPA Method 8270D, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Hexachlorobenzene and Indeno(1,2,3-cd)pyrene were determined using GC/MS in Selected Ion Monitoring (SIM) Mode,
- Arsenic and Nickel by USEPA Method 6020A,
- Total Cyanide by USEPA Method 335.4,
- Available Cyanide by USEPA Method OIA-1677,
- Total Suspended Solids (TSS) by Standard Method 2540D,
- Turbidity by USEPA Method 180.1, and
- pH by Standard Method 4500-H+ B.

The samples for available cyanide (OIA-1677) analysis were subcontracted to the TestAmerica Laboratories, Inc., Pittsburgh facility.

The data were evaluated for conformance to method specifications and qualifiers were applied using the USEPA Region II SOPs and the validation criteria set forth in the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-014-002, August 2014 and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-013-001, August 2014, as they apply to the analytical methods employed.

Table 1 below provides a sample submittal list with the field IDs cross-referenced with the laboratory IDs.

AECOM ES-2

Table 1 - Sample Submittals
National Grid / Clifton Effluent Samples

Field ID	TestAmerica ID	Matrix	Date Sampled	BTEX 8260C	PAHs 8270D	SVOCs 8270D SIM	As, Ni 6020A	Wet Chemistry*
WWTP-072817	460-138127-1	GW	7/28/2017	Х	Х	Х	Х	х
WWTP-080717	460-138700-2	GW	8/7/2017	Х				
WWTP-081417	460-139137-1	GW	8/14/2017	Х				
WWTP-081517	460-139201-1	GW	8/15/2017	Х				
WWTP-091317	460-140857-1	GW	9/13/2017	Х				
WWTP-091417	460-140900-1	GW	9/14/2017	Х				
WWTP-09222017	460-141437-1	GW	9/22/2017	Х			As	TCN
WWTP-20170928	460-141835-3	GW	9/28/2017	Х				
WWTP-10162017	460-143064-5	GW	10/16/2017	Х				
WWTP-10262017	460-143732-1	GW	10/26/2017	Х				
WWTP-10272017	460-143826-1	GW	10/27/2017	Х				
WWTP-10282017	460-143908-1	GW	10/28/2017	Х				
WWTP-10292017	460-143938-1	GW	10/29/2017	Х				
WWTP-10302017	460-143938-2	GW	10/30/2017	Х				
WWTP-10312017	460-144002-1	GW	10/31/2017	Х				
WWTP-11012017	460-144088-1	GW	11/1/2017	Х				
WWTP-112217	460-145711-1	GW	11/22/2017	Х	Х	Х	Х	х
WWTP-12212017	460-147524-1	GW	12/22/2017	Х	Х	Х	Х	Х

^{*} Total and available cyanide, pH, turbidity and total suspended solids.

Summary

Data quality for the organic analyses was evaluated by reviewing the following parameters: holding times, initial and continuing calibrations, daily GC/MS hardware tunes and performance checks, internal standard area counts, surrogate recoveries, laboratory control standards (LCSs), laboratory blanks, laboratory duplicates, and reporting limits.

Inorganic data quality was evaluated by reviewing the following parameters: holding times, initial and continuing calibrations, ICP-MS internal standards, matrix spikes, laboratory control samples, laboratory duplicates, laboratory blanks, and reporting limits.

All data have been determined to be useable for the purpose of assessing the presence/absence and quantitative concentrations of the compounds and analytes in the media tested (i.e. effluent) with the qualifications described below. Several data points were qualified as estimates because of low method and instrument bias and lapsed holding times. Completeness of 100% was achieved for this data set. This is within the goal of 90-100% and is acceptable.

A glossary of data qualifier definitions is included in Appendix A of this report. The data qualifier summaries are attached as Appendix B of this report. Each noncompliance with specific data usability criteria is discussed below. Support documentation for the data qualifications discussed is provided in Appendix C of this report.

AECOM 1-1

1.0 Volatile Organic Compounds

460-138127-1

No data quality issues were noted. No data qualifications were required.

460-138700-1

No data quality issues were noted. No data qualifications were required.

460-139137-1

No data quality issues were noted. No data qualifications were required.

460-139201-1

No data quality issues were noted. No data qualifications were required.

460-140857-1

No data quality issues were noted. No data qualifications were required.

460-140900-1

No data quality issues were noted. No data qualifications were required.

460-141437-1

No data quality issues were noted. No data qualifications were required.

460-141835-1

No data quality issues were noted. No data qualifications were required.

460-143064-1

No data quality issues were noted. No data qualifications were required.

460-143732-1

No data quality issues were noted. No data qualifications were required.

460-143826-1

No data quality issues were noted. No data qualifications were required.

460-143908-1

No data quality issues were noted. No data qualifications were required.

460-143938-1

AECOM 1-2

460-144002-1

No data quality issues were noted. No data qualifications were required.

460-144088-1

No data quality issues were noted. No data qualifications were required.

460-145711-1

No data quality issues were noted. No data qualifications were required.

460-147524-1

AECOM 2-1

2.0 Polycyclic Aromatic Hydrocarbons

460-138127-1

<u>Calibrations:</u> The percent difference for benzo(b)fluoranthene was less than the lower method specification limit of -20%, at -22.6% on 08/01/17 at 09:41 on instrument CBNAMS9. The benzo(b)fluoranthene result for associated sample WWTP-072817 was non-detect and was qualified "UJ," as an estimate, because of low instrument bias.

460-145711-1

<u>Calibrations:</u> The SIM percent difference for indeno(1,2,3-cd)pyrene was greater than the upper method specification limit of 20%, at 25.4% on 11/26/17 at 08:22 on instrument CBNAMS9. The indeno(1,2,3-cd)pyrene result for associated sample WWTP-112217 was non-detect and did not require qualification in response to the high instrument bias.

<u>Laboratory Control Sample:</u> The indeno(1,2,3-cd)pyrene recovery for LCS 460-479607/4-A was greater than the upper quality control limit. The indeno(1,2,3-cd)pyrene result for associated sample WWTP-112217 was non-detect and did not require qualification in response to the high method bias.

460-147524-1

AECOM 3-1

3.0 Total Metals

460-138127-1

No data quality issues were noted. No data qualifications were required.

460-141437-1

No data quality issues were noted. No data qualifications were required.

460-145711-1

No data quality issues were noted. No data qualifications were required.

460-147524-1

AECOM 4-1

4.0 Total and Available Cyanide

460-138127-1

No data quality issues were noted. No data qualifications were required.

460-141437-1

No data quality issues were noted. No data qualifications were required.

460-145711-1

No data quality issues were noted. No data qualifications were required.

460-147524-1

AECOM 5-1

5.0 General Chemistry

460-138127-1

<u>Holding Times:</u> The pH analysis was performed outside the USEPA method holding time. A pH sample must be analyzed immediately upon sample collection, that is, as a field test. The pH result for sample WWTP-072817 was positive and was qualified "J," as an estimated value, because the "analyze immediately" holding time was exceeded.

460-145711-1

<u>Holding Times:</u> The pH analysis was performed outside the USEPA method holding time. A pH sample must be analyzed immediately upon sample collection, that is, as a field test. The pH result for sample WWTP-112217 was positive and was qualified "J," as an estimated value, because the "analyze immediately" holding time was exceeded.

460-147524-1

<u>Holding Times:</u> The pH analysis was performed outside the USEPA method holding time. A pH sample must be analyzed immediately upon sample collection, that is, as a field test. The pH result for sample WWTP-12212017 was positive and was qualified "J," as an estimated value, because the "analyze immediately" holding time was exceeded.

AECOM 6-1

6.0 Notes

Positive organic and inorganic results less than the reporting limit, but greater than the method detection limit (MDL) were qualified "J," as estimated concentrations, due to increased uncertainty near the detection limit. The "J" qualifiers were maintained in the data validation.

Matrix spike and matrix spike duplicates, laboratory duplicates, and ICP serial dilutions that were performed on non-project samples were not evaluated because matrix similarity to project samples could not be assumed.

Appendix A

Glossary of Data Qualifier Codes

Glossary of Data Qualifier Codes

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximated and may be inaccurate or imprecise.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, likely to be biased high. The associated numerical value is the approximate concentration of the analyte in the sample.
- J- The result is an estimated quantity, likely to be biased low. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious deficiencies in the ability to meet quality control criteria. The presence or absence of the analyte cannot be verified.
- N (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
- NJ (Organics) The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

Appendix B

Data Qualification Summaries

Lab Name: TestAmerica Edison Job No.: 460-138127-1 SDG No.: Client Sample ID: WWTP-072817 Lab Sample ID: 460-138127-1 Matrix: Water Lab File ID: J59057.D Analysis Method: 8260C Date Collected: 07/28/2017 12:20 Sample wt/vol: 5(mL) Date Analyzed: 08/01/2017 04:22 Soil Aliquot Vol: Dilution Factor: 1 Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25 (mm) Level: (low/med) Low % Moisture: Analysis Batch No.: 453074 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	51		1.0	0.090
100-41-4	Ethylbenzene	0.30	Ū	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	Ū	1.0	0.28
95-47-6	o-Xylene	0.32	Ū	1.0	0.32
108-88-3	Toluene	0.25	U	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	108		74-132
460-00-4	4-Bromofluorobenzene	80		77-124
1868-53-7	Dibromofluoromethane (Surr)	99		72-131
2037-26-5	Toluene-d8 (Surr)	105		80-120

Lab Name: TestAmerica Edison Job No.: 460-138127-1

SDG No.:

Client Sample ID: WWTP-072817 Lab Sample ID: 460-138127-1

Matrix: Water Lab File ID: N1210557.D

Analysis Method: 8270D Date Collected: 07/28/2017 12:20

Extract. Method: 3510C Date Extracted: 07/29/2017 18:00

Sample wt/vol: 240(mL) Date Analyzed: 07/30/2017 18:38

Con. Extract Vol.: 2(mL) Dilution Factor: 1

Injection Volume: 5(uL) Level: (low/med) Low

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 452856 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	0.92	U	10	0.9
208-96-8	Acenaphthylene	0.68	U	10	0.6
120-12-7	Anthracene	0.59	ט	10	0.5
191-24-2	Benzo[g,h,i]perylene	0.78	U	10	0.7
218-01-9	Chrysene	0.70	ט	2.1	0.7
206-44-0	Fluoranthene	0.75	U	10	0.7
86-73-7	Fluorene	0.83	Ü	10	0.8
91-20-3	Naphthalene	0.83	ט	10	0.8
85-01-8	Phenanthrene	0.68	ט	10	0.6
129-00-0	Pyrene	0.86	ט	10	0.8

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	93		45-107
4165-60-0	Nitrobenzene-d5 (Surr)	104		51-108
1718-51-0	Terphenyl-d14 (Surr)	96		40-148

Lab Name: TestAmerica Edison Job No.: 460-138127-1

SDG No.:

Client Sample ID: WWTP-072817 Lab Sample ID: 460-138127-1

Matrix: Water Lab File ID: h22152.D

Analysis Method: 8270D SIM Date Collected: 07/28/2017 12:20

Extract. Method: 3510C Date Extracted: 07/29/2017 18:00

Sample wt/vol: 240 (mL) Date Analyzed: 08/01/2017 12:30

Con. Extract Vol.: 2 (mL) Dilution Factor: 1

Injection Volume: 5(uL) Level: (low/med) Low

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 453192 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
56-55-3	Benzo[a]anthracene	0.039	U	0.052	0.039
50-32-8	Benzo[a]pyrene	0.027	U	0.052	0.027
205-99-2	Benzo[b]fluoranthene	0.013	UJ	0.052	0.013
118-74-1	Hexachlorobenzene	0.0094	Ū	0.021	0.0094
193-39-5	Indeno[1,2,3-cd]pyrene	0.028	ט	0.052	0.028

INORGANIC ANALYSIS DATA SHEET

METALS

Client Sample ID: WWTP-072817 Lab Sample ID: 460-138127-1

Lab Name: TestAmerica Edison Job No.: 460-138127-1

SDG ID.:

Matrix: Water Date Sampled: 07/28/2017 12:20

Reporting Basis: WET Date Received: 07/28/2017 13:52

CAS No.	Analyte	Result	RL	MDL	Units	С	Q	DIL	Method
7440-38-2	Arsenic	0.64	2.0	0.64	ug/L	U		2	6020A
7440-02-0	Nickel	1.4	4.0	1.4	ug/L	J		2	6020A

INORGANIC ANALYSIS DATA SHEET GENERAL CHEMISTRY

Client Sample ID: WWTP-072817	Lab Sample ID: 460-138127-1
Lab Name: TestAmerica Edison	Job No.: 460-138127-1
SDG ID.:	
Matrix: Water	Date Sampled: 07/28/2017 12:20
Reporting Basis: WET	Date Received: 07/28/2017 13:52

CAS No.	Analyte	Result	RL	MDL	Units	С	Q	DIL	Method
57-12-5	Cyanide, Total	0.0020	0.010	0.0020	mg/L	ט	Ì	1	335.4
	Turbidity	4.34	0.500	0.160	NTU			1	180.1
	Total Suspended Solids	2.7	1.0	1.0	mg/L			1	SM 2540D
	рН	8.2			SU	J	HE-	1	SM 4500 H+ B

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INORGANIC ANALYSIS DATA SHEET GENERAL CHEMISTRY

Client Sample ID: WWTP-072817

Lab Sample ID: 460-138127-1

Lab Name: TestAmerica Pittsburgh

SDG ID.:

Matrix: Water

Date Sampled: 07/28/2017 12:20

Reporting Basis: WET

Date Received: 07/28/2017 13:52

CAS No.	Analyte	Result	RL	MDL	Units	С	Q	DIL	Method
	Cyanide, Available	0.00036	0.0020	0.00036	mg/L	Ū		1	OIA-1677

 Lab Name: TestAmerica Edison
 Job No.: 460-138700-1

 SDG No.:
 Client Sample ID: WWTP-080717
 Lab Sample ID: 460-138700-2

 Matrix: Water
 Lab File ID: P31947.D

 Analysis Method: 8260C
 Date Collected: 08/07/2017 13:05

 Sample wt/vol: 5 (mL)
 Date Analyzed: 08/08/2017 12:32

 Soil Aliquot Vol:
 Dilution Factor: 1

 Soil Extract Vol.:
 GC Column: Rtx-624
 ID: 0.25 (mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 454730 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	44		1.0	0.090
100-41-4	Ethylbenzene	0.30	Ü	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	ט	1.0	0.28
95-47-6	o-Xylene	0.32	Ü	1.0	0.32
108-88-3	Toluene	0.25	ט	1.0	0.25
1330-20-7	Xylenes, Total	0.28	ט	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	111		74-132
460-00-4	4-Bromofluorobenzene	106		77-124
1868-53-7	Dibromofluoromethane (Surr)	110		72-131
2037-26-5	Toluene-d8 (Surr)	103		80-120

Lab Name: TestAmerica Edison Job No.: 460-139137-1 SDG No.: Client Sample ID: WWTP-081417 Lab Sample ID: 460-139137-1 Matrix: Water Lab File ID: 028426.D Analysis Method: 8260C Date Collected: 08/14/2017 15:35 Sample wt/vol: 5(mL) Date Analyzed: 08/15/2017 03:55 Soil Aliquot Vol: Dilution Factor: 1 Soil Extract Vol.: GC Column: DB-624 ID: 0.18 (mm) % Moisture: Level: (low/med) Low Analysis Batch No.: 456230 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	95		1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	Ū	1.0	0.28
95-47-6	o-Xylene	0.32	Ū	1.0	0.32
108-88-3	Toluene	0.25	Ū	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99		74-132
460-00-4	4-Bromofluorobenzene	99		77-124
1868-53-7	Dibromofluoromethane (Surr)	103		72-131
2037-26-5	Toluene-d8 (Surr)	98		80-120

Lab Name: TestAmerica Edison Job No.: 460-139201-1

SDG No.:

Client Sample ID: WWTP-081517 Lab Sample ID: 460-139201-1

Matrix: Water Lab File ID: A44057.D

Analysis Method: 8260C Date Collected: 08/15/2017 15:00

Sample wt/vol: 5(mL) Date Analyzed: 08/16/2017 11:36

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 456628 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	450		1.0	0.090
100-41-4	Ethylbenzene	0.30	Ū	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	Ū	1.0	0.2
95-47-6	o-Xylene	0.32	Ū	1.0	0.32
108-88-3	Toluene	0.25	Ū	1.0	0.29
1330-20-7	Xylenes, Total	0.28	U	2.0	0.2

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	103		74-132
460-00-4	4-Bromofluorobenzene	100		77-124
1868-53-7	Dibromofluoromethane (Surr)	109		72-131
2037-26-5	Toluene-d8 (Surr)	113		80-120

Lab Name: TestAmerica Edison Job No.: 460-140857-1 SDG No.: Client Sample ID: WWTP-091317 Lab Sample ID: 460-140857-1 Matrix: Water Lab File ID: P34285.D Analysis Method: 8260C Date Collected: 09/13/2017 14:30 Sample wt/vol: 5(mL) Date Analyzed: 09/14/2017 13:50 Soil Aliquot Vol: Dilution Factor: 1 GC Column: Rtx-624 ID: 0.25(mm) Soil Extract Vol.: % Moisture: Level: (low/med) Low Analysis Batch No.: 462736 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	150	Ì	1.0	0.090
100-41-4	Ethylbenzene	0.30	Ū	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.28
95-47-6	o-Xylene	0.32	Ū	1.0	0.32
108-88-3	Toluene	0.25	J	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99		74-132
460-00-4	4-Bromofluorobenzene	91		77-124
1868-53-7	Dibromofluoromethane (Surr)	93		72-131
2037-26-5	Toluene-d8 (Surr)	102		80-120

Lab Name: TestAmerica Edison Job No.: 460-140900-1

SDG No.:

Client Sample ID: WWTP-091417 Lab Sample ID: 460-140900-1

Matrix: Water Lab File ID: P34344.D

Analysis Method: 8260C Date Collected: 09/14/2017 13:20

Sample wt/vol: 5(mL) Date Analyzed: 09/15/2017 14:43

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 462990 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	3.4		1.0	0.090
100-41-4	Ethylbenzene	0.30	Ū	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	Ū	1.0	0.28
95-47-6	o-Xylene	0.32	Ū	1.0	0.32
108-88-3	Toluene	0.25	Ū	1.0	0.25
1330-20-7	Xylenes, Total	0.28	Ū	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	103		74-132
460-00-4	4-Bromofluorobenzene	94	,	77-124
1868-53-7	Dibromofluoromethane (Surr)	99		72-131
2037-26-5	Toluene-d8 (Surr)	105		80-120

Lab Name: TestAmerica Edison Job No.: 460-141437-1 SDG No.: Client Sample ID: WWTP-09222017 Lab Sample ID: 460-141437-1 Matrix: Water Lab File ID: 029933.D Analysis Method: 8260C Date Collected: 09/22/2017 13:30 Sample wt/vol: 5(mL) Date Analyzed: 09/23/2017 19:15 Soil Aliquot Vol: Dilution Factor: 1 Soil Extract Vol.: GC Column: DB-624 ID: 0.18 (mm) % Moisture: Level: (low/med) Low

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	1.9		1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	Ū	1.0	0.28
95-47-6	o-Xylene	0.32	Ū	1.0	0.32
108-88-3	Toluene	0.25	Ū	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	81		74-132
460-00-4	4-Bromofluorobenzene	107		77-124
1868-53-7	Dibromofluoromethane (Surr)	83		72-131
2037-26-5	Toluene-d8 (Surr)	94		80-120

Analysis Batch No.: 464612

1A-IN INORGANIC ANALYSIS DATA SHEET METALS

Client Sample ID: WWTP-09222017 Lab Sample ID: 460-141437-1

Lab Name: TestAmerica Edison Job No.: 460-141437-1

SDG ID.:

Matrix: Water Date Sampled: 09/22/2017 13:30

Reporting Basis: WET Date Received: 09/22/2017 15:34

CAS No.	Analyte	Result	RL	MDL	Units	С	Q	DIL	Method
7440-38-2	Arsenic	0.64	2.0	0.64	ug/L	U		2	6020A

1B-IN INORGANIC ANALYSIS DATA SHEET GENERAL CHEMISTRY

Client Sample ID: WWTP-09222017 Lab Sample ID: 460-141437-1

Lab Name: TestAmerica Edison Job No.: 460-141437-1

SDG ID.:

Matrix: Water Date Sampled: 09/22/2017 13:30

Reporting Basis: WET Date Received: 09/22/2017 15:34

CAS No.	Analyte	Result	RL	MDL	Units	С	Q	DIL	Method
57-12-5	Cyanide, Total	0.0020	0.010	0.0020	mg/L	U		1	335.4

