



VOLUNTARY REMEDIATION PROGRAM COMPLIANCE STATUS REPORT

**32.91-ACRE CSXT PARCEL
HUTCHINSON ISLAND
SAVANNAH, CHATHAM COUNTY, GEORGIA
HSI SITE NO. 10101**

Prepared for Submission to:

**Georgia Department of Natural Resources
Hazardous Waste Management Branch
Suite 1054, East Tower
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Atlanta, Georgia 30334**

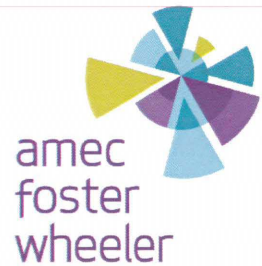
Prepared by:

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August 1, 2016

CSX-RPI Project No. 9415575
Amec Foster Wheeler Project No. 6-4300-5247

August 1, 2016



Mr. Derrick Williams
Environmental Protection Division
Hazardous Site Response and Remediation Program
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CSX-RPI Project No. 9415575

**Subject: Voluntary Remediation Program - Compliance Status Report
32.91-ACRE CSXT PARCEL
Hutchinson Island
Savannah, Chatham County, Georgia
HSI Site No. 10101
Amec Foster Wheeler Project No. 6-4300-5247**


Dear Mr. Williams:

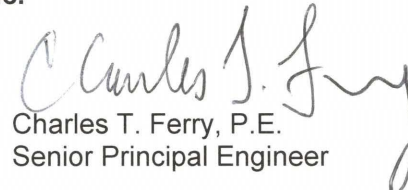
On behalf of CSX Real Property, Inc. (CSX-RPI), Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) respectfully submits this Voluntary Remediation Plan Compliance Status Report (CSR) for the subject property in the Georgia Voluntary Remediation Program (VRP). This CSR documents the delineation of soil conditions to the appropriate risk reduction standards at the VRP property and documents the current status of groundwater conditions at the Hazardous Site Inventory (HSI) site which encompasses the VRP property.

This CSR is submitted in lieu of the Seventh Semi-Annual Progress Report to begin the process of removing the subject site from the HSI. It is our intent to suspend further activities under the VRP pending EPD's decision regarding removal of the subject property from the HSI. Please contact Chuck Ferry at 404-873-4761 with any questions you may have regarding this submittal.

Sincerely,

Amec Foster Wheeler Environment & Infrastructure, Inc.


Stephen R. Foley, P.G.
Senior Geologist

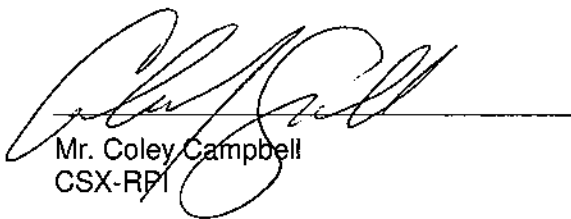

Charles T. Ferry, P.E.
Senior Principal Engineer

cc: Mr. Coley Campbell, P.E., CSX Real Property, Inc.
Mr. Matthew Grostick, P.E., Amec Foster Wheeler

CERTIFICATION STATEMENT

I certify under penalty of law that this report and all attachments were prepared under my direction in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Based on my review of the findings of this report with respect to the risk reduction standards of the Rules for Hazardous site Response, Rule 391-3-19-.07, I have determined that the site is in compliance with Type 3 or 4 risk reduction criteria for all constituents in soil and with Type 4 with controls risk reduction criteria for all constituents in groundwater.

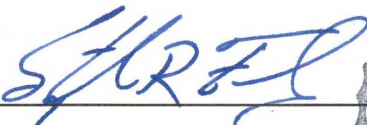


Mr. Coley Campbell
CSX-RPI

8/1/16
Date

GROUNDWATER SCIENTIST STATEMENT

I certify that I am a qualified groundwater scientist who has received a baccalaureate or post-graduate degree in the natural sciences or engineering, and have sufficient training and experience in groundwater hydrology and related fields, as demonstrated by state registration and completion of accredited university courses, that enable me to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport. I further certify that this report was prepared in conjunction with others working under my direction.



Mr. Stephen R. Foley, P.G.
Georgia Registration No. 1057



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APPENDIX E – VAPOR INTRUSION SCREENING

1.0 BACKGROUND

This Compliance Status Report (CSR) has been prepared by Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) for the CSXT ("VRP parcel or property) property located on Hutchinson Island in Savannah, Georgia and for the following surrounding properties which comprise the HSI site ("Site"). See **Figure 1**.

The subject property is owned by CSX-RPI and is comprised of a 32.91-acre parcel. The property occupies Chatham County Tax Parcel 1-0436-01-017 and currently consists of vacant land (see **Figure 2**).

The property was previously occupied by a bulk petroleum and chemical storage facility between approximately 1920 and 1992. CSX-RPI has engaged in significant soil and groundwater remediation at the property to address soils impacted with petroleum constituents and metals as described in previous submittals to EPD and has successfully completed implementation of the EPD-approved Modified Corrective Action Plan (MCAP) for impacted soils on the VRP parcel. Compliance with Type 3 risk reduction standards (RRS) for soil was certified in the 2008 Revised Compliance Status Report (CSR). The property also underwent groundwater remediation from 2008 through 2011 as described in the MCAP. The primary constituent of concern (COC) in groundwater is ammonia. Low levels of benzene, naphthalene, arsenic and lead remain in groundwater in limited to localized areas on the property.