Lab Name: TestAmerica Edison Job No.: 460-141835-1 SDG No.: Client Sample ID: WWTP-20170928 Lab Sample ID: 460-141835-3 Matrix: Water Lab File ID: B21476.D Analysis Method: 8260C Date Collected: 09/28/2017 14:05 Sample wt/vol: 5(mL) Date Analyzed: 10/03/2017 11:22 Soil Aliquot Vol: Dilution Factor: 1 Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25 (mm) % Moisture: Level: (low/med) Low Analysis Batch No.: 466539 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	33		1.0	0.090
100-41-4	Ethylbenzene	0.30	ט	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	Ū	1.0	0.28
95-47-6	o-Xylene	0.32	Ū	1.0	0.32
108-88-3	Toluene	0.28	J	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	116		74-132
460-00-4	4-Bromofluorobenzene	93		77-124
1868-53-7	Dibromofluoromethane (Surr)	102		72-131
2037-26-5	Toluene-d8 (Surr)	93		80-120

Lab Name: TestAmerica Edison	Job No.: 460-143064-1			
SDG No.:				
Client Sample ID: WWTP-10162017	Lab Sample ID: 460-143064-5			
Matrix: Water	Lab File ID: B22221.D			
Analysis Method: 8260C	Date Collected: 10/16/2017 15:00			
Sample wt/vol: 5(mL)	Date Analyzed: 10/17/2017 12:29			
Soil Aliquot Vol:	Dilution Factor: 1			
Soil Extract Vol.:	GC Column: Rtx-624 ID: 0.25 (mm)			
% Moisture:	Level: (low/med) Low			
Analysis Batch No.: 469893	Units: ug/L			

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.26	J	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.28
95-47-6	o-Xylene	0.32	Ū	1.0	0.32
108-88-3	Toluene	0.25	Ū	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	105		74-132
460-00-4	4-Bromofluorobenzene	89		77-124
1868-53-7	Dibromofluoromethane (Surr)	107		72-131
2037-26-5	Toluene-d8 (Surr)	109		80-120

Lab Name: TestAmerica Edison Job No.: 460-143732-1 SDG No.: Client Sample ID: WWTP-10262017 Lab Sample ID: 460-143732-1 Matrix: Water Lab File ID: A48021.D Date Collected: 10/26/2017 14:30 Analysis Method: 8260C Sample wt/vol: 5(mL) Date Analyzed: 10/27/2017 10:16 Soil Aliquot Vol: Dilution Factor: 1 Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25 (mm) % Moisture: Level: (low/med) Low Analysis Batch No.: 472589 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Ω	RL	MDL
71-43-2	Benzene	0.13	J	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.28
95-47-6	o-Xylene	0.32	Ū	1.0	0.32
108-88-3	Toluene	0.25	Ū	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	124		74-132
460-00-4	4-Bromofluorobenzene	101		77-124
1868-53-7	Dibromofluoromethane (Surr)	108		72-131
2037-26-5	Toluene-d8 (Surr)	92		80-120

Lab Name: TestAmerica Edison	Job No.: 460-143826-1				
SDG No.:					
Client Sample ID: WWTP-10272017	Lab Sample ID: 460-143826-1				
Matrix: Water	Lab File ID: P36485.D				
Analysis Method: 8260C	Date Collected: 10/27/2017 12:15				
Sample wt/vol: 5(mL)	Date Analyzed: 10/28/2017 20:42				
Soil Aliquot Vol:	Dilution Factor: 1				
Soil Extract Vol.:	GC Column: Rtx-624 ID: 0.25(mm)				
% Moisture:	Level: (low/med) Low				
Analysis Batch No.: 472846	Units: ug/L				

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.54	J	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.28
95-47-6	o-Xylene	0.32	Ū	1.0	0.3
108-88-3	Toluene	0.25	ט	1.0	0.2
1330-20-7	Xylenes, Total	0.28	U	2.0	0.2

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	95		74-132
460-00-4	4-Bromofluorobenzene	98		77-124
1868-53-7	Dibromofluoromethane (Surr)	99		72-131
2037-26-5	Toluene-d8 (Surr)	99		80-120

Lab Name: TestAmerica Edison Job No.: 460-143908-1 SDG No.: Client Sample ID: WWTP-10282017 Lab Sample ID: 460-143908-1 Matrix: Water Lab File ID: F55827.D Analysis Method: 8260C Date Collected: 10/28/2017 10:40 Sample wt/vol: 5(mL) Date Analyzed: 10/29/2017 10:14 Soil Aliquot Vol: Dilution Factor: 1 Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25 (mm) % Moisture: Level: (low/med) Low Analysis Batch No.: 473065 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.18	J	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	ט	1.0	0.28
95-47-6	o-Xylene	0.32	Ū	1.0	0.32
108-88-3	Toluene	0.25	U	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	111		74-132
460-00-4	4-Bromofluorobenzene	111		77-124
1868-53-7	Dibromofluoromethane (Surr)	113		72-131
2037-26-5	Toluene-d8 (Surr)	102	<u></u>	80-120

Lab Name: TestAmerica Edison Job No.: 460-143938-1 SDG No.: Client Sample ID: WWTP-10292017 Lab Sample ID: 460-143938-1 Matrix: Water Lab File ID: J62065.D Analysis Method: 8260C Date Collected: 10/29/2017 13:30 Sample wt/vol: 5(mL) Date Analyzed: 10/31/2017 10:26 Soil Aliquot Vol: Dilution Factor: 1 Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25 (mm) % Moisture: Level: (low/med) Low Analysis Batch No.: 473425 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.14	J	1.0	0.090
100-41-4	Ethylbenzene	0.30	Ū	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	Ū	1.0	0.28
95-47-6	o-Xylene	0.32	Ū	1.0	0.32
108-88-3	Toluene	0.25	U	1.0	0.25
1330-20-7	Xylenes, Total	0.28	ט	2.0	0.28

		The state of the s		T
CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	116		74-132
460-00-4	4-Bromofluorobenzene	100	100	
1868-53-7	Dibromofluoromethane (Surr)	130		72-131
2037-26-5	Toluene-d8 (Surr)	103		80-120

Lab Name: TestAmerica Edison Job No.: 460-143938-1 SDG No.: Client Sample ID: WWTP-10302017 Lab Sample ID: 460-143938-2 Matrix: Water Lab File ID: J62064.D Analysis Method: 8260C Date Collected: 10/30/2017 12:40 Sample wt/vol: 5(mL) Date Analyzed: 10/31/2017 09:59 Soil Aliquot Vol: Dilution Factor: 1 Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25 (mm) % Moisture: Level: (low/med) Low Analysis Batch No.: 473425 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.093	J	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.3
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.2
95-47-6	o-Xylene	0.32	Ū	1.0	0.3
108-88-3	Toluene	0.25	Ū	1.0	0.2
1330-20-7	Xylenes, Total	0.28	U	2.0	0.2

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	117		74-132
460-00-4	4-Bromofluorobenzene	104		77-124
1868-53-7	Dibromofluoromethane (Surr)	129		72-131
2037-26-5	Toluene-d8 (Surr)	106		80-120

Lab Name: TestAmerica Edison Job No.: 460-144002-1

SDG No.:

Client Sample ID: WWTP-10312017 Lab Sample ID: 460-144002-1

Matrix: Water Lab File ID: B22945.D

Analysis Method: 8260C Date Collected: 10/31/2017 12:30

Sample wt/vol: 5(mL) Date Analyzed: 11/01/2017 10:47

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25 (mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 473714 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.090	Ū	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.28
95-47-6	o-Xylene	0.32	U	1.0	0.32
108-88-3	Toluene	0.25	Ū	1.0	0.25
1330-20-7	Xylenes, Total	0.28	Ū	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	96		74-132
460-00-4	4-Bromofluorobenzene	95		77-124
1868-53-7	Dibromofluoromethane (Surr)	97		72-131
2037-26-5	Toluene-d8 (Surr)	100		80-120

Lab Name: TestAmerica Edison	Job No.: 460-144088-1
SDG No.:	
Client Sample ID: WWTP11012017	Lab Sample ID: 460-144088-1
Matrix: Water	Lab File ID: A48273.D
Analysis Method: 8260C	Date Collected: 11/01/2017 12:30
Sample wt/vol: 5(mL)	Date Analyzed: 11/02/2017 11:37
Soil Aliquot Vol:	Dilution Factor: 1
Soil Extract Vol.:	GC Column: Rtx-624 ID: 0.25(mm)
% Moisture:	Level: (low/med) Low
Analysis Batch No · 473076	Unite: wa/I

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.25	J	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.3
179601-23-1	m-Xylene & p-Xylene	0.28	Ū	1.0	0.2
95-47-6	o-Xylene	0.32	Ū	1.0	0.3
108-88-3	Toluene	0.25	Ū	1.0	0.2
1330-20-7	Xylenes, Total	0.28	U	2.0	0.2

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	120		74-132
460-00-4	4-Bromofluorobenzene	99		77-124
1868-53-7	Dibromofluoromethane (Surr)	102		72-131
2037-26-5	Toluene-d8 (Surr)	107		80-120

Lab Name: TestAmerica Edison Job No.: 460-145711-1 SDG No.: Client Sample ID: WWTP-112217 Lab Sample ID: 460-145711-1 Matrix: Water Lab File ID: P37896.D Analysis Method: 8260C Date Collected: 11/22/2017 13:50 Sample wt/vol: 5(mL) Date Analyzed: 11/26/2017 13:08 Soil Aliquot Vol: Dilution Factor: 1 Soil Extract Vol.: GC Column: Rtx-624 ID: 0.25 (mm) Level: (low/med) Low % Moisture: Analysis Batch No.: 479912 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.14	J	1.0	0.090
100-41-4	Ethylbenzene	0.30	Ū	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	Ū	1.0	0.28
95-47-6	o-Xylene	0.32	Ū	1.0	0.32
108-88-3	Toluene	0.25	Ū	1.0	0.25
1330-20-7	Xylenes, Total	0.28	Ū	2.0	0.28

CAS NO.	SURROGATE	%REC (Q LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	107	74-132
460-00-4	4-Bromofluorobenzene	99	77-124
1868-53-7	Dibromofluoromethane (Surr)	112	72-131
2037-26-5	Toluene-d8 (Surr)	109	80-120

Lab Name: TestAmerica Edison Job No.: 460-145711-1 SDG No.: Client Sample ID: WWTP-112217 Lab Sample ID: 460-145711-1 Matrix: Water Lab File ID: A111434.D Analysis Method: 8270D Date Collected: 11/22/2017 13:50 Extract. Method: 3510C Date Extracted: 11/24/2017 10:12 Sample wt/vol: 240(mL) Date Analyzed: 11/25/2017 06:34 Con. Extract Vol.: 2(mL) Dilution Factor: 1 Injection Volume: 5(uL) Level: (low/med) Low % Moisture: GPC Cleanup: (Y/N) N Analysis Batch No.: 479740 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	0.92	U	10	0.9
208-96-8	Acenaphthylene	0.68	U	10	0.6
120-12-7	Anthracene	0.59	U	10	0.5
191-24-2	Benzo[g,h,i]perylene	0.78	Ū	10	0.7
218-01-9	Chrysene	0.70	Ū	2.1	0.7
206-44-0	Fluoranthene	0.75	Ū	10	0.7
86-73-7	Fluorene	0.83	Ū	10	0.8
91-20-3	Naphthalene	0.83	Ū	10	0.8
85-01-8	Phenanthrene	0.68	U	10	0.6
129-00-0	Pyrene	0.86	U	10	0.8

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	96		45-107
4165-60-0	Nitrobenzene-d5 (Surr)	108		51-108
1718-51-0	Terphenyl-d14 (Surr)	101		40-148

Lab Name: TestAmerica Edison Job No.: 460-145711-1 SDG No.: Client Sample ID: WWTP-112217 Lab Sample ID: 460-145711-1 Matrix: Water Lab File ID: h226215.D Analysis Method: 8270D SIM Date Collected: 11/22/2017 13:50 Extract. Method: 3510C Date Extracted: 11/24/2017 10:12 Sample wt/vol: 240(mL) Date Analyzed: 11/26/2017 16:42 Con. Extract Vol.: 2(mL) Dilution Factor: 1 Injection Volume: 5(uL) Level: (low/med) Low % Moisture: GPC Cleanup: (Y/N) N Analysis Batch No.: 479953 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
56-55-3	Benzo[a]anthracene	0.019	Ū	0.052	0.019
50-32-8	Benzo[a]pyrene	0.026	Ū	0.052	0.026
205-99-2	Benzo[b]fluoranthene	0.020	Ū	0.052	0.020
118-74-1	Hexachlorobenzene	0.0094	U	0.021	0.0094
193-39-5	Indeno[1,2,3-cd]pyrene	0.022	υX	0.052	0.022

INORGANIC ANALYSIS DATA SHEET METALS

Client Sample ID: WWTP-112217 Lab Sample ID: 460-145711-1

Lab Name: TestAmerica Edison Job No.: 460-145711-1

SDG ID.:

Matrix: Water Date Sampled: 11/22/2017 13:50

Reporting Basis: WET Date Received: 11/22/2017 16:50

CAS No.	Analyte	Result	RL	MDL	Units	С	Q	DIL	Method
7440-38-2	Arsenic	0.64	2.0	0.64	ug/L	U		2	6020A
7440-02-0	Nickel	1.4	4.0	1.4	ug/L	U		2	6020A

INORGANIC ANALYSIS DATA SHEET GENERAL CHEMISTRY

Clie	ent Samp	ple ID: WWTP-112217	Lab Sample	e ID:	460-145711-1
Lab	Name:	TestAmerica Edison	Job No.:	460-1	45711-1
SDG	ID.:				

Date Sampled: 11/22/2017 13:50

Reporting Basis: WET Date Received: 11/22/2017 16:50

CAS No.	Analyte	Result	RL	MDL	Units	С	Q	DIL	Method
57-12-5	Cyanide, Total	0.0020	0.010	0.0020	mg/L	U	<u> </u>	1	335.4
	Turbidity	6.81	0.500	0.160	NTU			1	180.1
	Total Suspended Solids	4.1	1.0	1.0	mg/L			1	SM 2540D
	рН	8.5			SU	J	-HP	1	SM 4500 H+ B

h

Matrix: Water

INORGANIC ANALYSIS DATA SHEET GENERAL CHEMISTRY

Client Sample ID: WWTP-112217 Lab Sample ID: 460-145711-1

Lab Name: TestAmerica Pittsburgh Job No.: 460-145711-1

SDG ID.:

Matrix: Water Date Sampled: 11/22/2017 13:50

Reporting Basis: WET Date Received: 11/22/2017 16:50

CAS No.	Analyte	Result	RL	MDL	Units	С	Q	DIL	Method
	Cyanide, Available	0.00036	0.0020	0.00036	mg/L	Ū		1	OIA-1677

Lab Name: TestAmerica Edison	Job No.: 460-147524-1
SDG No.:	
Client Sample ID: WWTP-12212017	Lab Sample ID: 460-147524-1
Matrix: Water	Lab File ID: P39209.D
Analysis Method: 8260C	Date Collected: 12/21/2017 14:30
Sample wt/vol: 5(mL)	Date Analyzed: 12/23/2017 18:10
Soil Aliquot Vol:	Dilution Factor: 1
Soil Extract Vol.:	GC Column: Rtx-624 ID: 0.25 (mm)
% Moisture:	Level: (low/med) Low
Analysis Batch No.: 486706	Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.090	U	1.0	0.09
100-41-4	Ethylbenzene	0.30	Ū	1.0	0.3
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.2
95-47-6	o-Xylene	0.32	Ū	1.0	0.3
108-88-3	Toluene	0.25	U	1.0	0.2
1330-20-7	Xylenes, Total	0.28	U	2.0	0.2

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99		74-132
460-00-4	4-Bromofluorobenzene	90		77-124
1868-53-7	Dibromofluoromethane (Surr)	101		72-131
2037-26-5	Toluene-d8 (Surr)	99		80-120

Lab Name: TestAmerica Edison	Job No.: 460-147524-1
SDG No.:	
Client Sample ID: WWTP-12212017	Lab Sample ID: 460-147524-1
Matrix: Water	Lab File ID: N170528.D
Analysis Method: 8270D	Date Collected: 12/21/2017 14:30
Extract. Method: 3510C	Date Extracted: 12/22/2017 23:37
Sample wt/vol: 250(mL)	Date Analyzed: 12/24/2017 19:06

Con. Extract Vol.: 2(mL) Dilution Factor: 1

Injection Volume: 5(uL) Level: (low/med) Low % Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 486904 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	0.88	Ū	10	0.88
208-96-8	Acenaphthylene	0.65	Ū	10	0.65
120-12-7	Anthracene	0.57	Ū	10	0.57
191-24-2	Benzo[g,h,i]perylene	0.75	Ū	10	0.75
218-01-9	Chrysene	0.67	Ū	2.0	0.67
206-44-0	Fluoranthene	0.72	Ū	10	0.72
86-73-7	Fluorene	0.80	Ū	10	0.80
91-20-3	Naphthalene	0.80	Ū	10	0.80
85-01-8	Phenanthrene	0.65	Ū	10	0.65
129-00-0	Pyrene	0.83	U	10	0.83

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	72		45-107
4165-60-0	Nitrobenzene-d5 (Surr)	80		51-108
1718-51-0	Terphenyl-d14 (Surr)	113		40-148

Lab Name: TestAmerica Edison Job No.: 460-147524-1 SDG No.: Client Sample ID: WWTP-12212017 Lab Sample ID: 460-147524-1 Matrix: Water Lab File ID: U5697.D Analysis Method: 8270D SIM Date Collected: 12/21/2017 14:30 Extract. Method: 3510C Date Extracted: 12/22/2017 23:37 Sample wt/vol: 250(mL) Date Analyzed: 12/23/2017 19:43 Con. Extract Vol.: 2(mL) Dilution Factor: 1 Injection Volume: 5(uL) Level: (low/med) Low % Moisture: GPC Cleanup: (Y/N) N Analysis Batch No.: 486838 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
56-55-3	Benzo[a]anthracene	0.075		0.050	0.018
50-32-8	Benzo[a]pyrene	0.27		0.050	0.025
205-99-2	Benzo[b]fluoranthene	0.47		0.050	0.019
118-74-1	Hexachlorobenzene	0.0090	U	0.020	0.0090
193-39-5	Indeno[1,2,3-cd]pyrene	0.38	-	0.050	0.021

INORGANIC ANALYSIS DATA SHEET METALS

Client Sample ID: WWTP-12212017 Lab Sample ID: 460-147524-1

Lab Name: TestAmerica Edison Job No.: 460-147524-1

SDG ID.:

Matrix: Water Date Sampled: 12/21/2017 14:30

Reporting Basis: WET Date Received: 12/21/2017 20:30

CAS No.	Analyte	Result	RL	MDL	Units	С	Q	DIL	Method
7440-38-2	Arsenic	0.64	2.0	0.64	ug/L	Ū		2	6020A
7440-02-0	Nickel	1.4	4.0	1.4	ug/L	U		2	6020A

INORGANIC ANALYSIS DATA SHEET GENERAL CHEMISTRY

Client Sample ID: WWTP-12212017 Lab Sam

Lab Sample ID: 460-147524-1

Lab Name: TestAmerica Edison Job No.: 460-147524-1

SDG ID.:

Matrix: Water Date Sampled: 12/21/2017 14:30

Reporting Basis: WET Date Received: 12/21/2017 20:30

CAS No.	Analyte	Result	RL	MDL	Units	С	Q	DIL	Method
57-12-5	Cyanide, Total	0.0020	0.010	0.0020	mg/L	U		1	335.4
	Turbidity	9.39	0.500	0.160	NTU		1	1	180.1
	Total Suspended Solids	3.7	1.0	1.0	mg/L			1	SM 2540D
	pН	8.6			SU	J	HP	1	SM 4500 H+ B

1

INORGANIC ANALYSIS DATA SHEET GENERAL CHEMISTRY

Client Sample ID: WWTP-12212017 Lab Sample ID: 460-147524-1

Lab Name: TestAmerica Pittsburgh Job No.: 460-147524-1

SDG ID.:

Matrix: Water Date Sampled: 12/21/2017 14:30

Reporting Basis: WET Date Received: 12/21/2017 20:30

CAS No.	Analyte	Result	RL	MDL	Units	С	Q	DIL	Method
	Cyanide, Available	0.00036	0.0020	0.00036	mg/L	Ū		1	OIA-1677

Appendix C

Support Documentation

SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-138127-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-138127-1	WWTP-072817	Water	07/28/2017 1220	07/28/2017 1352

TestAmerica

CHAIN OF CUSTODY / ANALYSIS REQUEST

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3900 Fax: (732) 549-3679

Simple Name (Prince) Simple Name (Prince)
Othor Page

Initials:	Samples for Metal analysis which are ou	appropriate Project Manager and Departmen	\ \P	
Date: 7/28/17	Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.	e appropriate Project Mahager and Department Manager should be notified about the samples which were pH ad	Expiration Date:	Country of a reconstruction of the second (init).

Receipt Temperature and pH Log TestAmerica Edison

2					Number		Job Number:
Cooler #3:	Cooler #2:	Cooler #			lumber of Coplets:	Carrent Paris	ber:
	#2: °C	Cooler #1: 2 & 25	RANA BOOK SERVICE STATES	_		The Military Walls	100
C THE SEC	Ĉ.	255	CONVECTED			11-CANAGE SPECIAL IN CONE CASE	0
					7 Gun#	The state of the s	
Cooler #6:	Cooler#5	Copler #	COMPANIES CO.	Q.	56 #		
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6	0.	ć	CORRECTED			The Company of the Co	
				n.		The state of the s	
Cooler #9:_	cooler#8:	000er#75				THE STATE OF THE S	
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\$C	ကိ	Ö	WINDS AND			What is the second	
						THE PROPERTY OF THE	
The second second					STATE OF THE STATE	- Allegan Allegan	

	TALS Sample Number										
Ammonia COD	(pH<2)	1									
COD	(pH<2)			- 1							
Nitrate .	(pH<2)										
Metals .	(pH<2)	<2									
Hardness	(pH<2)										
Pest	(pH 5-9)										
QAM	(pH<2)				Ī		100				
Phenols	(pH<2)					N.			n = 1		d
Sulfide	(6 <hd)< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>H</td></hd)<>										H
TKN	(pH<2)										
Тос	(pH<2)									E	
Total Cyanide	(pH<2) (pH>12) (pH<2)	>/2	400								
Total Cyanide Total Phos Other	(pH<2)									6.7	
Other											
Other					Ī						

Preservative Name/Conc: Lot # of Preservative(s):______ Sample No(s). adjusted: rtment Manager should be notified about the samples which were pH adjusted. Volume of Preservative used (ml): **Expiration Date:**

Page 867 of 870

777 New Durham Road Edison, NJ 08817 Phone (732) 549-3609 Fax (732) 549-3679 TestAmerica Edison

estAmerica activosa in Environmenta, Tistina 460-138127 Chain of Custody **Chain of Custody Record**

Phone Phone E-Mail Institute (Sample Date Requested: Sample Date Sample Date Sample Date Time G=grab) Sample C=comp, One Sample Date Time G=grab) Time G=grab) Time G=grab) Sample Date Time G=grab) Time G=grab) Time G=grab) Time Time G=grab) Time Time G=grab) Time Time G=grab) Time Time Time Time G=grab) Time Decida, Nisiin D	400-43030	
Project # Sample C=Control C=Contr	E-Mad	Page
Pole Date Requested	degraw@lestamericainc.com	Page 1 of 1
PO #: Propect # Sample Date Time Gagrab Britain Anal. Code: X Analyzing Code: X	Actrecitations Required (See note): NELAP - New York	Job #: 460-138127-1
TAT Requested (days): TAT	Analusis Reminested	ode
WO # WO # Project # A6018542 SSOW# Sample Date Type Sample (C=Comp. Orwestebel.) Type G=grab) Br-Tsua, AAL) [Field Preservation Code: 7/28/17 12:20 Water Water Water		
WO # WO # Somple Date Time G=Comp. 12:20 7/28/17 Froyect # 46018542 Sample (C=Comp. Orwester.) Sample Date Time G=Comp. Orwester. 12:20 7/28/17 Fastern Water Water		D - Niric Acid P - NaZO4S E - NaHSO4 O - NaZSO3
WO # Proyect # 46018542 SSOW# Sample Date Time (C=Comp. Devented.) Type Second Development of Type Se		G - Amchlor S - H2SOA H - Astratic Acid T - TSP Dodecahydrate
SSOW# SSOW# Sample Date Time G=grab) BTT Table Type Seem Time G=grab) BTT Table TY28/17 T28/17 Eastern Water	(0)	1 - Ice J - Di Water
Sample Date Time Garab arthur Code: X/128/17 Eastern Water Water	4 to ea	K-EDTA L-EDA
Sample Date Time Gagrab) Br-Teuer, Anta) Essential Anta) Time Gagrab) Br-Teuer, Anta) Essential Anta) Essentia	N) GE	of con
7/28/17 12:20 Water Eastern Eastern	E bereilit bleit BM/BM mohet	Total Number of Special Instructions/Note:
7/28/17 12:20 Water Eastern	n Code: XX	×
8 01 870		1-
870		

Possible Hazard Identification		Sa	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	f samples are retained longer than 1	month)
Unconfirmed			Return To Client Disposal By Lab	Lab Archivo For	Months
Deliverable Requested 1, II, III, IV, Other (specify)	Primary Deliverable Rank: 1	gS	Special Instructions/OC Requirements		
Empty Kit Relinquished by:	Date:	Time:	Metho	Method of Shipmont	
Refinquished by:	Date/Time 7/31/17 1860	Company A E	Received by	8 to 1 1 8 de	(Maguo)
Reinquished by		Company	Rucchardth	Date Пте	Colmbany
Reinquished by	Date/Time.	Company	Received by	Ваје/Типе	Сотрапу
Custody Seals Intact: Custody Seal No.			Cooler Temperature(s) ⁹ C and Other Remarks		

Login Sample Receipt Checklist

Client: AECOM, Inc. Job Number: 460-138127-1

List Source: TestAmerica Edison

Login Number: 138127

List Number: 1 Creator: Lysy, Susan

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.5°C IR#8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: AECOM, Inc. Job Number: 460-138127-1

Login Number: 138127

List Number: 2

Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh List Creation: 08/01/17 06:03 PM

Question	Answer	Comment	
Radioactivity wasn't checked or is = background as measured by a survey neter.</td <td>True</td> <td></td> <td></td>	True		
The cooler's custody seal, if present, is intact.	True		
Sample custody seals, if present, are intact.	True		
The cooler or samples do not appear to have been compromised or ampered with.	True		
Samples were received on ice.	True		
Cooler Temperature is acceptable.	True		
Cooler Temperature is recorded.	True		
COC is present.	True		
COC is filled out in ink and legible.	True		
COC is filled out with all pertinent information.	True		
s the Field Sampler's name present on COC?	True		
There are no discrepancies between the containers received and the COC.	True		
Samples are received within Holding Time (excluding tests with immediate HTs)	True		
Sample containers have legible labels.	True		
Containers are not broken or leaking.	True		
Sample collection date/times are provided.	True		
Appropriate sample containers are used.	True		
Sample bottles are completely filled.	True		
Sample Preservation Verified.	True		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True		
Containers requiring zero headspace have no headspace or bubble is 6mm (1/4").	True		
Multiphasic samples are not present.	True		
Samples do not require splitting or compositing.	True		
Residual Chlorine Checked.	N/A		

FORM VII GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Edison Job No.: 460-138127-1

SDG No.:

Lab Sample ID: CCVIS 460-453192/2 Calibration Date: 08/01/2017 09:41

Instrument ID: CBNAMS9 Calib Start Date: 06/25/2017 08:54

Lab File ID: h22146.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.5193	0.4744		183	200	-8.7	20.0
N-Nitrosodimethylamine	Ave	0.5989	0.4132	0.5	69.0	100	-31.0*	20.0
Bis(2-chloroethyl)ether	Ave	1.271	0.9303	0.7000	14.6	20.0	-26.8*	20.0
Naphthalene	Ave	1.070	0.9917	0.7000	18.5	20.0	-7.3	20.0
Acenaphthylene	Ave	2.281	2.168	0.9000	19.0	20.0	-4.9	20.0
Acenaphthene	Ave	1.391	1.392	0.9000	20.0	20.0	0.0	20.0
Fluorene	Ave	1.532	1.490	0.9000	19.4	20.0	-2.8	20.0
4,6-Dinitro-2-methylphenol	Ave	0.1093	0.0975	0.0100	357	400	-10.8	20.0
Hexachlorobenzene	Lin2		0.3917	0.1000	21.2	20.0	5.9	20.0
Pentachlorophenol	Ave	0.1818	0.1947	0.0500	107	100	7.1	20.0
Phenanthrene	Ave	1.274	1.176	0.7000	18.4	20.0	-7.8	20.0
Anthracene	Ave	1.153	1.212	0.7000	21.0	20.0	5.1	20.0
Fluoranthene	Ave	1.156	1.244	0.6000	21.5	20.0	7.7	20.0
Pyrene	Ave	1.662	1.516	0.6000	18.3	20.0	-8.7	20.0
Benzo[a]anthracene	Ave	1.371	1.287	0.8000	18.8	20.0	-6.1	20.0
Chrysene	Ave	1.529	1.585	0.7000	20.7	20.0	3-6	20.0
Benzo[b]fluoranthene	Ave	1.501	1.162	2110	15.5	20.0	(-22.6*)	20.0
Benzo[k]fluoranthene	Ave	1.623	1.837	0.7000	22.6	20.0	13.2	20.0
Benzo[a]pyrene	Ave	1.203	1.203	0.7000	20.0	20.0	0.0	20.0
Indeno[1,2,3-cd]pyrene	Ave	1.355	1.502	0.5000	22.2	20.0	10.8	20.0
Dibenz (a, h) anthracene	Ave	1.103	1.160	0.4000	21.0	20.0	5.2	20.0
Benzo[g,h,i]perylene	Ave	1.300	1.395	0.5000	21.5	20.0	7.3	20.0
Nitrobenzene-d5	Ave	0.3492	0.3209		368	400	-8.1	20.0
2-Fluorobiphenyl	Ave	1.529	1.463		383	400	-4.3	20.0
2,4,6-Tribromophenol	Ave	0.3041	0.3919		516	400	28.9*	20.0
Terphenyl-d14	Qua		0.7071		349	400	-12.9	20.0

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Edison Job No.: 460-138127-1

SDG No.:

Batch Number: 453286 Batch Start Date: 08/01/17 13:10 Batch Analys

Batch Method: SM 4500 H+ B Batch End Date: 08/01/17 15:42

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	SampleTemp	pHRead1	pHRead2
CCV 460-453286/1		SM 4500 H+ B		20 mL	20.1 Celsius	7.05 SU	7.04 SU
MB 460-453286/2		SM 4500 H+ B		20 mL	20.5 Celsius	6.02 SU	5.99 SU
LCSSRM 460-453286/3		SM 4500 H+ B		20 mL	20.2 Celsius	7.55 SU	7.53 SU
460-137823-A-2 DU		SM 4500 H+ B	Т	20 mL	18.9 Celsius	7.96 SU	7.97 SU
CCV 460-453286/11		SM 4500 H+ B		20 mL	20.1 Celsius	7.04 SU	7.03 SU
460-138127-D-1	WWTP-072817	SM 4500 H+ B	Т	20 mL	19.4 Celsius	8.17 SU	8.16 SU
CCV 460-453286/20		SM 4500 H+ B		20 mL	20.0 Celsius	7.04 SU	7.03 SU

Lab Sample ID	Client Sample ID	Method Chain	Basis	WTPHLCS 00020	A selection of
CCV 460-453286/1	*	SM 4500 H+ B			
MB 460-453286/2		SM 4500 H+ B			
LCSSRM 460-453286/3		SM 4500 H+ B		20 mL	
460-137823-A-2 DU		SM 4500 H+ B	Т		
CCV 460-453286/11		SM 4500 H+ B			
460-138127-D-1	WWTP-072817	SM 4500 H+ B	T		
CCV 460-453286/20		SM 4500 H+ B			Table 1

	Batch Notes
pH Buffer 1 ID	Buffer 1.68 Ricca/2604072 exp:03/31/18
pH Buffer 2 ID	Buffer 4.00 Orion/910104 exp;10/31/18
pH Buffer 3 ID	Buffer 7.00 Fisher/167801 exp:12/30/18
pH Buffer 4 ID	Buffer 10.00 Fisher/165150 exp:08/30/18
Instrument ID	pH meter : A

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed this reagent.

SM 4500 H+ B

Page 862 of 870

SAMPLE SUMMARY

Client: AECOM, Inc. Job Number: 460-138700-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
480-138700-1	WWTP-080717IN	Water	08/07/2017 1300	08/07/2017 1713
460-138700-2	WWTP-080717	Water	08/07/2017 1305	08/07/2017 1713

TestAmerica 1

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3900 Fax: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING	CHAIN	CHAIN OF CUSTODY / ANALYSIS REQUEST	ALYSIS RE	EQUEST	Page	e of)
Name (for report and invoice)	Sampl	Samplers Name (Printed)		Site/Project Identification	KTON MG	d c
Company AFCOM	P.O.#	60138262	C00	State (Location of site): NJ:	NY X	¥ 8:.}
Address 125 B. 111 SI	Analysis Tur Standard	Analysis Turneround Time Standard	ANALYSIS REQUESTE	ANALYSIS REQUESTED (ENTER 7: BELOW TO INDICATE REQUEST)		LAB USE ONLY Project No:
City Ven You's State	Rush Charg	s Authorized For:				Job No:
Phone 70 377 Fax	1 Week	Week Clay Clay				158700
ample ide	Date Time	Matrix Cont.				Sample Numbers
WWT P-02 9717IN	3-7-17 130G	(SW)				7
tp-0	8-7-11 13 25 0 ~	X 8 40				4
460-1387G	460-138700 Chain of Custody			1-Day		
				RUSH		
Preservation Used: 1 = ICE, 2 = HCI, 3 = H ₂ SO ₄ , 4 = HNO ₃	4. 4 = HNO ₃ 5 = NaOH	aOH Soil:				
6 = Other, 7 =	7 = Other	Water:				
Special Instructions				Wa	Water Metals Filtered (Yes/No)?	:s/No)?
Relinquished by Company	A been	Date / Time	Received by	MAS	Company	
Relinquished by Company 2)	ny	Date / T	Received by 2)		Company 8/1/1	7
Relinquished by Company	ny	Date / Time	Received by	HI THE BOOK	Company	13/13
			3)	H		110
Relinquished by Company 4)	'ny	Date / Time	Received by 4)	2.90 40	Company	
Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticult (PH-0200), Rhode Island (132).)28), New York (1	1452), Pennsylvania (68-522), Conr	necticult (PH-0200), Rho	de Island (132).	TAL - 0016 (0715)

Massachusetts (M-NJ312), North Carolina (No. 578)

TAL - 0016 (0715)

Preservative Name/Conc.:

Lot # of Preservative(s):

Sample No(s). adjusted:

If pH adjustments are required record the information below:

Initials:	Samples for Metal analysis which
- Date: 8/7/7	mples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analy
	prior to analysis

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Expiration Date:

Volume of Preservative used (ml):

TestAmerica Edison Receipt Temperature and pH Log

						TALS Sample Number		Cooler#85	coder#12		Number of Coolers:	Job Number:
						(pH<2)	Ammonia			ANN		139700
						(PH<2)	COD	-C	-c 29·c	CORRECTED		00
						(pH<2)	Nitrate Nitrite					
						(pH<2)	Metals .	9	ο - Ω •		R Sin#	
						(pH<2)	Hardness	Cooler#6	Gooler#4	ဂ္ဂ	d (Vecelo
						(PH 6-9)	Pest		i d	Cooler Temperat	10	vecelor remperature and bu Log
						(pH<2)	EPH or QAM	6	6	er Tempera		
						(pH<2)	Phenols			tures	V.,	ומ אח ר
						(pH>9)	Sulfide	Q () <u>(</u> 2			ç
						(pH<2)	TKN	Cooler#9:	Gooler#7		Ĺ	
				1		(pH<2)	TOC	ċ c	် ငံ	MANA		
						(pH>12)	Total Cyanide Total Phos	6		CORRECTED		
		111				(pH<2)	otal Phos					
							Other					
							Other					

Client: AECOM, Inc.

Job Number: 460-138700-1

Login Number: 138700 List Source: TestAmerica Edison

List Number: 1 Creator: Lysy, Susan

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.9°C IR#9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Client: AECOM, Inc.

Job Number: 460-139137-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-139137-1	WWTP-081417	Water	08/14/2017 1535	08/14/2017 1721

TestAmerica

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3900 Fax: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING	CHAIN	CHAIN OF CUSTODY / ANALYSIS REQUEST	NALYSIS RE	QUEST	D a	Page / of (
Name (for report and invoice)	Sa	Samplers Name (Printed)	Sit	Site/Project Identification		
MODA! LOSINA!		11/47 14.5	2 V	AT. 0401 DISO 101	100	JON 11111
Company A B (O M)	<u> </u>	501273X3	Re	State (Location of site): NJ:	SPOR DK	Other:
		Analysis Turnaround Time	ANALYSIS REQUESTED	ANALYSIS REQUESTED (ENTER %. BELOW TO INDICATE REQUEST)		LAB USE ONLY
25 Broad Street)			Project No:
-	State Wy Rus	Rush Charges Authorized For: 2 Week	260			Job No:
N Kar			81			139137
112 311 8121				-		, , ,
Sample Identification	Date Ti	Time Matrix Cont.	<i>V'8</i>			Sample Numbers
LIYIRO-DIWM	2/14/17 1535	5 A C	X	72		1
	_				-	
1.Day	A Day		460-130	460-139137 Chain of Custody		
R				-	_	
Preservation Used: $1 = ICE$, $2 = HCI$, $3 = H_2SO_4$, $4 = HNO_3$, $5 = NaOH$	SO ₄ , 4 = HNO ₃ , 5 =	= NaOH Soil:				
6 = Other,	7 = Other	Water:				
Special Instructions				Water Me	Water Metals Filtered (Yes/No)?	Yes/No)?
Relinquished by Con	Company	Date / Time	Received by	Company	any	7
man A	AErun	811/1/1/1721	1 7	i day	五大	NAISON -
Relinquished by Con	Company	Date / Time	Received by	/// Company	аћу	2//2
2)			2)	1/2		E14110
Relinquished by Con	Company	Date / Time	Received by	Company	any	1
		_	3)			45
Relinquished by Con	Company	Date / Time	Received by	Company	any	11
4)			4)			

Massachusetts (M-NJ312), North Carolina (No. 578)

Laboratory Certifications:

New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut

Initials:

Preservative Name/Conc.:

Sample No(s). adjusted:

itials:	Samples for
B	r Metal analys
	sis which are c
	out of compliar
Date:	nce must be a
41/6	cidified at leas
4	st 24 hours pri
	Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Lot # of Preservative(s):

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Volume of Preservative used (ml):

Receipt Temperature and pH Log TestAmerica Edison

		د
		Job Number:
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					IALS sample number		Cooler#3: 7. 2. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
					(5×Hd)	Ammonia	
		30			(pH<2)	COD	6 6 6
			7		(pH<2)	Nitrate Nitrite	
					(pH<2)	Metals.	0 0 0
					(pH<2)	Hardness	Cooler#5:
	·				(PH 6-9)	Pest	
					(pH<2)	EPH or QAM	c c c
					(pH<2)	Phenois	
		E 1			(PH>9)	Sulfide	O O O
					(pH<2)	TKN	Cooler#9: Cooler#9:
					(pH<2)	100	<u>ದೆ ದ</u> ೆ. ರ
					(pH>12)	Total Cyanide	ငံ ငံ့
					(pH<2)	Total Cyanide Total Phos	
					1	Other	
						Other	

Page 109 of 110

Client: AECOM, Inc. Job Number: 460-139137-1

List Source: TestAmerica Edison

Login Number: 139137

List Number: 1 Creator: Lysy, Susan

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.5°C IR#9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is 6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Client: AECOM, Inc. Job Number: 460-139201-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-139201-1	WWTP-081517	Water	08/15/2017 1500	08/15/2017 1700

TestAmerica

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3900 Fax: (732) 549-3679

CHAIN OF CUSTODY / ANALYSIS REQUEST

4)	Relinquished by Company		Relinquished by Company	Helinquished by Company Arcon	ctions	6 = Other, 7 = Other	Preservation Used: $1 = ICE$, $2 = HCI$, $3 = H_2SO_4$, $4 = HNO_3$, $5 = NaOH$					NALD-03 1211	Sample Identification -Date Time	1268 11 8 717	Fav	State NY	4 5		ECOL	Fustre
Date / Time Heceived by	Date / Time Received by	2)	Date / Time Received by	7 /15/14 / 700 1) Un		Water:	aOH Soil:					8	Matrix Cont.	X Y LOW EX	50	Authorized For:			60137363	Brat tate
Company	Company		Company	Company	Water Metals Filtered (Yes/No)?			460-139201 Chain of Custody										ANALYSIS REQUESTED (ENTER X: BELOW TO INDICATE REQUEST)	AS DEC SE	Corman (1: K10)
		16279C		6d	ered (Yes/No)?		S	100	7.				Numbers Numbers		20 No.		Project No:	LAB USE ONLY	Other:	MOP

Massachusetts (M-NJ312), North Carolina (No. 578)

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

TAL - 0016 (0715)

Initials: Date: 8/14/11	(· · · · · · · · · · · · · · · · · · ·
	lev 4. 06/09/2014
Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.	
The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.	
eservative(s): Expiration Date:	Lot # of Preservative(s):

Job Number:	139201	Ĕ			Receipt Temperature and pH Log	Temperature and p	rature a	nd pH L	9						
lumber of Coolers:				7 0 1 1	@ 	oler Te	Cooler Temperatures	8 8					The state of the s	77	
Cooler #1	, . <u> </u>	O. J. C.		0 Q		က <u>ီ</u> ကို			0 C C 000		EN PARTIES CO.	°C °C			
Cooler #3	0	ć	a a managed of 1	cooler#6	oler#6	റ്	O.		Cool	oler#9:	Ĉ	ငံ			1
	Ammonia	COD	Nitrate Nitrite	Metals	Hardness	Pest	EPH or QAM	Phenols	Sulfide	TKN	тос	Total Cyanide Total Phos	Total Phos	Other	Other
TALS Sample Number	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH 5-9)	(pH<2)	(pH<2)	(pH>9)	(pH<2)	(pH<2)	(pH>12)	(pH<2)		1
															•
Sample No/s)	adiusted														
Sample No(s). adjusted:	adjusted:														

Client: AECOM, Inc. Job Number: 460-139201-1

List Source: TestAmerica Edison

Login Number: 139201

List Number: 1

Creator: Meyers, Gary

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or ampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.6 ° C IR #9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	
here are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is 6mm (1/4").	True	
fultiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Client: AECOM, Inc.

Job Number: 460-140857-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-140857-1	WWTP-091317	Water	09/13/2017 1430	09/13/2017 1750

TestAmerica

CHAIN OF CUSTODY / ANALYSIS REQUEST

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING	5				Page	Page / of /
Name (for report and invoice)	S	Samplers Name (Printed)	ie (Printed)	Site/Project Identification		0,5
Company		P.O.#		State (Location of site):	NX: C	1
AFCON)	50137	009-5262109			
١		Analysis Tumeround Time	ind Time	ANALYSIS REQUESTED (ENTER "X: BELOW ">" "" "ATE REQUEST)		LAB USE ONLY
165 Broad Sliet		Standard				Project No:
York	State V Y R	Rush Charges Authorized For:			<u> </u>	7601BC 42 Job No:
1		Week A	de y 60	YOU	140	140 657
Sample Identification	Date	Time Matrix	No. of Cont.		•	Sample Numbers
WWTP-09517	11-1/51/6	171730 6h	× ~			
						,
				460-140857 Chain of Clinical		
				Apolisin of Custody		4
Preservation Used: 1 = ICE, 2 = HOI, 3 =	3 = H ₂ SO ₄ , 4 = HNO ₃ 5	5 = NaOH	Soil:			
6 = Other	7 = Other		Water: 3			
Special Instructions					Water Metals Filtered (Yes/No)?	No)?
Relinquished by Co	Company A 12 cent	1/6	11/2/1/1750	Received by South	Company 9/	F/10/14
Relinquished by Co	Company		Date / Time	Received by	Company	22
			-	2)		
slinquished by	Company		Date / Time	Received by	Company	
			_	3)		
Minquished by	Company		Date / Time	Received by	Company	
4)		Moss Ved. (444ED)	4)			

Massachusetts (M-NJ312), North Carolina (No. 578)

Q7°C TA 49 NOCS

of

Page

Receipt Temperature and pH Log

40 857

Job Number:

TestAmerica Edison

Other Total
Cyanide Total Phos Other (pH<2) (pH>12) (pH<2) **T**0C Cooler.#7: Cooler#9 Cooler #8; (pH<2) TKN Volume of Preservative used (ml): Phenols Sulfide (pH>9) (pH<2) Cooler Temperatures EPH or (PH<2) If pH adjustments are required record the information below: (pH 6-8) Pest Cooler #4: Metals Hardness (pH<2) (pH<2) Nitrate Nitrite (pH<2) ç (pH<2) COD Preservative Name/Conc.: Sample No(s). adjusted: Ammonla (pH<2) Cooler #2: Cooler #3: TALS Sample Number

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted. Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Expiration Date:

Date: 01/13/2017

EDS-WI-038, Rev 4, 06/09/2014

Lot # of Preservative(s):

Initials:

Client: AECOM, Inc.

Job Number: 460-140857-1

Login Number: 140857

List Number: 1

Creator: Villanueva, Angelica P

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or ampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.7°C IR9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: AECOM, Inc.

Job Number: 460-140900-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-140900-1	WWTP-091417	Water	09/14/2017 1320	09/14/2017 1407

TestAmerica

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3900 Fax: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING Name (for report and invoice) Company A E (or Company A E (or Short Shirt State) City New York Phone 2 1 2 377 Fax State Sample Identification What TP-691417	ate V	CHAIN OF CUSTODY / ANALYSIS REQUEST Samplers Name (Printed) Dr. (a) P. O. # P. O. # Analysis Turnaround Time File Standard 1 Week 1 Week Other 24 Aout 100 Other 24 Aout 100 Other 24 Aout 100 Other 25 Aout 100 Other 26 Aout 100 Other 26 Aout 100 Other 26 Aout 100 Other 27	State (Location of site): NJ: Regulatory Program: ANALYSIS REQUESTED (ENTER 7: BELOW TO MOICHTE REQUEST)	Page of A NY: S Other: DKQP: DKQP: DKQP: Job,No: Job,No: Job,No: Sample Numbers
	¥ &		460-140900 Chain of Custody	
Preservation Used: 1 = ICE, 2 = HC, 3 = 6 = Other Special Instructions	=HC), 3=H ₂ SO ₄ , 4=HNO ₃ , 7=Other	5 = NaOH Soil: Water: کُر	Water M	Water Metals Filtered (Yes/No)?
	Company Company	Date / Time Rec 9 //4/77 / 40 P Date / Time Rec	Received by Juny Company Received by Company Company Company Company	1/4/18 B/14/18
Relinquished by C:	Company	Date / Time Rec	Received by Company	bany
Relinquished by C.	Company	Date / Time Rec	Received by Company 4)	bany
Laboratory Certifications: New Jersey (12028), New Massachusetts (M-NJ312), North Carolina (No. 578)	(12028), New Y lina (No. 578)	ork (11452), Pennsylvania (68-5	New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). (78)	Rhode Island (132). TAL-0015 (0715) TAL-0015 (0715)

Preservative Name/Conc.: Sample No(s). adjusted:

Lot # of Preservative(s):

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted. Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Expiration Date:

Volume of Preservative used (ml):

7

Date:

Receipt Temperature and pH Log TestAmerica Edison

		rs) C	KINE STATE		Number of Coolers:	Job Number:	
Cooler#3:	Cooler#2	©ooler#1	Y. 101 - 11 11 11 11 11 11 11 11 11 11 11 11		Coolers:	7	
C	10	0.70	WANTED ST		1	170	
ů		0.7°c	COMMECTED			70/00	9
					IRG		
Cooler#6:	Cooler#5:	Cooler#4:	Way and the	<u>(</u> 2)	JR Gun#		
	25	18 P. 18	RAW	Cooler Temperatures		>	
Cooler#9:	Cooler#8:	Cooler #7:					•
C C	c C	Ĉ.	RAW CORRECTED				
	S.						
17	*		ALC: N				

							TALS Sample Number		Spoler#1: 10/6//G Cooler#2: 7C Cooler#3:	
			H				(pH<2)	Ammonia	0 e /c	, awa
							(pH<2)	COD	07.0	COMMECTED
							(pH<2)	Nitrate Nitrite		
							(pH<2)	Wetals	0 0 0	
							(pH<2)	Hardness	Cooler#5: Cooler#6:	
							(pH 5-9)	Pest		Cooler Lemperatures
							(pH<2)	EPH or QAM	ි <u>කි</u> දිරි සි	er rempera
							(pH<2)	Phenols		ures
							(pH>9)	Sulfide	0-10-10	
	E						(pH<2)	TKN	Cooler #8: Cooler #9:	
			,				(pH<2)	TOC	ദ് റ് റ്	WAN.
					4		(pH>12)	Total Cyanide	ල ර ර	CORRECTED
			- I				(pH<2)	Total Cyanide Total Phos		
								Other	i í	Table 1
								Other		

Client: AECOM, Inc.

Job Number: 460-140900-1

Login Number: 140900

List Number: 1 Creator: Lysy, Susan List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.7°C IR#9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Client: AECOM, Inc.

Job Number: 460-141437-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-141437-1	WWTP-09222017	Water	09/22/2017 1330	09/22/2017 1534

[estAmerica

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3900 Fax: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING	CHAIN OF CUSTODY / ANALYSIS REQUEST	REQUEST	Page of
Name (for report and invoice)	Samplers Name (Printed)	Site/Project Identification	1
Company ECOM	008-59862109#OB	State (Location of site): NJ: Regulatory Program:	NY: L Other:
Address 125 Broad Strust	Analysis Turnaround Time AMALYSIS REQ	AVALYSIS REQUESTED (ENTER "K: BELOW TO INDICATE REQUEST)	LAB USE ONLY Project No:
City Wen 8, K State NV	s Authorized For:		/ Job No:
Phone 7/2 377 371/			1/2h/h)
ă I	atrix Cont. B77		Sample Numbers
Mai	スペンプリジ		\
450.141437 Chain of Custody	stody		
		1-Day	
		RUSH	
		-	
Preservation Used: 1 (CE) (2=HG), 3=H,5O., (=H)yO.	EHNO, (5 = NAOH) Soll:		
6 = Other, 7 = Other	Water:		
Special Instructions	74		Water Metals Filtered (Yes/No)?
Relinquished by Recompany Company ARCOM	Date / Time Received by 9/22/17 15 3 4 1)	Ord C	ompany 212-117 18:34
Relinquished by Company 2)	Date / Time Received by	y C Company	any
Relinquished by Company	Date / Time Received by	y Company	any
3)	3)		
Relinquished by Company 4)	Date / Time Received by	y Company	any
Laboratory Certifications: New Jersey (12028), New	New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).	onnecticut (PH-0200), Rhode Isl	
Massachusetts (M-NJ312), North Carolina (No. 578)	Nock	# ×	7.9

TestAmerica Edison

Receipt Temperature and pH Log

	TALS Sample Number									
Ammonia	(pH<2)									
COD	(pH<2)									
Nitrite	(pH<2)									
Metals	(pH<2)	5								
Hardness	(pH<2)									
Pest	(pH 5-9)									
QAM or	(pH<2)					(3)				
Phenois	(pH<2)									
Phenols Sulfide	(6 <hd)< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></hd)<>									
TKN	(pH<2)								V 1	
Тос	(pH<2)									
Total Cyanide	(pH>12) (pH<2)	1/2		T.						
Total Cyanide Total Phos Other	(pH<2)									
Other										
Other							- 14			

Preservative Name/Conc.; Sample No(s). adjusted: Lot # of Preservative(s): The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted. Volume of Preservative used (ml): Expiration Date:

Client: AECOM, Inc.

Job Number: 460-141437-1

Login Number: 141437

List Number: 1 Creator: Lysy, Susan List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.9°C IR#9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Client: AECOM, Inc.

Job Number: 460-141835-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-141835-1	GAC 3-20170928	Water	09/28/2017 1490	09/28/2017 1500
460-141835-2	GAC 2-20170928	Water	09/28/2017 1335	09/28/2017 1500
460-141835-3	WWTP-20170928	Water	09/28/2017 1405	09/28/2017 1500

301 Alpha Drive lestHimerica Fittsburgh

Chain of Custody Record

116510

[estAmerica

Special Instructions/QC Requirements & Comments: Address: 125 Bood & City/State/Zip: New York

Phone: (2:12) \$77-871 Comments Section if the lab is to dispose of the sample. Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Company Name: AECOM W- TP- 20 170925 6AC2-70170975 GAE 3-20170928 ite: CI Hu MCP Pittsburgh, PA 15238 Phone: 412.963.7058 60131363-600 Sample Identification **Client Contact** Ř Fax: 412.963.2470 A add DINHMORY SHAOH; 6= Other Run only GAC3-20170928 - hold other Z samples pendy ses Its Company: Custody Seal No.: Company 1/26/17 HOZ 00 H 11/32/6 Tel/Fax: (というコー874) Company: 4/18/17 13SS Project Manager: Robard For he Sample Poison B CALENDAR DAYS Regulatory Program: Dw Minpes Rcra Coher MOOO TAT if different from Below Analysis Turnaround Time Sample 2 days 1 week 2 weeks Sample D 9 a Unknown WORKING DAYS Date/Time: /% Received by: Date/Time: ٤ ξ 8 Site Contact: Polar to the Flitered Sample (Y/N) Lab Contact: Knyhn Deferen Received in Laboratory by: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return to Client AUSH Cooler Temp. (°C): Obs'd: Spisposal by Lab Date: 9/76/2017 Company: Archive for_ Date/Time: Date/Time: Date/Time Lab Sampling: For Lab Use Only: Sampler: COC No: herm ID No エ
い
し
つ Job / SDG Nox Walk-in Client: THE LEADER IN ENVIRONMENTAL TESTING TestAmerica Laboratories, Inc. HOLD Months Sample Specific Notes: ည်လ TAL-8210 (0713)

Relinquished by:

NO CZ

0.90 I

relinguished by:

Custody Seals Intact:

dinquished by

Initials:	
1	1

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted. Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

TestAmerica Edison Receipt Temperature and pH Log

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	1	•	

Lot # of Preservative(s):	Preservative Name/Conc.:	Sample No(s). adjusted:									TALS Sample Number				Job Number:
ervative(s)	ame/Conc.	. adjusted	If pH ad								(pH<2)	Ammonia			
			If pH adjustments are required record the information below:								(pH<2)	COD	6.676		100
			are requi								(pH<2)	Nitrate Nitrite	2 / 5		B115 And 1
			red recor		7						(pH<2)	Metals		Risin	The second secon
			the info								(pH<2)	Hardness	Cooler 46 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	# Goollers lemperatures	The same being
	Volu		mation b	THE S							(pH 5-9)	Pest	0	oler Ten	0
	Volume of Preservative used (ml):		elow:								(pH<2)	EPH or	i de	empera	Company of the latest and the latest
Expira	servative (PIII					(pH<2)	Phenois		peratures	
Expiration Date:	used (ml):										(pH>9)	Sulfide	0.30		- 10 mm and
									*		(pH<2)	TKN	ooler #8		f
											(pH<2)	T 00			
											(pH>12)	Total Cyanide	COO		
											(pH<2)	Total Phos	eve		
												Other			
												Other			

Client: AECOM, Inc.

Job Number: 460-141835-1

Login Number: 141835

List Number: 1 Creator: Lysy, Susan List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.9°C IR#9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is 6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Client: AECOM, Inc.

Job Number: 460-143064-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-143064-1	GAC1-10162017	Water	10/16/2017 1430	10/16/2017 1604
-460-143064-2	GAG2-10162017		10/16/2017 1435	10/16/2017 1604
460-143064-3	GAC3-10162017	Water	10/16/2017 1440	10/16/2017 1604
460-143064-4	OWS1-10162017	Water	10/16/2017 1455	10/16/2017 1604
460-143064-5	WWTP-10162017	Water	10/16/2017 1500	10/16/2017 1604

Massachusetts (M-NJ312), North Carolina (No. 578)

TestAmerica

CHAIN OF CUSTODY / ANALYSIS REQUEST

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3900 Fax: (732) 549-3679

HE LEADER IN ENVIRONMENTAL TESTING					Page / of /
lame (for report and invoice)	Samplers N	ame (P	Site	Site/Project Identification	9
ompany	P. O. #			<u></u>	Other:
スたいつか	601	137863-600		Regulatory Program: NYD EC NYSM	NYSME BKOP:
iad Street	(6' Flour Standard	rmaround Time	ANALYSIS REQUESTED (ENTER "X: BELOW	TO INDICATE REQUEST)	LAB USE ONLY Project No:
"HyNen York State NY		s Authorized For:		1-Day	Job No:
hone Fax Fax	1 Week	other 7 day 2	GL-	RUSH	143064
mple Identification	Date Time	Matrix Cont			Sample Numbers
5AC1-10162017 101	10/16/17 1430	2 43			,
962-10162017	_	94			ce
(3-10162017	6771 -1/01/0	20			W
51-10162017	10/16/17 14.75 6 W	6 m 3 x			7
TP-10162017	0/10/17 1500 CF	\Box	- (οĮ

			460	460-143064 Chain of Custody	
reconvenient liest: 1 - DE 9 - HO 3 - H SO 4 -	- NOOH				
6 = Other, 7 = Other		Water:			
special Instructions 1.7° C I	R#9	NO C.S.		Water Metals Filtered (Yes/No)?	red (Yes/No)?
lelinquished by Company AFCON	On	Date / Time 10/1/01/	Received by	5	
lelinquished by Company		Date / Time	Received by	O Company	
telinquished by Company		Date / Time	Received by	Company	
			3)		
elinquished by Company		Date / Time	Received by	Company	
handar Cadifications Nam Jacob (19000)	New York (1	(ASO) Dennsylvania	4) Connex		9
hander Codiffications. Now Japan (1999)	New York (1	1452), Pe	nnsvivania /	4)	4) April (68-522) Connecticut (PH-0200) Rho

Preservative Name/Conc.:
Lot # of Preservative(s):

Sample No(s). adjusted:

Date: ____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.
Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Volume of Preservative used (ml):

Expiration Date:

TestAmerica Edison Receipt Temperature and pH Log

Job Number: 143064

					ALS sample number		Gooler#3:	Number of Cooleys
					(pri<2)	Ammonia	0 (1) (2)	
					(DHSZ)	COD	0.00	
					(bH<2)	Nitrate Nitrite	2	
					(pH<2)	Metals	0.0	IX QUI
					(pH<2)	Hardness		0
					(pH 5-9)	Pest		Coolera (emperati
					(pH<2)	EPH or		ember
					(pH<2)	Phenoks	ا د د	
					(pH>9)	Sulfide		
)			(pH<2)	TKN	Coder#6	
					(pH<2)	Тос	7 10 10 10 10 10 10 10 10 10 10 10 10 10	
					(pH>12)	Total Cyanide	9; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0;	
					(pH<2)	Total Cyanide Total Phos Other	1	
						Other		
						Other		¥.1

Client: AECOM, Inc.

Job Number: 460-143064-1

Login Number: 143064

List Number: 1 Creator: Jara, Kelly D List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: AECOM, Inc.

Job Number: 460-143732-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-143732-1	WWTP-10262017	Water	10/26/2017 1430	10/26/2017 1607

TestAmerica

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3900 Fax: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING	CHAIN OF CUSTODY / ANALYSIS REQUEST	YSIS REQUEST Page C of
Name (for report and invoice) HODE + Fu-Stno-	Samplers Name (Printed) Ute	Site/Project Identification
3	F.O.# 60137363-600	site
Address 125 B, 121 S1, ext		TE REQUEST)
CITY NOW TO State N.	Rush Charges Authorized For:	/ PANKAOK /
Phone 212 377 872 (other 27 hw/	12/24
	Date Time Matrix Cont.	Sample
MWTP-10262017	10/2011/19/00 W 3 X	
	1-Day	And Andrews of Clastical Control of Clastical Contr
	RUSH	460-143/32 Chain of Custody
Freservation Osci. $1 = 10c$, $2 = 10c$, $3 = 12004$, $4 = 1000$	Water:	
Special Instructions		Water Metals Filtered (Yes/No)?
Relinguished by Company A E Co	Date / Time	Received by Company 1) Company Company THE Edison
Relinquished by Company	/Time	Received by U/ Company' /CO7
Relinquished by Company	Date / Time Rec	Received by Company / / / / /
3)]	41197101
Relinquished by Company	Date / Time Rec	Received by Company
4)	1 4)	
Laboratory Certifications: New Jersey (12028),	New York (11452), Pennsylvania (68-522), Connecticut (PH-0200)	22), Connecticut (PH-0200), Rhode Island (132). 7AL - 0016 (0715)
Massachusetts (M-NJ312), North Carolina (No. 578)	578)	0110 THO V

Preservative Name/Conc:

Sample No(s). adjusted:

Lot # of Preservative(s):_

Initials:	Samples for Metal analysis which are our
Date: (6/26/2	ples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Expiration Date:

Volume of Preservative used (ml):

THE LOCATION OF THE PARTY OF TH	me)di	
	(O3)E	TestA Receipt Tem
		TestAmerica Edison Receipt Temperature and pH Log
· (100)		H Log
	1	
		Pageof
	10/27/2	017

Job Number:

								TALS Sample Number		Cooper 1
								(pH<2)	Ammonia	
								(pH<2)	COD	3 3) D3
		7						(pH<2)	Nitrate Nitrite	
								(pH<2)	Metals *	
								(pH<2)	Hardness	girlig star coder star
								(pH 5-9)	Pest	
								(pH<2)	EPH or	100 s
								(pH<2)	Phenois	
			31					(6 <hd)< td=""><td>Sulfide</td><td>· · · · · · · · · · · · · · · · · · ·</td></hd)<>	Sulfide	· · · · · · · · · · · · · · · · · · ·
	5							(pH<2)	TKN	0014F #7
								(pH<2)	Тос	o c
			A					(pH>12)	Total Cyanide	
								(pH<2)	Total Cyanide Total Phos	
				4.	.2	-			Other	
						13			Other	

Client: AECOM, Inc.

Job Number: 460-143732-1

Login Number: 143732

List Number: 1 Creator: Lysy, Susan List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Client: AECOM, Inc.

Job Number: 460-143826-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-143826-1	WWTP-10272017	Water	10/27/2017 1215	10/27/2017 1339

TestAmerica

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3900 Fax: (732) 549-3679

CHAIN OF CLISTODY / ANALYSIS REQUEST

				Water:		7 = Other	6 = Other, 7 =
				Soil:	5 = NaOH	, 4 = HNO3	Preservation Used: 1 = ICE, 2 = HCl, 3 = H ₂ SO ₄ , 4 = HNO ₃ , 5 = NaOH
	7		00-140020 Cham of	8			
		stody	Manual Ma				
							Hoov
							BIG
							1-Day
1			X	343	1215 (10/17/11/1215 64 3	NW7P-10272917
Sample Numbers			BTL	Matrix Cont.	Time I	Date	Sample Identification
moch				24	Other		1278 272
1 08 20 V			30		2 Week	1	Phone Fax
Flojectivo:			260	Rush Charges Authorized For:	Rush Charges	ント	City NC State // V
LAB USE ONLY		ANALYSIS REQUESTED (ENTER 7: BELOW TO INDICATE REQUEST)	ANALYSIS REQUE	naround Time	Analysis Turnaround Time	Gin Floor	Address 125 1871 54 16.
DKQP:	SPOES	Regulatory Program: NYDEC		05137363 -600	C		Alz(or
Other:	NY:	State (Location of site): NJ:		01111	P.O.#		Company Area of the
	SP	Site/Project Identification		Samplers Name (Printed)	Samplers	Fursh,	Name (for report and invoice) $Robert$
Page of		-	7.100	000100.		9	THE LEADER IN ENVIRONMENTAL TESTING

Special Instructions				Water Metals Filtered (Yes/No)?
Relinquished by	Company	Date / Time	Received by \(\square \)	Company
nel	MECCA	10/2 Thry 13 39 1)	= or own	the disc
Relinquished by	Company	Date / Time	Received by	Company
2)			2)	10/2/19
Relinquished by	Company	Date / Time	Received by	Company (1)
3)			3)	851
Relinquished by	Company	Date / Time	Received by	Company
4)		-	4)	
Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticu	rsey (12028), New York (1	1452), Pennsylvania (I		t (PH-0200), Rhode Island (132).
Massachusetts (M-NJ312), North Carolina (No. 578)	Carolina (No. 578)			2000 7

Preservative Name/Conc.:

Lot # of Preservative(s):

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Expiration Date:

Volume of Preservative used (ml):

Initials: The second of the se	Samples for Metal analysis which are out of cor
Date: 10/27/7	Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

928th)	Receipt Temperature and pH Log		Pageof_
Tumber of Looking.	Rount S		
	Codler Tamparat (res		
	TOO IS NOT THE REAL PROPERTY.	Conferment Conferment	
	6 C C C C C C C C C C C C C C C C C C C	(a)	
Cabler #3	Crew Gorden's (8)	Sooter file	

		0.0			Go Copperation of the Copperation of the Copperatio	(Osoler Tampärat)	3. 3. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		(O, O, O)	Copler#7 Copler#8 Copler#8					
	Ammonia	COD	Nitrate Nitrite	Metals	Hardness	Pest	EPH or QAM	Phenois	Sulfide	TKN	Тос	Total Cyanide	Total Cyanide Total Phos	Other	Other
TALS Sample Number	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(PH 6-9)	(pH<2)	(pH<2)	(pH>9)	(pH<2)	(pH<2)	(pH>12)	(pH<2)		
												li			
	If pH adjustments are required record the information below:	stments	are requir	ed record	the infor	mation b	elow:				19				
Sample No(s). adjusted:	adjusted:														

Client: AECOM, Inc.

Job Number: 460-143826-1

Login Number: 143826

List Number: 1 Creator: Lysy, Susan List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-143908-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-143908-1	WWTP-10282017	Water	10/28/2017 1040	10/28/2017 1150

TestAmerica

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3900 Fax: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING	MUA	CHAIN OF CUSTODY / ANALYSIS REQUEST	IODY / AN	ALYSIS KI	-QUESI	סר	Page of
Name (for report and invoice)		Samplers Name (Printed)	Printed)	Sit	Site/Project Identification	los	
company AECOM		009-89668109#O	7363-60,		State (Location of site): NJ: Regulatory Program:	NY:	Other:
Address / L + Brush Street		Analysis Turnaround Time	Time 2	ANALYSIS REQUESTE	ANALYSIS REQUESTED (ENTER 7: BELOW TO INDICATE REQUEST)		LAB USE ONLY Project No:
Stat	\\ \ \\ \	Rush Charges Authorized For:			7		Job No:
- 377 8721		1 Week	2 hoa 2	3	RUS		143408
Sample Identification	Date	Time Matrix	Cont Bil		Hor		Sample
hinte-10282017	1	1063					
7 - 1 - 0 - 0 - 0 - 1	10,000		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				
				450-14390	460-143908 Chain of Custody		
Preservation Used: $1 = ICE$, $2 = HCI$, $3 = H2SO4$, $4 = HNO3$	O4, 4 = HNO3	5 = NaOH	Soil:				
6 = Other, 7	7 = Other		Water:				
Special Instructions					Water I	Water Metals Filtered (Yes/No)?	(Yes/No)?
Relinquished by Company A B	the con		Date / Time	Received by 1) χ_{e}		Company	
Relinquished by Company (2)	pany	Da		Received by	Com	Company	
Relinquished by Company	bany	Da	Date / Time	Received by	Соп	Company	
				3)			
Relinquished by Company	oany	Da	Date / Time	Received by	Соп	Company	
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Laboratory Certifications: New Jersey (12028),	2028), New 1	New York (11452), Pennsylvania (68-522),	ennsylvania (6	0	0200	Island (132).	TAL - 0016 (0715)
Massachusetts (M-NJ312), North Carolina (No. 578)	(No. 578)		0.80		IR49 NOC.S.	s,	

Preservative Name/Conc.:

Sample No(s). adjusted:

Lot # of Preservative(s):

Initials: 74	Samples for Metal analysis which ar
Date: 10/28/17	mples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Expiration Date:

Volume of Preservative used (ml):

TestAmerica Edison Receipt Temperature and pH Log

Cooler#3:	Cooler#2: *C	Cooler#1: <u>D</u> - ⊗ - c D - S	RAW.CORRECTED		Number of Cooks Attacks	Job Number: 143908
Cooler#60	*C Cooler #55-1999 *C *C	Cooler Cooler	CTED . 1911 (1911) SAW CORRECTED . 1957 (1911)	Cooler Temperatures		Coorder scriberating and but rog
Cooler #9:	Cooler #8:	Cooler #7:				
ငံ	റ്	റ്	RAW			
°C	ő	റ്	CORRECTED			

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrite (pH<2)	Metals (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	QAM (pH<2)	Phenols Sulfide (pH<2) (pH>9)	Sulfide (pH>9)	TKN (pH<2)	тос (рн<2)	Total Cyanide (pH>12)	Total TOC Cyanide Total Phos Other (pH<2) (pH>12) (pH<2)
											_		
											2		

Page _____ of ___

Client: AECOM, Inc.

Job Number: 460-143908-1

List Source: TestAmerica Edison

Login Number: 143908

List Number: 1 Creator: Jara, Kelly D

Radioactivity wasn't checked or is = background as measured by a survey meter. N/A Sample custody seals, if present, is intact. N/A Sample custody seals, if present, are intact. The cooler or samples do not appear to have been compromised or tampered with. Samples were received on ice. Cooler Temperature is acceptable. Cooler Temperature is acceptable. Cooler Temperature is recorded. COC is present. True COC is filled out in ink and legible. COC is filled out with all pertinent information. Is the Field Sampler's name present on COC? There are no discrepancies between the containers received and the COC. Samples are received within Holding Time (excluding tests with immediate HTS) Sample containers have legible labels. Containers are not broken or leaking. Sample collection date/times are provided. Appropriate sample containers are used. Sample bottles are completely filled. True Sample Preservation Verified. True Sample Preservation Verified. Containers requiring zero headspace have no headspace or bubble is <fm Frue Containers requiring zero headspace have no headspace or bubble is <fm> Frue Containers requiring zero headspace have no remove the compositing. True Samples do not require splitting or compositing. N/A Residual Chlorine Checked.</fm>	Question	Answer	Comment	
Sample custody seals, if present, are intact. The cooler or samples do not appear to have been compromised or tampered with. Samples were received on ice. True Cooler Temperature is acceptable. Cooler Temperature is recorded. True COC is present. COC is present. COC is filled out in ink and legible. True COC is filled out with all pertinent information. Is the Field Sampler's name present on COC? There are no discrepancies between the containers received and the COC. Samples are received within Holding Time (excluding tests with immediate HTs) Sample containers have legible labels. True Containers are not broken or leaking. Sample collection date/times are provided. Appropriate sample containers are used. Sample bottles are completely filled. True Sample Preservation Verified. True There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs Containers requiring zero headspace have no headspace or bubble is comm (1/4"). Multiphasic samples are not present. True Samples do not require splitting or compositing.		N/A		X (1)
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Sample bottles are completely filled. Sample Preservation Verified. True There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). Multiphasic samples are not present. True Samples do not require splitting or compositing. True	Sample collection date/times are provided.	True		
Sample Preservation Verified. True There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). Multiphasic samples are not present. True Samples do not require splitting or compositing.	Appropriate sample containers are used.	True		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs Containers requiring zero headspace have no headspace or bubble is <fmm (1="" 4").="" are="" compositing.="" do="" multiphasic="" not="" or="" present.="" require="" samples="" splitting="" td="" true<=""><td>Sample bottles are completely filled.</td><td>True</td><td></td><td></td></fmm>	Sample bottles are completely filled.	True		
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<6mm (1/4"). Multiphasic samples are not present. Samples do not require splitting or compositing. True		True		
Samples do not require splitting or compositing.		True		
	Multiphasic samples are not present.	True		
Residual Chlorine Checked. N/A	Samples do not require splitting or compositing.	True		
	Residual Chlorine Checked.	N/A		

SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-143938-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-143938-1	WWTP-10292017	Water	10/29/2017 1330	10/30/2017 1348
460-143938-2	WWTP-10302017	Water	10/30/2017 1240	10/30/2017 1348

<u>[estAmerica</u>

CHAIN OF CUSTODY / ANALYSIS REQUEST

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3900 Fax: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING		Page of
Name (for report and invoice)	Samplers Name (Printed)	Site/Project Identification
3	P.O.# 60/37362-600	
,	Analysis Turnaround Time ANALYSIS REGU	3517)
City A/p, State II/V	Standard Charges Authorized For:	Project No:
Phone Fax	2 Week	/(C3 9 x 8 / 1 / 1 / 2 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3
212 377	27h	
Sample Identification Date	Time Matrix Cont. 130	Sample
大数		
WWTP-10292017 6/24/17	1330 6 1 3 ×	
WWTO-10302017 10/80/17	17 1240 BW 3 X	4
7. 65		
- A		
Preservation Used: 1 = ICE, 2 = HCI, 3 = H ₂ SO ₄ , 4 = HNO ₃ , 5 = NaOH	5 = NaOH Soil:	460-143938 Chain of Custody
6 = Other, 7 = Other	Water:	
Special Instructions		Water Metals Filtered (Yes/No)?
Relinquished by Company At CM	10/30/17 (3 48 0)	Company
Relinquished by Company 2)	Date / Time Réceived by	[Company / / / / / / / / / / / / / / / / / / /
Relinquished by Company 3)	Date / Time Received by	Condpany 13:46
Relinquished by Company	Date / Time Received by	Company
4)	- 4)	1.1

Massachusetts (M-NJ312), North Carolina (No. 578)

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

Preservative Name/Conc.:

Volume of Preservative used (ml):

Sample No(s). adjusted:

Rev 4, 06/09/2014 Init		Lot # of Preservative(s):
Initials:	Samples for	nominista D
The state of the s	Samples for Metal analysis which are out of compliance must be acidified at least 24 hours	minet Manager and Deportment Manager sh
Date: 10/30/17	e must be acidified at least 24 hours prior to analysis.	Expiration Date:

	2	Job
	Number of Coolers:	Job Number:
Ω	C	
Cooler#1: // °C // / °C	3	
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- RA		143
င္		73
SAM " COMMECTED		143738
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Cooler ### cooler		Rec
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						TALS Sample Number	٠	Cooler #2:
						(pH<2)	Ammonia	o o o
						(pH<2)	COD	3. 7 3. 17 3. 17 3. 17
						(pH<2)	Nitrate Nitrite	
						(pH<2)	Metals .	
						(pH<2)	Hardness	Cooler #4
						(PH 5-9)	Pest	
						(pH<2)	EPH or	emperatures c .c .c
						(pH<2)	Phenok	atures
						(pH>9)	Phenols Sulfide	
						(pH<2)	TKN	Cooler #8: Cooler #9:
						(pH<2)	ТОС	RAW SA
						(pH>12)	Total Cyanide	C C C CORRECTE
\dagger) (pH<2)	Total Cyanide Total Phos	C C C C C C C C C C C C C C C C C C C
							os Other	
							Other	

Client: AECOM, Inc.

Job Number: 460-143938-1

Login Number: 143938

List Number: 1

Creator: Meyers, Gary

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.1 ° C IR #9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-144002-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-144002-1	WWTP-10312017	Water	10/31/2017 1230	10/31/2017 1429

TestAmerica THE LEADER IN ENVIRONMENT Name (for --८ 밁 ဋ A

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3900 Fax: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING	CHAIN O	CHAIN OF CUSTODY / ANALYSIS REQUES	LYSIS R	EQUEST		Page / of /
Name (for report and invoice)	Sample	(Printed			2	1 990
Company	P 0 #	, with		~]	NV: A	Other
DE COM		601373	63-600 A	K		DKQP:
	Analysis	rnaround Time	NALYSIS REQUEST	ANALYSIS REQUESTED (ENTER %; BELOW TO INDICATE REQUEST)		LAB USE ONLY
State		es Authorized For:				Project No:
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Phone 2/2 377 RAY	1 Week	other 78 7.1 Law				144002
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	3	460-144002 Chain of Custody	in of Custody		ec	
		-		30	K	
Preservation Used: 1 = ICE, 2 = HCl, 3 = H ₂ SO ₄ , 4 = HNO ₃ , 5 = NaOH	: HNO3, 5 = Na	aOH Soll:			-	
6 = Other, 7 = Other		Water:				
Special Instructions				Wat	Water Metals Filtered (Yes/No)?	d (Yes/No)?
Relinguished by Company			Receipted by		Company	
	3	1	Link	177	- 7	1
Relinquished by Company		Date / Time	Received by		.	
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3)		3))			de in
Relinquished by Company		Date / Time	Received by	0	Company	1600
4)		4)				<i>'</i> - <i>'</i> -

Massachusetts (M-NJ312), North Carolina (No. 578)

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

TAL - 0016 (0715)

Preservative Name/Conc.:

Lot # of Preservative(s):_

Sample No(s). adjusted:

Initials:
and the same of th

Date:

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Volume of Preservative used (ml):

Expiration Date:

TestAmerica Edison Receipt Temperature and pH Log

										TALS Sample Number		Cooler #3:	Cooler #2:	Coole	The second secon		Number of Coolers:	Job Number:
										er (pH<2)	Ammonia	r#3: 	#2:	Cooler#1: 16 °C	RAW			1
	-						1	_	-	1		ದೆ	ဂ	000	11		-	and
										(pH<2)	COD	င်	ဂံ	76 °C	CONNECTED	D.		100 2
			l si							(pH<2)	Nitrate Nitrite							
										(pH<2)	Metals						IR Gun #	
The adjustments are required forced the information below.										(pH<2)	Hardness	Cooler#6:	ooler#5:	Cooler#4:		Cooler Temperatures		
										(PH 6-9)	Pest				RAW	oler T	A	
										(pH<2)	EPH or QAM	Ĉ.	Ĉ	តំ	CONNECTED	empera	0	
										(pH<2)	Phenois				汉制是	atures		
-	4.5	9	10		160				3	(pH>9)	Sulfide	C	0					
										(pH<2)	TKN	ooler#9:	Coole #8:	Cooler #7:				
										(pH<2)	TOC	Cooler#9:	の記述を	77: 1	ICHRAW INT			
) = 1 b		(pH>12)	Total Cyanide	Ĉ	6	0	CONNECTED			
										(pH<2)	Total Cyanide Total Phos	900 C			The Part of the			
											Other	The Cabilians was						
											Other	· · · · · · · · · · · · · · · · · · ·				110		

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Client: AECOM, Inc.

Job Number: 460-144002-1

Login Number: 144002

List Number: 1

Creator: Meyers, Gary

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-144088-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-144088-1	WWTP11012017	Water	11/01/2017 1230	11/01/2017 1337

TestAmerica

CHAIN OF CUSTODY / ANALYSIS REQUEST

Phone: (Edison,	
(732)	New	-
(732) 549-3900	dison, New Jersey 08817	
Fax:	317	
(732)		
(732) 549-3679		
3679		

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Brian Tate		MOD
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	RUSH	
5 = NaOH Soil:		
Water:		
	Water Metals	Water Metals Filtered (Yes/No)?
Date / Time Received by	Company	2000
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Date / Time Received by	Company	
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Date / Time Received by	Ω 480-1	480-144088 Chain of Custody
4)		
11452), Pennsylvania (68-522), Co	nnecticut (PH-0200), Rhode Island (132).	1 (132). TAL - 0016 (0715)
	Company A B Com	State (Location of site): NJ: NJ:

Rev 4, 06/09/2014		Lot # of Preservative(s):	Preservative Name/Conc.:
Initials:	The appropriate Project Manager and L Samples for Metal analysis whi	ve(s):	onc:
Date:	The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.	Expiration Date:	Volume of Preservative used (ml):

Sample No(s). adjusted:

TestAmerica Edison
Receipt Temperature and pH Log

	င်	င္ပံ	Cooler#9:	Ĉ	Cooler#6	S	°C	Cooler#3:	1
	ဂ	ဂိ	Cooler #8:	o	oler #5	C	င်	Cooler #2: °C	·1
	ဂိ	ငိ	Cooler #7:	င်	oler#4: °C	Coc	°C 2-1°C	Cooler #1: L. \ °C	
	CORRECTED	RAW		CORRECTED	C. RAW C.		CORRECTED) RAW	
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				(brief) (brief)	Ammonia COD Nitrate Metals Hardness	Cooler #1: 2\ °C 2\ °C Cooler Cooler #2: °C °C Cooler Cooler #3: °C °C Cooler
		1		(br. 0-3)		Cooler#6
				(A)		å å å
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				(bu/a)	Sulfide	8 8 8
				(3/14)	TKN	Cooler #7: Cooler #8: Cooler #9:
				(briv4)	100	តំ តំ តំ
				(212Hd)	Total Cyanide	ဂံ ဂံ ဂံ
				(Z>Hq)	Total Cyanide Total Phos Other	
					Other	
					Other	

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Client: AECOM, Inc.

Job Number: 460-144088-1

List Source: TestAmerica Edison

Login Number: 144088

List Number: 1

Creator: Meyers, Gary

Radioactivity wasn't checked or is = background as measured by a survey meter. N/A Not present The cooler's custody seals, if present, is intact. Sample custody seals, if present, are intact. The cooler or samples do not appear to have been compromised or tampered with. Samples were received on ice. Cooler Temperature is acceptable. Cooler Temperature is recorded. True COC is present. COC is filled out in ink and legible. COC is filled out with all pertinent information. Is the Field Sampler's name present on COC? There are no discrepancies between the containers received and the COC. Samples are received within Holding Time (excluding tests with immediate) HTsu Containers have legible labels. Containers are not broken or leaking. Sample collection date/times are provided. Appropriate sample containers are used. Sample bottles are completely filled. True Sample preservation Verified. True Sample Preservation Verified. True Sample preservation Verified. True Sample preservation Verified. True Sample sufficient vol. for all requested analyses, incl. any requested MS/MSDs Containers requiring zero headspace have no headspace or bubble is efform (1/4"). Multiphasic samples are not present. True True</th <th>Question</th> <th>Answer</th> <th>Comment</th>	Question	Answer	Comment
Sample custody seals, if present, are intact. True The cooler or samples do not appear to have been compromised or tampered with. Samples were received on ice. Cooler Temperature is acceptable. Cooler Temperature is recorded. COC is present. COC is present. COC is filled out in ink and legible. COC is filled out with all pertinent information. Is the Field Sampler's name present on COC? True Samples are received within Holding Time (excluding tests with immediate HTs) Sample containers have legible labels. Containers are not broken or leaking. Sample collection date/times are provided. Appropriate sample containers are used. Sample bottles are completely filled. Sample Preservation Verified. True Sample Preservation Verified. True Sample requiring zero headspace have no headspace or bubble is comm (1/4"). Multiphasic samples are not present. True True Samples do not require splitting or compositing.			
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Samples do not require splitting or compositing. True	Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
	Multiphasic samples are not present.	True	
Residual Chlorine Checked. True	Samples do not require splitting or compositing.	True	
	Residual Chlorine Checked.	True	

SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-145711-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-145711-1	WWTP-112217	Water	11/22/2017 1350	11/22/2017 1650

CHAIN OF CUSTODY / ANALYSIS REQUEST

Phone: (Edison,	111 INDI
(732)	New	2
(732) 549-3900	Edison, New Jersey 08817	// INDW DUITED IT DOGO
Fax:	817	
Fax: (732) !		
549-3679		

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Islan Massachusetts (M-NJ312), North Carolina (No. 578) S. 90 TR#9	3)	elinquished by Company Date / Time Received by	Date / Time Received by O V	2 Received by Atterior 11/25/4 1650 1) Hell for	ions	6 = Other, 7 = Other Water:	Preservation Used: 1 = ICE, 2 = HCI, 3 = H ₂ SO ₄ , 4 = HNO ₃ , 5 = NaOH Soil:	60-1-	45711						WWTP-1122/7 WWW/41350/62/10/X X X X X X X X	820 820 820 75 75	riles	C /V +ST.	Brand Sires Standard Standard	(CM) State (Location of Site): NJ: Regulatory Program: DEC	Samplers Name (Printed) & Site/Project Identification, Thon	INTAL TESTING
100), Rhode Island (132). TAL-0016 (0715)		Company	Company	Company	Water Metals Filtered (Yes/No)?		4	60-14	45711	1 Che	ain of	Cus	tody		*	Sample Numbers	3	Job No:	Project No:	S PO FE DKQ	Fron MO	Page / of /

		Numbe	Job Number:
		umber of Cools	mber:
	Copjer#1 Copjer#2 Copjer#3	iers	
Ammonia	1: 3.9 °C		11 LSh(
COD	3).		1
Nitrate Nitrite			
Metals •		IR Sun#	
Hardness	Cooler 4.	Coo	Receip
Pest		0	TestAmerica Edison Receipt Temperature and pH Log
EPH or QAM	9. 13.	Ampera	rica Edi rature a
Phenois Sulfide		lires	son nd pH L
Sulfide	0 0		g
TKN	Cooler #8:		
T 00	00 201 301 301 301		
Total Cyanide	2) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Total Cyanide Total Phos Other			
Other			Page
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TALS Sample Number

(pH<2)

(pH<2)

(pH<2)

(pH<2)

(pH<2)

(pH 5-9)

(pH<2)

(pH<2)

(pH>9)

(pH<2)

(pH<2)

(pH>12)

(pH<2)

TestAmerica Edison

TestAmerica	THE LEADER IN FRYINGHAFATAL TENHEG

777 New Durham Road Edison, NJ 08817 Phone (732) 549-3900 Fax (732) 549-3679	S	hain o	Chain of Custody Record	dy Rec	ord			THE LEADER IN FIN	ESIAMENDAMENT TENING
Client Information (Sub Contract Lab)	Sampler			Lab PM Nayyar, Sapna	apna	Сати	Carner Tracking No(s):	COC No. 460-50130.1	
1	Phone:			E-Marl sapna.na	yyar@testamericainc		State of Origin: New Jersey	Page 1 of 1	
Company. TestAmerica Laboratories, Inc.				Acci	Accreditations Required (See note) NELAP - New York			Job # 460-145711-1	
Adtress: 301 Alpha Drive, RIDC Park,	Due Date Requested: 11/28/2017	d:			A	Analysis Requested	peq	Preservation Codes	SS:
Crty. Pittsburgh State, Zp.: PA, 15238	TAT Requested (days):	ys):						B - NaOH C - Zn Acotate D - Ninc Acid E - NaHSO4	N - None O - AshaO2 P - Na2O4S O - Na2SO3
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO#			((noit)			G - Amchlor H - Ascorbe Acid	R - Na2S203 S - H2S04 T - TSP Dodecemetrate
	WO#				_				U - Acetone
Project Name National Grid - Former Clifton MGP	Project # 46018542				_			K-EDTA	W - pH 4-5 Z - other (specify)
Side.	SSOW#							of con	
Sample Identification - Client ID (Lab ID)	Sample Date		Sample M Type (************************************	berefild bleif	Make mroher, 1573/ Cyanide,			TedmuM later	460
	X	X	1 70	X					-14
WWTP-112217 (460-145711-1)	11/22/17	13:50		Water	×			1	5711
		Eastern			<				1 Chain of Custody
Note: Since laboratory accreditators are subject to change, TestAmerica Laboratories, inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This samples to change, TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, inc. attention in mediately. If all requested accreditations are current to date, return the signed Chan of Custody attesting to said complicance to TestAmerica Laboratories inc.	Laboratories, inc. places the pais/tests/matrix being analyse current to date, return the	s ownership of r zed, the sample signed Chain of	nethod, analyte las must be shop	s accreditation or ad back to the Te ig to said comple	mpilance upon out subco stAmenca laboratory or o ance to TestAmerica Lab	niraci laboratones. This ther instructions will be p pratones. Inc.	sample shipment is forwarded. Any changes to	This sample shipment is forwarded under chain-of-custody. If the laboratory does not be provided. Any changes to accreditation status should be brought to TestAmerica.	y if the laboratory does not be brought to TestAmerica
Possible Hazard Identification Unconfirmed				,	sample Disposal (A	fee may be asses	assessed if samples are r	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Mont	month) Months
Deliverable Requested: I, III, IV, Other (specify)	Primary Deliverable	ble Rank: 1		0,	Special Instructions/QC Requirements	C Requirements:			
Empty Kit Relinquished by:		Date:		Time			Method of Shipment		
Relinquished by:	3	13) t/h	00	734 Lindwood	Received M	1 chon	0	25-17	Company
Keimquished by:			8	Company	Received by		Date/Time;	908	Company
- 1	Cate/rme		200	Company	Received by.		Date/Time		Сотралу
Custody Seals Intact Custody Seal No :					Cooker Temperature(s	Cooler Temperature(s) °C and Other Remarks			

Client: AECOM, Inc.

Job Number: 460-145711-1

Login Number: 145711

List Number: 1

Creator: Rivera, Kenneth

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is smm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: AECOM, Inc.

Job Number: 460-145711-1

Login Number: 145711

List Number: 2

Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh List Creation: 11/25/17 10:03 AM

Question	Answer	Comment	
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td> <td></td>	N/A		
The cooler's custody seal, if present, is intact.	True		
Sample custody seals, if present, are intact.	True		
The cooler or samples do not appear to have been compromised or tampered with.	True		
Samples were received on ice.	True		
Cooler Temperature is acceptable.	True		
Cooler Temperature is recorded.	True		
COC is present.	True		
COC is filled out in ink and legible.	True		
COC is filled out with all pertinent information.	True		
Is the Field Sampler's name present on COC?	True		
There are no discrepancies between the containers received and the COC.	True		
Samples are received within Holding Time (excluding tests with immediate HTs)	True		
Sample containers have legible labels.	True		
Containers are not broken or leaking.	True		
Sample collection date/times are provided.	True		
Appropriate sample containers are used.	True		
Sample bottles are completely filled.	True		
Sample Preservation Verified.	True		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True		
Multiphasic samples are not present.	True		
Samples do not require splitting or compositing.	True		
Residual Chlorine Checked.	N/A		

FORM III GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name	e: TestAmerica Edis	on	Job No.: 460-145711-1
SDG No.			
Matrix:	Water	Level: Low	Lab File ID: h226239.D
Lab ID:	LCS 460-479607/4-A		Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Benzo[a]anthracene	0.800	0.941	118	49-135	
Benzo[a]pyrene	0.800	0.993	124	40-141	
Benzo[b]fluoranthene	0.800	0.993	124	46-143	
Hexachlorobenzene	0.800	0.853	107	29-132	
Indeno[1,2,3-cd]pyrene	0.800	1.24	155	18-150	*

 $[\]mbox{\#}$ Column to be used to flag recovery and RPD values FORM III 8270D SIM

FORM VII GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Edison Job No.: 460-145711-1

SDG No.:

Lab Sample ID: CCVIS 460-479953/2 Calibration Date: 11/26/2017 08:22

Instrument ID: CBNAMS9 Calib Start Date: 11/24/2017 14:24

Lab File ID: h226196.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.5199	0.5185		199	200	-0.3	20.0
N-Nitrosodimethylamine	Ave	0.5442	0.6125		113	100	12.5	20.0
Bis(2-chloroethyl)ether	Ave	1.074	1.179	0.7000	21.9	20.0	9.7	20.0
Naphthalene	Ave	1.064	1.110	0.7000	20.9	20.0	4.4	20.0
Acenaphthylene	Ave	1.941	1.917	0.9000	19.8	20.0	-1.2	20.0
Acenaphthene	Ave	1.364	1.344	0.9000	19.7	20.0	-1.5	20.0
Fluorene	Ave	1.455	1.545	0.9000	21.2	20.0	6.2	20.0
4,6-Dinitro-2-methylphenol	Qua		0.0429	0.0100	222	400	-44.6*	20.0
Hexachlorobenzene	Ave	0.3141	0.3017	0.1000	19.2	20.0	-3.9	20.0
Pentachlorophenol	Ave	0.1567	0.1491	0.0500	95.1	100	-4.9	20.0
Phenanthrene	Ave	1.117	1.084	0.7000	19.4	20.0	-2.9	20.0
Anthracene	Ave	1.086	0.9615	0.7000	17.7	20.0	-11.4	20.0
Fluoranthene	Ave	1.104	1.123	0.6000	20.3	20.0	1.7	20.0
Pyrene	Ave	1.389	1.339	0.6000	19.3	20.0	-3.6	20.0
Benzo[a]anthracene	Ave	1.163	1.119	0.8000	19.3	20.0	-3.7	20.0
Chrysene	Ave	1.284	1.151	0.7000	17.9	20.0	-10.4	20.0
Benzo[b]fluoranthene	Ave	1.092	1.112	·	20.4	20.0	1.8	20.0
Benzo[k]fluoranthene	Ave	1.394	1.303	0.7000	18.7	20.0	-6.5	20.0
Benzo[a]pyrene	Ave	1.040	0.9599	0.7000	18.5	20.0	77.7	20.0
Indeno[1,2,3-cd]pyrene	Ave	0.9181	1.151	0.5000	25.1	20.0	25.4	20.0
Dibenz (a, h) anthracene	Ave	0.9737	0.9405	0.4000	19.3	20.0	3.4	20.0
Benzo[g,h,i]perylene	Ave	1.078	1.028	0.5000	19.1	20.0	-4.6	20.0
Nitrobenzene-d5	Ave	0.3272	0.3336		408	400	2.0	20.0
2-Fluorobiphenyl	Ave	1.515	1.315		347	400	-13.2	20.0
2,4,6-Tribromophenol	Ave	0.2430	0.2373		391	400	-2.4	20.0
Terphenyl-dl4	Ave	0.7321	0.7260		397	400	-0.8	20.0

GENERAL CHEMISTRY BATCH WORKSHEET

SDG No.:								
Batch Number:	480186		Ва	atch Start Da	te: 11/27/17	14:23	Batch Analys	
Batch Method	SM 4500 H+ B		Ва	atch End Date	: 11/27/17 16	:00		
Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	SampleTemp	pHRead1	pHRead2	
CCV 460-480186/1		SM 4500 H+ B	Ì	20 mL	22.3 Celsius	7.04 SU	7.02 SU	
MB 460-480186/2		SM 4500 H+ B		20 mL	22.0 Celsius	6.21 SU	6.20 SU	
LCSSRM 460-480186/3		SM 4500 H+ B		20 mL	22.5 Celsius	7.56 SU	7.53 SU	
460-145240-A-1 DU		SM 4500 H+ B	T	20 mL	21.0 Celsius	7.70 SU	7.76 SU	
CCV 460-480186/11		SM 4500 H+ B		20 mL	22.5 Celsius	7.03 SU	7.01 SU	
CCV 460-480186/22		SM 4500 H+ B		20 mL	22.6 Celsius	7.03 SU	7.00 SU	
460-145711-E-1	WWTP-112217	SM 4500 H+ B	T	20 mL	21.6 Celsius	8.44 SU	8.46 SU	
CCV 460-480186/25		SM 4500 H+ B		20 mL	22.5 Celsius	7.03 SU	7.01 SU	

Job No.: 460-145711-1

Lab Sample ID	Client Sample ID	Method Chain	Basis	WTpHLCS 00020	
CCV 460-480186/1		SM 4500 H+ B			
MB 460-480186/2		SM 4500 H+ B			
LCSSRM 460-480186/3		SM 4500 H+ B		20 mL	
460-145240-A-1 DU		SM 4500 H+ B	Т		
CCV 460-480186/11		SM 4500 H+ B			
CCV 460-480186/22		SM 4500 H+ B			
460-145711-E-1	WWTP-112217	SM 4500 H+ B	T		
CCV 460-480186/25		SM 4500 H+ B			

Batch Notes											
pH Buffer 1 ID	Buffer	1.68	Ricca/2702E32	exp:04/31/19							
pH Buffer 2 ID	Buffer	4.0	Orion/910104	exp:10/31/19							
pH Buffer 3 ID	Buffer	7.0	Orion / 910107	exp; 05/30/19							
pH Buffer 4 ID	Buffer	10.0	Orion /910110	exp:05/31/19							
Instrument ID	pH mete	er A									

The pound sign (*) in the amount added field denotes that the reagent was used undiluted. All calculations are performed this reagent.

SM 4500 H+ B

Lab Name: TestAmerica Edison

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SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-147524-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-147524-1	WWTP-12212017	Water	12/21/2017 1430	12/21/2017 2030

777 New Durham Road Edison, New Jersey 08817 Phone: (732) 549-3609 TAL - 0016 (0715) LAB USE ONLY Project No: Sample Numbers (1:41.11 MBD 147524 Water Metals Filtered (Yes/No)? DKQP: Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). Company Сотрапу P.O. # 60 373 63 - 60. | State (Location of site): NJ: ANALYSIS REQUESTED (ENTER %: BELOW TO INDICATE REQUEST) Site/Project Identification (V) CHAIN OF CUSTODY / ANALYSIS REQUEST Sed-E 167. 1835.4 1704 1704 Received by 127 一个井日 R44/17 1530 2626 141/12/20 Samplers Name (Printed) Date / Time Date / Time Date / Time Soil: Water: Matrix Cont. 9 Rush Charges Authorized For: Analysis Turnaround Time 14 21/0 (SA) WIZTI Preservation Used: 1 = ICE, 2 = HCI, 3 = H₂SO₄, 4 = HNO₃, 5 = NaOH 2 Week 1 Week Time Atcom Date 460-147524 Chain of Custody Massachusetts (M-NJ312), North Carolina (No. 578) 7 = OtherCompany Company Company Fusture THE LEADER IN ENVIRONMENTAL TESTING **[estAmerica** WWTP-12212017 24 B. wd Sample Identification Phone 2(2377 872) 4ECOZ アングス 6 = Other Name (for report and invoice) Special Instructions Relinquished by Relinquished by Relinquished by Company Address

Page of			Other Other	47										
		3, 3, 3, 3, 3, 3, 3, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4,	Total Cyanide Total Phos	(pH>12) (pH<2)										which were pH adjusted.
Log		Cooler#75 16	Suffide TKN	(pH<2) (pH<2) (pH<2)								used (ml):	Expiration Date:	The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted. Samples for Metal analysis which are out of compliance must be exidified at least 24 hours prior to enalysis.
TestAmerica Edison Receipt Temperature and pH Log	ler Tamperatures		EPH or	(press) (press) (press)						tion below:		Volume of Preservative used (ml):	Expira	nent Manager snould be n
Tes Receipt Te	IR Sun# Cooler	Cooler#4: Cooler#5:	Metals Hardness	(27 ph/2) (27 ph/2)						ired record the information below:				ect Manager and Deparun Vetal analysis which are o
147524		5. 5. 59 5. 5. 59 5. 5. 59 5. 50 5. 50 50 50 50 50 50 50 50 50 50 50 50 50 5	COD	(2014) (2014) (2014)						If pH adjustments are required reco	iusted:	/Conc.:	tive(s):	ine appropriate moy
Job Number:	Number of Copiers William A	Cooler#12-0-74c	TAI & Canada Minestee				(*)	41			Sample No(s). adjusted:	Preservative Name/Conc.:	Lot # of Preservative(s):	

250 Edison, NJ 08817 Phone (732) 549-3900 Fax (732) 549-3679 TestAmerica Edison

777 New Durham Road

Chain of Custody Record

TestAmerica

Vide Since aboratory accreditations are subject to change, TestAmerica Laboratories, his, places the ownership of method, analyte & accreditation out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not accreditation in the State of Origin listed above for analysis/nests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, inc. N - None
O - AsNeO2
P - Na2O4S
Q - Na2SO3
R - Na2SO3
S - H2SO4
T - TSP Dodecehydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify) 460-147524 Chain of Custody Months Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Archive For Month
Special Instructions/QC Requirements: Preservation Codes A - HCL B - NaOH C - Zn Acetale C - Zn Acetale D - Nitic Acid F - Mach G - Amchlor H - Ascarbic Acid 460-147524-1 Specia Page 1 of 1 460-50406.1 I - fce J - Di Water K - EDTA Total Number of containers Method of Shipment. Carner Tracking No(s) State of Ongin: New York Analysis Requested sapna nayyar@testamericainc.com Accreditations Required (See note) Received by Lab PM Nayyar, Sapna 1677/ Cyanide, Available (Flow Injection) × erform MS/MSD (Yes or No) Time Company E-Mart Preservation Code: Matrix Water G=grab) (C=comp, Sample Type Sample Primary Deliverable Rank Easlern 14.30 4/27 Date (AT Requested (days): Due Date Requested 12/27/2017 Sample Date 12/21/17 Project # 46018542 #MOSS Phone # OM Client Information (Sub Contract Lab) Deliverable Requested: I, II, III, IV, Other (specify) Sample Identification - Client ID (Lab ID) 412-963-7058(Tei) 412-963-2468(Fax) National Grid - Former Clifton MGP WWTP-12212017 (460-147524-1) Possible Hazard Identification RIDC Park FestAmerica Laboratories, Inc. Empty Kit Relinquished by: Shipping/Receiving 301 Alpha Drive, efinquished by Unconfirmed eknquistied by Clerit Contact State, Zp: PA, 15238 Pittsburgh

Date/Time:

Cooler Temperature(s) "C and Other Remarks.

Received by

Company

Date/Tirne

Custody Seal No

Custody Seals Intact

tehnquished by.

A Yes A No

Client: AECOM, Inc.

Job Number: 460-147524-1

List Source: TestAmerica Edison

Login Number: 147524

List Number: 1 Creator: Jara, Kelly D

Question	Answer	Comment	
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td>*</td> <td></td>	N/A	*	
The cooler's custody seal, if present, is intact.	True		
Sample custody seals, if present, are intact.	True		
The cooler or samples do not appear to have been compromised or tampered with.	True		
Samples were received on ice.	True		
Cooler Temperature is acceptable.	True		
Cooler Temperature is recorded.	True		
COC is present.	True		
COC is filled out in ink and legible.	True		
COC is filled out with all pertinent information.	True		
Is the Field Sampler's name present on COC?	True		
There are no discrepancies between the containers received and the COC.	True		
Samples are received within Holding Time (excluding tests with immediate HTs)	True		
Sample containers have legible labels.	True		
Containers are not broken or leaking.	True		
Sample collection date/times are provided.	True		
Appropriate sample containers are used.	True		
Sample bottles are completely filled.	True		
Sample Preservation Verified.	True		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True		
Multiphasic samples are not present.	True		
Samples do not require splitting or compositing.	True		
Residual Chlorine Checked.	N/A		

Client: AECOM, Inc.

Job Number: 460-147524-1

Login Number: 147524

List Number: 2

Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh List Creation: 12/23/17 11:55 AM

Question	Answer	Comment	
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td>1</td> <td></td>	N/A	1	
The cooler's custody seal, if present, is intact.	True		
Sample custody seals, if present, are intact.	True		
The cooler or samples do not appear to have been compromised or tampered with.	True		
Samples were received on ice.	True		
Cooler Temperature is acceptable.	True		
Cooler Temperature is recorded.	True		
COC is present.	True		
COC is filled out in ink and legible.	True		
COC is filled out with all pertinent information.	True		
Is the Field Sampler's name present on COC?	True		
There are no discrepancies between the containers received and the COC.	True		
Samples are received within Holding Time (excluding tests with immediate HTs)	True		
Sample containers have legible labels.	True		
Containers are not broken or leaking.	True		
Sample collection date/times are provided.	True		
Appropriate sample containers are used.	True		
Sample bottles are completely filled.	True		
Sample Preservation Verified.	True		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True		
Multiphasic samples are not present.	True		
Samples do not require splitting or compositing.	True		
Residual Chlorine Checked.	N/A		

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Tes	stAmerica Edisc	on	J	ob No.: 460-1	47524-1		
SDG No.:							
Batch Number:	487147		В	atch Start Da	te: 12/26/17 1	.2:55	Batch Analys
Batch Method:	SM 4500 H+ B		В	atch End Date	: 12/26/17 16:	44	
Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	SampleTemp	pHRead1	pHRead2
CCV 460-487147/1		SM 4500 H+ B		20 mL	22.7 Celsius	7.03 SU	7.02 SU
MB 460-487147/2		SM 4500 H+ B		20 mL	22.5 Celsius	6.14 SU	6.14 SU
LCSSRM 460-487147/3		SM 4500 H+ B		20 mL	22.9 Celsius	7.55 SU	7.53 SU
460-146884-A-6 DU		SM 4500 H+ B	T	20 mL	22.3 Celsius	5.44 SU	5.43 SU
CCV 460-487147/12		SM 4500 H+ B		20 mL	22.9 Celsius	7.02 SU	7.01 SU
460-147524-E-1	WWTP-12212017	SM 4500 H+ B	T	20 mL	21.9 Celsius	8.65 SU	8.64 SU
CCV 460-487147/21		SM 4500 H+ B		20 mL	22.4 Celsius	7.02 SU	7.01 SU

Lab Sample ID	Client Sample ID	Method Chain	Basis	WTpHLCS 00020	
CCV 460-487147/1		SM 4500 H+ B			
MB 460-487147/2		SM 4500 H+ B			P. L. S. W.
LCSSRM 460-487147/3		SM 4500 H+ B		20 mL	
460-146884-A-6 DU		SM 4500 H+ B	T		
CCV 460-487147/12		SM 4500 H+ B			
460-147524-E-1	WWTP-12212017	SM 4500 H+ B	T		
CCV 460-487147/21		SM 4500 H+ B			

***	Batch Notes
pH Buffer 1 ID	Buffer 1.68 Fisher /2702E32 exp:04/30/19
pH Buffer 2 ID	Buffer 4.0 Orion/910104 exp:07/31/19
pH Buffer 3 ID	Buffer 7.0 Fisher / 172901 exp; 04/30/19
pH Buffer 4 ID	Buffer 10.0 Fisher /170678 exp:03/30/19
Instrument ID	pH meter A

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed this reagent.

SM 4500 H+ B

Page 623 of 632

Appendix B Waste Manifests

ase nai	nt or type. (Form designed for use on		tiem 10. Conjamers (kuesber			-\$1	A Form 8700-1		n Approved	. OMB No.	2050-00
UNIF	ORM HAZARDOUS 1. Generator ID	., .	noo to envi entino i vic 2. Page	5 1013/3/26	rgency Response	น เตรมมหายาร์กัก	4. Manifest	Tracking N			Name Variab
Ger	nerator's Name and Mailing Address	er, or plastic hage	persion, only 8 = AB MANAGEMENT ROLLING HAS	Generat	or's Site Address	(if different th	an mailing addres	s) Brotais	даў энцрег	เลยการในก	er lerel re
		allian esero ence a y la a sue esta e	CIV = Metal boyes, cal colluda, CUMEVA	49.77		E HILL	he coldidation	919,95,65	unit house.	STATE I T	959 AGE
	ator's Phone: A fair Fair Land		CY CHARLES CYPTORIS	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	tori tori	AND THE P	U.S. EPA ID N	lumber *	the constant	य । ५५ रू प्	in migarus
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18b	. Alternate Facility (or Gene	erator)		Manifest Referer	nce Number:	U.S. EPA ID	Number			a in
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Fac 18c	: Signature of Alternate Fac	cility (or Generator)		folgasalis / o			10 20 11 10 20 11 110	M	onth Da	y Yea
19.	Hazardous Waste Report !	Management Method Codes (i.e., codes for haz		and recycling systems	s)		June 1	Tiles of the last	- Permits	a men
1.		en recognition 2.	3.			4.	Barriera Partie			
		or Operator: Certification of receipt of hazardou			tem 18a					1, 19
I Prir	nted/Typed Name		Sign	ature				Mo	onth Day	y Year
1								T		CHANGE OF THE



1	SH	PPING	1. Generator ID Nu	ımber		2. Page 1	of 3. Emer	gency Respons	e Phone	4. Shipping	Document	Tracking Nur	nber	0			
Ш		CUMENT nerator's Name and Mai	NYDG	8053207	1	. 1.	877) 8	18-0087	/if different th	The state of the s	Z 0	046	249	8			
	BR0 287	DOKLYN UNION MASPETH A VEI DOKLYN NY 11 rator's Phone:	Ka' Gas,dba na' Nue	THERINE VATE T GRID/FMR.C			40 W	ILOW AV. EN ISLAN	E	an mailing addres	s)						
Ш	Gene 6. Tra	rator's Phone: nsporter 1 Company Na	me		600 000 t	aurea				U.S. EPA ID N	lumber						
Ш	VE	LIA ES TECHNI	CAL SOLUTIO	ens						NID	0 8	0 6 3	1 3	6 9			
	7. Tra	nsporter 2 Company Na	me							U.S. EPA ID N							
	R Do	signated Facility Name a	and Cita Address							U.S. EPA ID Number							
	o. De.	signated i dollity Hame a	VE L.L 125	FACTORY LAN	E	ONS											
Ш	Facili		09-5100	DEDLESEX, NJ 08						NID	0 0	2 4 5	4 5	4 4			
	9a. HM	9b. U.S. DOT Descrip and Packing Group (if		Shipping Name, Hazaro	d Class, ID Number,			10. Conta No.	ners Type	11. Total Quantity	12. Unit Wt./Vol.	13.	Codes				
GENERATOR -		1. EMPTY DRU	MS					6		200		NONE					
ER									D M	0	P	R					
SEN		2. NON RCRA	AND DOT NOR	REGULATED I	AQUID		-10					1072					
Ĭ			10-25					13	D M	5200	P	T					
		3. NON RCRA	AND DOT NON	regulated s	OLID			2		800		ID27					
П								Chris	D M		P	В					
Н		4.															
		TRUCK# 10724 GENERATOR S/OFFER marked and labeled/place	OR S CERTIFICATIO carded, and are in all r	ON: I hereby declare the espects in proper conditions.	at the contents of this	cording to ap	pplicable inter	nd accurately de national and nat	escribed above ional governn	nental regulations.							
	Gene	rator's/Offeror's Printed/	1				Signature	Zu.	2	Vaolie V	in Bel	Mor	th Day	1000			
<u>+</u>	16. In	ternational Shipments	Cerr			1	1 5	all V		of Notion	a / Gz.	(/ /	-				
NT'L	Trans	sporter signature (for exp				Export from	m U.S.	Port of each									
		ansporter Acknowledgme porter 1 Printed/Typed N		nent			Signature					Mor	th Day	Year			
P		TRICK O'CONN				1			15.1	12		- 11	1120	117			
TRANSPORTER		porter 2 Printed/Typed N				- (Signature					Mor	th Day	Year			
l	18. Di	iscrepancy												1			
	-	Discrepancy Indication S	pace Quar	ntity	Туре			Residue		Partial Reje	ection		Full Reje	ection			
	401	Manager Factor (- C					Sh	ipping Documer	nt Tracking Nu								
	18b. A	Alternate Facility (or Gen	erator)							U.S. EPA ID N	iumber						
AC	Coolii	ty's Phone:								1							
DESIGNATED FACILITY		Signature of Alternate Fa	cility (or Generator)									Mo	nth Day	y Year			
NA																	
ESIG	19. R	eport Management Meth	od Codes (i.e., codes	for treatment, disposal,	and recycling syster		3.			14							
۵,	"			-		· ·				the state of the s							
	20. D	esignated Facility Owner	r or Operator: Certifica	ation of receipt of shipme	ent except as noted i	in Item 18a											
		ed/Typed Name	,	b . a. a.ulau.	p		Signature					Mo	nth Day	Year			
↓						- 1											

Appendix C

Groundwater Sampling Forms

Well ID: RW-ZZ

AECOM

0"	4.1 / c	1	N. 4		1	. 10	120/00	1	0. 1.	110 3:
	National			•	D	ate: 12/	20/20	t (Tim	e: Start 10	
Project N			7363		District St.				Finish 11	<u>40</u> @/pm
Site Loca		clift		SI, NY			Ro			
Weather	Conds:	cold	1,1	windy	C	collector(s)	: <u> </u>	115	A L	
1. WATE	R LEVEL	DATA:	(meası	ared from Top	of Casino	a)			7.3	1 5 7
				c. Length of			(1 (a b)		Casing Diam	etęr/Material
a. TOI	ai well Len	igiii_	0.91	c. Length of	water Coll	1010 (3.4	(a-b)		1.5"	/pvc
b. Wa	ter Table D)epth	6.68	d. Calculated	System V	olume (see	back)	3991	7.0	
			0.00	196,0 - 11100		0.0		,,,,		
	. PURGE D		0.0	0						
a. Pui	rge Method		Keri	- pump	30.0					ologica. Nacid
b. Acc	ceptance C	riteria d	lefined ((see workplan)						
- Tem	perature	3%		-D.O.	10%					
- pH		<u>+</u> 1	.0 unit	- ORP	<u>+</u> 10m	V				
- Sp.	Cond.	3%		- Drawdown	< 0.3'					
c Fie	ld Testing E	- - - - - -	ent lice	d· Ma	ake		Model		Sorial	Number
C. 1 16	id resulig L	-quipi i	ent use	HACK						10937
			-	80458	•		USZ			1168
	Volume					languar I				
Time (24hr)	Removed (Liters)	Temp.	pH	Spec. Cond. (μS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1055	-	16.34	6.75	46.8	0.00		58.5	500	7.78	cloudy /none
1100	take.	[6.79	6.75	46.8	0.00	_	29.7	००२	7.76	3-
1105	-	16.21	6.74	46.8	0.00	-	12.0	400	7-76	dear I non
1110	-	16.07	6-74	46.9	0-00	~	4.34	400	7.76	Li
1115	-	15.95	6.74	46.8	0.00	-	2-91	400	7-76	и
1120	-	15-97	6.74	46.8	0.00	~	3.24	400	7.86 ce	Į.
1175		16.02	6.74	46.8	0.00		2.89	વ્હા	7.76	
	ceptance c				Yes No		4			(continued on back)
	as required									
	as required ave parame			reacried						
Пе	If no or N			low						
	II IIO OI IW	W - LY	Jiaiii De	iovv.						
	- 1								1 7	_
3. SAME	PLE COLLE	ECTION	N:	Method: los	~ flow	,				
									4	
Sample I		ntainer	Type	No. of Conta	ainers	Prese	rvation	Analysi	s Req.	Time
RW-2	17			SEE CO		100			1	1130
					-					
Commer	nts o	ppm	HS						101	
Comme	0.0	SP M	713							
	/		1	X					10/./	
Signature	е(Date	10/20/	2017

Well ID: RW-Z3

AECOM

b. Wa	al Well Len	gth_	3.15	c. Length of \ d. Calculated	Water Colun			0.6 991	Casing Diamo	eter/Material
	PURGE D		peri	- Pump						
b. Acc - Tem - pH		riteria d 3% <u>+</u> 1	lefined (.0 unit	see workplan) -D.O ORP - Drawdown	10%			200		
c. Fiel	d Testing E	quipm	ent used		ake		Model		Serial	Number
			_	Hach	10.00	NI D	1100 C	5 10 10 11	040	
			- 1 -	Horiba	10000	NO. N	V57		211	68
Time (24hr)	Volume Removed (Liters)	Temp.	<u>pH</u>	Spec. Cond.	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1270	-	14-45	7.16	12.4	0.00	~	70.5	400	6.41	chen/non
275	-	15.07	7-11	11.4	0.00	~	16.3	400	6-41	41
1230	-	14-84	7.20	11-2	0, 60	-	11.9	400	6.41	L.t
1275	-	14.16	7.26	11.3	0.00	_	10.4	400	6.41	n
1240	-	14.04	7.41	11.3	0.88	_	9.26	400	6.41	er
1245	_	13.80	7.58	11.2	4.16	_	7.44	400	6.41	61
0751	_	13.64	7.64	11.2	0.00	-	4-19	400	6.41	ve
Ha Ha	ceptance c s required s required ve parame If no or N/	volume turbidit ters sta	e been re y been r abilized	emoved eached	Yes No	N//				(continued on back
	LE COLLE	CTION	V : 1	Method: /u	n Flon					_
3. SAMP			Type	No. of Conta	ainers	Prese	ervation	Analysi	s Req.	Time 1255

Well ID: RW-25

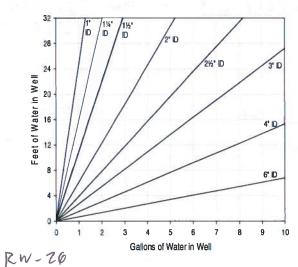
AECOM

Client: A Project No Site Locat Weather (ion:	1377 Click	63	I NY	Da [*]		:	17 Tim		340 am/m 445 am/m
a. Tota b. Wat 2. WELL	ıl Well Len	gth epth ATA	(measu NK 6.54	red from Top c. Length of V d. Calculated	Vater Colur	mn_ <i>UN</i>	103	VNK	Casing Diam ルグ゜,	neter/Material
b. Acco - Temp - pH - Sp. C	eptance Coperature	riteria 0 3% <u>+</u> 1 3%	lefined (.0 unit	see workplan) -D.O ORP - Drawdown				till preside		
c. Field	d Testing E	Equipm	ent used	l: Ma Hach			Model			Number 0937
				Hor. ba	0.70	etym.	V-52	divide	2116	
Time (24hr)	Volume Removed (Liters)	Temp.	pH -	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)		Color/Odor
पि००	_	14.53	7.07	5.70	6.00	-	34.2	2400	6.55	cloudy /non
1405	-	14.61	7.08	5.72	0-00	-	29.8	~ 400	6.55	96
1418	-	14.68	7.04	5-77	0-00	-	27.4	W 400	6.55	
1420	_	14.79	7.702	5.79	0.00	-	14.9	~ 400	6.55	clear Inon
1475	-	15.04	7.10	5.86	0.06	-	9.47	~ 400 ~ 400	6.55	44
1470	-	15.19	7.11	5-88	0.00	- 1	ES.3	n 400	6.55	11
Has Has	ceptance c s required s required re parame If no or N/	volume turbidit ters sta	e been re y been r abilized	emoved eached	Yes No D	N/A				(sentinued on bac
3. SAMP Sample II 2 w-7		ECTION		No. of Conta		Prese	rvation	Analysi	s Req.	Time
Comment	S <u>0.0</u>	ppm	нѕ	9						
Signature					\			Date	12/2	0/2017

Well ID: RW-Z6

AECOM

Client: Project N Site Loca		Grid 1373 Clift	63	SI, NY	Dat				ne: Start	
Weather	Conds:	Cold	, (41	n	Co	llector(s)	: <u> </u>	C		
				red from Top c. Length of V		nn_4.7	5 (a-b)		Casing Diam ノ.ケ"ノ	
b. Wa	ter Table D	epth_	7.39	d. Calculated	System Vol	ume (see	back)	0-4	5 1 1	
	PURGE D		per:	pump	5					
- Tem - pH	perature	3% <u>+</u> 1	.0 unit	see workplan) -D.O. - ORP - Drawdown						
c. Fiel	ld Testing E	quipm	ent used	i: Ma	ke		Model		Serial	Number
		pgr eD	7550	Hach	A Share	(RELIA	2100 a		OL	10937
				Horiba	L WIN	WIT I	U-52		7	168
	Volume							In the last		
Time (24hr)	Removed (Liters)	Temp.	Нq	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
735	-	11.89	7.39	1.53	0.00	-	71.7	450	7.52	char /non
740	_	51.51	7.38	1.48	0.00	-	16.7	450	7.52	, ·
745	-	13.31	7.30	1.18	0.00	-	16-0	1120	7.52	1 -
750	4-9-1	14.02	7-24	1.04	0.00	_	15.4	450	7.57	11
755		14.51	7.18	0.960	0.00		14-9	450	7.52	eq
800	-	13.95	7.16	1.26	0.00	-	13.4	450	7.52	11
805	-	13.99	7.14	0.975	6.40	-	14-6	450	7.57	It
Ha Ha	ceptance c as required as required ave parame If no or N/	volume turbidit ters sta	e been re y been r abilized	emoved eached	Yes No X E	N/.				(continued on back)
3. SAMF	PLE COLLE	CTION	N: 1	Method: low	v Flor					
Sample II		ntainer	Type	No. of Conta		Prese	ervation	Analysi	s Req.	Time 8/5
Commen	its <u>0.8</u>	cpm_	HS	7						
Signature	(ر ب						Date	12/21	17



Volume	/ Linear F	t. of Pipe
ID (in)	Gallon	Liter
0.25	5 0.0025	0.0097
0 - 10-		
4 19		
	0.0408	0.1544
1.25	0.0637	0.2413
1.8	5 0.0918	0.3475
	2 0.1632	0.6178
2.5	5 0.2550	0.9653
:	3 0.3672	1.3900
4	4 0.6528	2.4711
	6 1.4688	5.5600

(continued from front)

Volume

Time (24 hr)	Removed (Liters)	(°C)		Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	(NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
816	~	14.08	7.13	0.971	0.00	,	16.2	NSO	7.57	clear I none
	V4.70	e He	. 7/7				7 10 1	1117		
			- 79		al h					
			7	4 1 1 1				4		
		- 3		7. T			10-			
		74					- 17		, Tui	
		14.6								
	- 17			1 10 1				7	Ti 1	
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									 (1)	PERSONAL PROPERTY.
		T					Y.		p. 1	
										100
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K.
n

Client: National Grid Project No: 60137363-610	Date: 12/20/17 Time: Start 1005 am/
Site Location: Former Clifton MGP, Staten Island, NY	Finish # am/
Weather Conds:	Collector(s): B, Tate
1. WATER LEVEL DATA: (measured from Top of Casin a. Total Well Length 23.0 d. Screen Length b. Water Table Depth 3.36 e. Pump Intake c. Water Column (a-b) 19.9 f. Calculated Water	Casing Diameter Sump Length
a. Purge Method:	
b. Acceptance Criteria defined (as per AECOM workplated Temperature $\pm 3\%$ D.O. $\pm 10\%$ pH ± 0.1 unit ORP $\pm 10\%$ Sp. Cond. $\pm 3\%$ Drawdown < 0.3	% Turbidity < 50 NTU or <u>+</u> 10% mV
c. Field Testing Equipment used: Make Horiba	Model Serial Number U-52
LaMotte	2020
Volume Time Removed Temp. pH Spec. Cond. DO (ms/cm) (mg/L) 1040	37 4,7 240 5.71 23 3,4 5,95 214 3,2 6,12 7 6 3,4 6,37
3. SAMPLE COLLECTION: Method:	Nitrogen, Ferrous Iron, Total & Dissolved Fe,
	Methane, CO2, Alkalinity
Comments	
Signature	Date 12/10/17

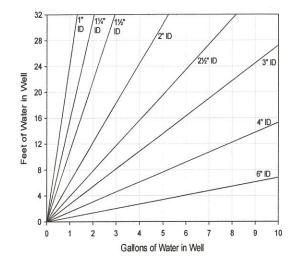
*		-
	7	1
	¥	
	1	
-		

Client: National Grid Project No: 60137363-610		Date:	12/2011	Time: Start /	<u>000</u> am/ 200 am/
Site Location: Former Clifton Mo	GP, Staten Island, NY	Collector(s):	B. tot-		
1. WATER LEVEL DATA: (measure a. Total Well Length 37-0 b. Water Table Depth 3.09 c. Water Column (a-b) 6.91 2. WELL PURGE DATA a. Purge Method:	d. Screen Length e. Pump Intake f. Calculated Water C	10	Casing Sump L	Diameter 7 ength 3	
b. Acceptance Criteria defined of the temperature $\pm 3\%$ pH ± 0.1 unit		Turbidity	< 50 NTU or <u>+</u> 10%		
c. Field Testing Equipment use	d: Make Horiba LaMotte	Model U-52 2020		Serial Number	
Volume Time Removed Temp. pH (24hr) (Liters) (°C) 1040 (15,32 8,68 1945 2 15,30 8,74 1050 3 15,28 8,76 1055 4 15,09 8,75 1100 6 14,99 8,77 1005 6 15,05 8,76 d. Acceptance criteria pass/fail Has required volume been re Has required turbidity been re Have parameters stabilized? If no or N/A - Explain bel	Spec. Cond. (mS/cm) (mg/L) (),223 3,57 (),222 3,02 (),222 2,27 (),221 1,97 (),221 1,87 Period (Proceed) Period (Proced) Proceding (MS/cm) (mg/L) (mg/		Flow Rate (ml/min) (teet 200 6.7 7.1 7.1 8.5 8.5 8.65	(What color?) (((1) ((1) (1) (1) (1) (1) (1) (1) (1)	hone
Sample ID Container Type	Method:	Nit	Analysis Req. TEX, PAHs by SIM, Outrogen, Ferrous Ironotatatata	, Total & Dissolved	
			ethane, CO2, Alkalin		
Comments		2		j /	2
Signature			Date 17/	20117	

Client: National Grid	Date: _/ 2	/29//7 Tin	
Project No: 60137363-610			Finish <u>1930</u> am
Site Location: Former Clifton MGP, Staten Island, NY	23 MW W 25 45	1 2 1	
Weather Conds:	Collector(s):	BTake	
1. WATER LEVEL DATA: (measured from Top of Casing, 0.	10	()	· Ý
a. Total Well Length 4. Screen Length		Casing Diam	eter
b. Water Table Depth 1002 e. Pump Intake	Andrewskie of the Anna Anna Anna Anna Anna Anna Anna Ann	Sump Length	5
c. Water Column (a-b <u>) </u>	mn Volume		
a. Purge Method: Low Plan			
b. Acceptance Criteria defined (as per AECOM workplan) Temperature ±3% D.O. ±10% pH ±0.1 unit ORP ± 10mV Sp. Cond. ±3% Drawdown < 0.3'	Turbidity	< 50 NTU or <u>+</u> 10%	
c. Field Testing Equipment used: Make	Model	Serial	Number
Horiba	U-52		
LaMotte	2020		
	ORP Turbidity (NTU)	Flow Rate DTW (ml/min) (teet)	Color Ode (What color?) (What type o
1310 1,1 17:05 11,72 0,398 6.57 -	16 7-7	220 1.89	More hour
	1811 81	1195	
	23 1,62	2.05	
	26 2,01	2,12	
	33 494	3,27	
1335 6,6 13,76 11,26 0,416 4,60 -	33 1,77	2,3/	
	33 1190	2,4/	
d. Acceptance criteria pass/fail Has required volume been removed? Has required turbidity been reached? Have parameters stabilized? If no or N/A - Explain below.	No N/A		(continued on back)
3. SAMPLE COLLECTION: Method:			
Sample ID Container Type No. of Containers	Preservation	Analysis Req. EX, PAHs by SIM, COD,	Tim
		rogen, Ferrous Iron, Tota	
		tal & Dissolved Mn, Sulfa	te, Suilide,
	IVIE	thane, CO2, Alkalinity	
Comments			
Signature		Date	0/17

Client:	National				Da	ate: [Z	120/1	7 Ti	me: Start	The second secon
Project N		37363-610							Finish /	450 am/
Site Loca	-	ormer Clifton M	IGP, Staten Isl	and, NY			B. To	Zit		
Weather	Conds:				Co	ollector(s):	1/2			
			ured from Top	-	g, 0.01 foo				FA	
a. Tot	al Well Le	ngth 25	d. Screen I	Length	10			Casing Diam	ieter	
b. Wa	iter Table I	Depth <u>2,32</u>	e. Pump In	take				Sump Lengtl	15	
c. Wa	ter Columi	n (a-b) 22.17	f. Calculat	ed Water C	olumn Vo	lume				
2. WELL a. Pur	. PURGE I	DATA	or Flo	n						
b. Acc Tem pH			(as per AECO D.O.	M workplan <u>+</u> 10% <u>+</u> 10m	Tu	urbidity	< 50 NTU c	or <u>+</u> 10%		ų .
c. Fiel	ld Testing	Equipment use	ed: M	lake		Model		Serial	Number	
				riba	***************************************	U-52				manuscript and the second
			LaN	Notte		2020)			
Time	Volume Removed	Temp. pH	Spec. Cond.	DO	ORP	Turbidity	Flow Rate	DTW	Color	Odc
(24hr)	(Liters)	(°C)	(mS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	(teet)		(What type or
1310	1.1	14,42 948		5,21	77	1,67	220	3-10		
03 05	2.2	14,47 9,48	9.450	4,21	64	6.0		3,41		
13.20	3,3	14,54 9.48	0.450	4,40	55	5.7		3.61		
13 25	414	1462 9,43	0:450	4,38	47	5,6		3,67		
1330	5,5	14,59 9,56		3,98	39	7.4		3,74		
1335	6,6	13:49 0,56	0.444	3,87	50	5,8		3/81		
1340	17,7	13.78 9,55	0.440	3,87	59	6-2	1	3-79		
Ha Ha	s required s required ve parame	criteria pass/fai volume been i turbidity been eters stabilized /A - Explain be	removed? reached? ?	Yes	No				(continued on ba	ick)
3. SAMP	LE COLLE	ECTION:	Method:	Maria Ma	ilkoninorani (sp. 45 martis (sp. 45				port MAN program in a constant light of the constant open data Man	407
Sample II) Co	ontainer Type	No. of Conta	ainere	Droco	rvation	Analysi	is Rea		Time
207								by SIM, COD,	Ammonia A	
201										
								ous Iron, Tota		а ге,
****							via comment	ved Mn, Sulfa	ite, Sulfide,	
						Me	ethane, CO2	2, Alkalinity		
Comment	ts									
					***************************************		and the last transmission of the			

Signature	-n	~	AND THE PROPERTY OF THE PROPER		полительного придостивного полительного поли	SELECTION OF THE PARTY OF THE P	Date	17/10	11	



Volume / Linea	ar Ft. of Pipe
ID (in)	Liter
0.25	0.0097
0.375	0.0217
0.5	0.0386
0.75	0.0869
1	0.1544
1.25	0.2413
1.5	0.3475
2	0.6178
2.5	0.9653
3	1.3900
4	2.4711
6	5.5600

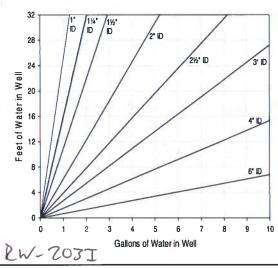
(continued										
Time (24 hr)	Volume Removed (Liters)	Temp (°C)		Spec. Cond. (mS/cm)	(mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	DTW (ft)	Color/Odor (Provide type of color and odor, not Yes or No)
1345	18/8	12.86	9054	0.444	4,00	65	6.7			
1350	9,9	12,92			4,03	62	6,5			
1- 7.5	1	16716					0 7 7			
	 		<u> </u>					<u> </u>		
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TOTAL DESIGNATION OF THE PARTY										

Well ID: RW-703I

AECOM

Site Locat Weather (ion: C	13771 Cold		, NY		llector(s)	: :}}	SC	Finish 10	0
	1		Calm			nector(8)	· ·	0 0		
			-	red from Top c. Length of V	-	nn 34.	16 (a-b)		Casing Diam	eter/Material
b. Wat	ter Table D	epth 2	2.52	d. Calculated	System Vol	ume (see	back) Z	2.3 941	9. 11	ve
	PURGE D	_		Per:	1 9 1	`	Lan III	<i>y</i> .,		
a. Pur	ge Method:	1	bladde		To 1				14.30	Yalla,
- Tem _l - pH	eptance Ci perature Cond.	3% <u>+</u> 1	.0 unit	see workplan) -D.O. - ORP - Drawdown	10% ± 10mV < 0.3'					
c. Field	d Testing E	auipme	ent used	l: Ma	ıke		Model		Serial	Number
			,7700	Had			21000			0937
				Horiba			U-52		2110	68
	Volume		4-1-2				78-72-1	ALE LY		
Time (24hr)	Removed (Liters)	Temp.	рH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
900	(Lite15)	14.03	9.24	0.272	U.00	~ (IIIV)	17.0	600	7.99	char / Mig
905	~	M·17	9.50	0.767	0.00	-	10-1	400	798	n
910	- 1	14.29	9.51	0.764	0.00	~ 3	9.88	400	3.04	u
915	_	14.75	9.51	0.767	0.00	-	8.87	цoo	7.77	
970		14.77	9.54	0.762	0.00	_	7.59	400	3.24	6.1
975	-	14.52	7.56	0.261	0,00	-	30.0	400	3.24	5.4
936	-		9.58	0.260	0.00	-	8-73	400	3.24	r.
Ha Ha	ceptance c s required s required ve parame If no or N/	volume turbidit ters sta	been re y been re abilized	emoved eached	Yes No	N/.				(continued on back
3. SAMP	LE COLLE	CTION	N: N	Method:	ow Flow					
Sample II		ntainer	Туре	No. of Conta		Prese	rvation	Analysi	s Req.	Time
										7000
Commen	ts 236	7 06	om F	15	1					



Volume /	Volume / Linear Ft. of Pipe									
ID (in)	Gallon	Liter								
0.25	0.0025	0.0097								
1	0.0408	0.1544								
1.25	0.0637	0.2413								
1.5	0.0918	0.3475								
2	0.1632	0.6178								
2.5	0.2550	0.9653								
3	0.3672	1.3900								
4	0.6528	2.4711								
6	1.4688	5.5600								

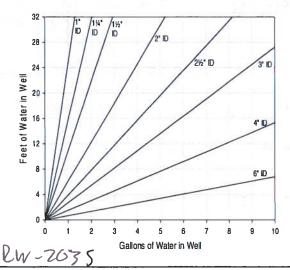
(continued from front)

V	പ	h	m	16

	Time (24 hr)	Removed (Liters)	Temp (°C)	pН	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
Je [935 -	14.62	9.59	0.760	0,00	(1117)	7.61	400	3.79	cland napth
Tc		940	14.66	9.60		0.00	-	6.24	400	3.31	h
づこ		945 -	14.69		0.260	0.00	~	6.18	400	3.72	n
l	950	_	14.83		0.260	0.00)	6.41	400	3.74	И
[955	_	14.88	9-63	0.760	0.00	į	6-92	400	3.34	√L
					3. 1					9 4 5	
ļ					7. (2)	700 - 7			9		7.1
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AECOM

Site Location: Cold Client:	Nationa	1 Gr	id		Dat	te: 17	121 (17	Tim	ne: Startl	035 @n/pm	
Weather Conds: Cold Col	Project No	o: <u>60</u>	11377		57. 16. 11.	To altre				Finish 1	zco am/pm
1. WATER LEVEL DATA: (measured from Top of Casing) a. Total Well Length 77.76 b. Water Table Depth 7.11 b. Water Table Depth 7.11 c. Length of Water Column 24.25 b. Water Table Depth 7.11 c. Length of Water Column 24.25 c. Length of Water Column 24.25 c. Length of Water Column 24.25 c. Length of Water Column 24.25 c. Length of Water Column 24.25 c. Length of Water Column 24.25 c. Length of Water Column 24.25 c. Well PURGE DATA a. Purge Method: Devi - pt mp b. Acceptance Criteria defined (see workplan) - Temperature 3% -D.O. 10% - pH	Site Locat	tion: (-liftor	SI	NY	100					
a. Total Well Length 7.7.76 c. Length of Water Column 24.25 (a-b) b. Water Table Depth 7.11 d. Calculated System Volume (see back) b. Water Table Depth 7.11 d. Calculated System Volume (see back) 2. WELL PURGE DATA a. Purge Method: Peri - Ptt myP b. Acceptance Criteria defined (see workplan) - Temperature 3% -D.O. 10% - pH	Weather (Conds:	Cold	Ce	iln	Co	llector(s)	:	e	1 11	<u> </u>
2. WELL PURGE DATA a. Purge Method:	a. Tota	al Well Ler	ngth Z	7.76	c. Length of	Water Colur	nn <u>24.</u>			- ,	
a. Purge Method:	b. Wat	ter Table D	Depth	5-11	d. Calculated	System Vo	lume (see	back) /	5.8 991		
- Temperature				per	-plimp	1 9		4		- 77	
	- Tem _l - pH	perature	3% <u>+</u> 1	.0 unit	-D.O. - ORP	10% <u>+</u> 10mV			art or make		
Volume Horn'6 V-ST Till68 Time Removed Temp. pH Spec. Cond. DO (mg/L) (my/L) (ml/min) (leet) (leet) (leet) (leet) (leet) (ms/cm) (mg/L) (mg/L) (ml/min) (leet) (ml/min) (leet) (ms/cm) (ms/cm) (ms/cm) (ml/min) (leet) (ml/min) (leet) (ms/cm)	c. Field	d Testing I	Equipmo	ent used					en a glikija el		
Time Removed Temp PH Spec. Cond. DO (IIS/cm) (INS/cm) (INS/					Horib	4	15.00	V-52			
Cahr (Liters) C (µS/cm) (mg/L) (mV) (NTU) (ml/min) (Teet) (ous	Times		Tomo		Spec Cond	DO	OPP	Turbiditu	Flow Boto	Drawdown	Color/Odor
1045 - 1571 8-69 0-787 0.00 - 15-7 450 7.70 Clay feet 1050 - 14.96 8.42 0-784 0.00 - 17.1 450 7.49 1.055 - 14.96 8.42 0-784 0.00 - 11.9 450 7.49 1.05 - 14.97 8.15 0.786 0.00 - 11.9 450 7.56 1.005 - 14.97 8.21 0-786 0.00 - 11.6 450 7.56 1.005 - 14.87 8.21 0-786 0.00 - 11.2 450 7.58 1.005 - 14.87 8.21 0-786 0.00 - 11.2 450 7.58 1.005 - 14.87 8.21 0-786 0.00 - 11.2 450 7.58 1.005 1.005 - 14.87 8.21 0-786 0.00 - 11.2 450 7.58 1.005				рп							Coloi/Odor
1050		-		8.69		1		1			clear / Faint
1055 - 14.96 8.42 0.384 0.00 - 13.3 450 7.49 1.00 15.01 (.11 0.786 0.00 - 11.9 450 3.74 1.05 - 14.97 8.18 0.386 0.00 - 11.6 450 3.56 1.00 11.5 - 14.85 8.21 0.386 0.00 - 11.2 450 3.56 1.00 11.5 - 14.85 8.21 0.386 0.00 - 11.2 450 3.56 1.00 11.5 - 14.85 8.21 0.386 0.00 - 11.2 450 3.57 1.00 11.5 - 14.85 8.21 0.386 0.00 - 11.2 450 3.57 1.00 11.5 1.00 11.5 1.00	1050	10.00		8.57		0.00	-				
100		_				0.00	_	13.3			
1105	1100	-				0.00	-	11.9			14
III 0		_	14.92	8.18		0.00	,	11-6			4.
d. Acceptance criteria pass/fail Yes No N/A Has required volume been removed Has required turbidity been reached Have parameters stabilized If no or N/A - Explain below. 3. SAMPLE COLLECTION: Method: Ow Flow	1110	-	14-85	8.21		0.00	-	11.2	450	7.58	b t
Has required volume been removed Has required turbidity been reached Have parameters stabilized If no or N/A - Explain below. 3. SAMPLE COLLECTION: Method: low flow Sample ID Container Type No. of Containers Preservation Analysis Req. Time RW - 203 S SEE COC 1145	1415	_	14-86	8.21	0-386	0.00	-	10.4	450	3.62	n
Sample ID Container Type No. of Containers Preservation Analysis Req. Time IV- 203 S SEE COC 1145	Ha Ha	s required s required ve parame	volume turbidity eters sta	been re y been r abilized	eached	区 口	N/.				(continued on back)
RW-2035 SEE COC 1145							Prese	ervation	Analysi	s Rea.	
Comments 15.9 ppm HS			7		5	EE CC) <u>C</u>				1145
Signature Date 12/21/17	Commen	ts _ / 5 · ·	9 pp1	n HS							



Volume /	Linear Ft	. of Pipe
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
10.0		
perco		
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

V	'ol	u	m	e

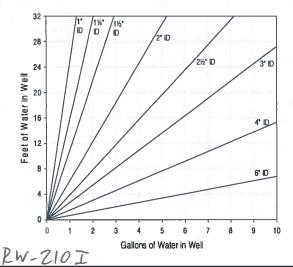
Time	Removed		pН	Spec. Cond	DO	ORP	Turbidity		Drawdown	Color/Odor
(24 hr)	(Liters)	(°C)		(μS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	(ft)	***
1120	Gas.	14-87	8.20	0.386	0.00)	9-66	450	3.69	clear I none
1125	~	14.88	8.70	0.385	0.00	1	9.24	450	3.65	, u
1170		14-99	\$ 18	0.384	0.00	_	8.91	450	3-67	į c
1135	-	[501	8-18	0.384	0.00	-	8.66	450	3.67	· · ·
1140	~	12:13	8.17	0.384	0-00	_	8.44	450	3-69	vt
		11 11		et an il			.11	1 1		
		- 15 t		1	1.11			111,		Y TO TO THE
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	1 1									

Client: National Grid	Date: <u>/ 7</u>	12/157		
Project No: 60137363-610			Finish_	<u>750</u> am.
Site Location: Former Clifton MGP, Staten Island, NY		<i>i</i> 0		,
Weather Conds:	Collector(s):	B. Ture	- 1	10
1. WATER LEVEL DATA: (measured from Top of Casin				<u> </u>
	10	-	Diameter /	
b. Water Table Depth 0,82 e. Pump Intake		Sump Le	ngth <u>5</u>	
c. Water Column (a-b) 42,18 f. Calculated Water	Column Volume			
a. Purge Method: Low Flow				
b. Acceptance Criteria defined (as per AECOM workplated Temperature $\pm 3\%$ D.O. $\pm 10\%$ pH ± 0.1 unit ORP ± 10 Sp. Cond. $\pm 3\%$ Drawdown < 0.3	6 Turbidity nV	< 50 NTU or <u>+</u> 10%		
c. Field Testing Equipment used: Make	Model	Se	erial Number	
Horiba	U-52			
LaMotte	2020			
Volume Time (24hr) Removed (*C) Temp. pH (mS/cm) Spec. Cond. DO (mS/cm) DO (mg/L)	ORP Turbidity (mV) (NTU)	Flow Rate DTW (ml/min) (teet)	(What color?)	Od (What type o
855 1,251240 8,64 0,683 1.92	16 11,6	250 0.9	2 Mare	hpm
900 2.5 12948.60 0.680 1.87		1 (,0	0	(
905 3,753,128,60 0.677 1,71	34 14.2	111	2	
910 5,0 13,21 8,49 0.675 1,67	37 12, 9	1 1 1	4	
415 6,25 37 8.54 0.673 1.60	34 8101	1 1 2		
970 7,50 13,46 8.60 0.671 1,34		1, 2		
925 8,75 3,51 8.50 0,071 1,58	33 519	1. 2		
d. Acceptance criteria pass/fail Has required volume been removed? Has required turbidity been reached? Have parameters stabilized? If no or N/A - Explain below.	No N/A		(continued on bad	ck)
3. SAMPLE COLLECTION: Method:				
Sample ID Container Type No. of Containers	Preservation	Analysis Req.		Tim
TW-204	вт	EX, PAHs by SIM, C	OD, Ammonia, N	litrate 7%
		rogen, Ferrous Iron,		
	То	tal & Dissolved Mn, S	Sulfate, Sulfide,	
	Me	ethane, CO2, Alkalini	ty	
Comments				
Signature		Date	121/17	

Well ID: RW- ZIOI

AECOM

Project No Site Locat		01373 C1:ft	363 on	SI N7	The second of the	ate:		(A	e: Start /3 Finish /	
a. Tota	al Well Len	igth_3	7-85	red from Top	Water Colu	ımn 37.8			Casing Diam	
2. WELL	PURGE D	ATA		d. Calculated- ρυm ρ	System V	olurne (see	раск)	1-1-701		
- Temp - pH	perature	3% <u>+</u> 1	.0 unit	see workplan) -D.O. - ORP - Drawdown	10% <u>+</u> 10m' < 0.3'	V				
c. Field	d Testing E	Equipmo	ent used		ıke		Model			Number
	1000	mio Gr	040	Hach	7 A Equit	7000	2100 Q	5-300		10937
				Horiba		A Plant	U-52	STREET, STREET	2	1168
Time (24hr)	Volume Removed (Liters)	Temp.	<u>рН</u> -	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (teet)	Color/Odor
1310	-	12.98	8,11	0.437	0-00	274	8.39	450	0	clear Incin
1315	-	13.0G	8.09	0.440	0.00		8-64	450	0	61
1370	-	1303	8.09	0.440	6.00	-	8.75	450	0	n
1325	7 -	12.97	8.09	0.440	0.00		8.41	450	0	И
1370			8-10	0.440	6.00		7.98	420	0	ч
1335	15-21	12-91	8.09	0.440	6.00	- 1	8.62	450	0	и
1340)		8.08	0-440	0.00	-	8.75	450	0	h
Has Has	ceptance c s required s required ve parame If no or N/	volume turbidity ters sta	been re y been r abilized	emoved eached	Yes No 又 团 日					(continued on back)
	LE COLLE			Method: <u>lo</u>	w Flun		rvation	Analysi	e Bog	——Time
Sample II	Z10 I	ontainer	ı ype	SEE		riese	i valiUN	Analysi	э i ieų.	/4/0
Comment		ppm	2 H S					18 E.L.		
Signature			\ /					Date	12/2	1/17



Volume / Linear Ft. of Pipe									
ID (in)	Gallon	Liter							
0.25	0.0025	0.0097							
7742									
1	0.0408	0.1544							
1.25	0.0637	0.2413							
1.5	0.0918	0.3475							
2	0.1632	0.6178							
2.5	0.2550	0.9653							
3	0.3672	1.3900							
4	0.6528	2.4711							
6	1.4688	5.5600							

(continued from front)

Volume

Time	Removed	Temp	пΗ	Spec. Cond	DO	ORP	Turbidity	Flow Bate	Drawdown	Color/Odor
(24 hr)	(Liters)	(°C)	ρ	(μS/cm)	(mg/L)	(mV)	(NTU)	(ml/min)	(ft)	001011 0001
1345		1261	8-10	0,440	6,00		8.81	450	0	Clan/ (non
1350	-	12.45		0.440	0.00	_	9.38	450	0	и
1355	-	1221	8.12	0.440	6.00)	7.51	450	0	n
1400	-	12.05	8.09	0.440	0,00	-	9.46	450	0	n
1405	7	12-07	8.08	0.440	0,00		9.22	450	0	n
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	11	-						1 =		2 I
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	_						DO			= IV
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		<u> </u>								