1.1 SITE HISTORY

As described in the January 2003 Revised CSR (BBL 2003a), Hutchinson Island was used for deposition of dredge spoils from the widening and deepening of the Savannah River from the mid-1800s until approximately 1982.

From 1920 to 1992, CSX or its predecessors leased the property to companies that operated bulk storage facilities. The property was leased to Gulf Refining Company from 1920 to 1973. Gulf Refining Company used the property as a bulk petroleum storage and transfer facility. In 1973, Charter International Oil Company (Charter) assumed the lease and continued to use the property as a bulk petroleum storage facility. While Charter operated at the property, it also stored other chemicals at the facility, primarily liquid fertilizer. Charter's lease ended in 1982, when Powell Duffryn Terminals, Inc. began operating the facility. Powell Duffryn continued to store petroleum products in smaller quantities, but primarily operated the facility as bulk storage for chemicals. Materials stored by Powell Duffryn reportedly included pulping liquors, sulfuric

acid, caustic soda, zeolite slurry, alum, latex and fatty acid. When the lease to Powell Duffryn ended in 1992, all tanks, buildings, rails and other aboveground facilities were removed.

At its peak, the facility's storage capacity included 24 circular aboveground petroleum storage tanks ranging in size from 84,000 gallons to 2.3 million gallons. Six additional tanks, located on the southeastern corner of the property, were installed during Powell Duffryn's operation of the facility. Reportedly, there were also five (5) rectangular storage tanks located at the property. However, their location on the property has not been documented.

1.2 SUMMARY OF PAST RELEASES

Releases that occurred during the operating history of the former bulk storage facility include: disposal of tank bottoms to a settling pit located at the northern end of the property, deposition of tank bottoms on the ground surface adjacent to the tanks across the property; a release of approximately one to two tons of liquid fertilizer that reportedly occurred sometime between 1972 and 1982. In addition, the property was used for the historical deposition of dredge spoils generated during the deepening of the Savannah River beginning in the mid-1800s.

The source of detectable metals concentrations in soil and groundwater at the property has not been attributed to a specific release. The most likely source for metals at the property is the deposition of dredge spoils containing elevated metals concentrations.

Specific details regarding these releases as well as descriptions of past investigations were documented in the January 2003 Revised CSR (BBL 2003a) and subsequent Notice of Deficiency (NOD) Response Letters (BBL 2004a, BBL 2005a).

1.3 PREVIOUS ASSESSMENTS

Previous environmental assessments were performed at the VRP parcel and at surrounding properties which comprise the HSI site between 1988 and 2015.

Several investigations were conducted at the property between 1988 and 1994, prior to inclusion of the site on the HSI. The Hazardous Site Response Act (HSRA) was enacted by the GA-EPD in 1994, and the site was placed on the HSI in 1997. Orders were issued under HSRA to CSX Transportation, Inc., the extant property owner, and two prior operators on the property, Chevron (as successor to Gulf) and Powell Duffryn Terminals, Inc. Investigations were performed in 1997, 2002, and 2004 to support preparation of a CSR. Details on these

investigations are found in the January 2003 Revised CSR (BBL 2003a) and subsequent Notice of Deficiency (NOD) Response Letters (BBL 2004a, BBL 2005a).

1.3.1 VRP Implementation

Amec Foster Wheeler prepared a VRP application for the CSXT property which was approved by EPD in a letter dated July 31, 2012. Under the VRP, the following activities have been conducted at the site:

1. Semi-annual sampling and testing of groundwater from selected wells on the property and on surrounding site properties in December 2013, June 2014, December 2014, June 2015 and November 2015;
2. Installation and sampling of eight (8) additional off-property wells to further delineate the plume and to aid in groundwater modeling efforts;
3. Fate and transport model calculations to predict future plume migration and the potential for impact to downgradient receptors;
4. Semi-annual sampling and testing of surface water from the nearby drainage canal;
5. Completion of a Screening Level Ecological Risk Assessment (SLERA) to investigate potential ecological risks associated with discharged to the drainage canal;
6. Preparation of six (6) Semi-Annual Progress Reports (SAPRs) documenting activities completed during each period; and
7. Preparation of this Final CSR following the November 2015 sampling event.

2.0 PURPOSE

This CSR has been prepared on behalf of CSXT RPI, for the site located in Savannah, Chatham County, Georgia. A Voluntary Investigation and Remediation Plan (VIRP) and VRP Application were submitted on June 7, 2012 and EPD accepted the property into the VRP by letter dated July 31, 2012. Since that time, the VIRP was implemented and the work was summarized in six semi-annual progress reports submitted to EPD from January 2013 through January 2016. CSXT is submitting the required Final CSR documenting compliance with the provisions, purposes, standards, and policies of the VRP and certifying compliance with applicable cleanup standards.

3.0 CONCEPTUAL SITE MODEL

Groundwater assessment activities on site have been conducted by Amec Foster Wheeler and others between 1988 and 2015. A total of 62 groundwater monitoring wells and six piezometers have been installed on site, which includes the CSXT parcel and the immediately surrounding area. Most of the wells and piezometers have been destroyed or closed. Those utilized during the VRP sampling events are illustrated on **Figures 5**.

3.1 CHARACTERIZATION OF SUBSURFACE GEOLOGY

The geology and hydrogeology of the site discussed below are based on the data obtained and review of published literature.

The subject HSI site is located within the Coastal Plain Geologic Region. Numerous soil borings have been drilled on the site during the course of the various investigations and remedial activities. The borings encountered soils typically consisting of a surficial layer of fine to medium sands that extends to a depth of 5-10 feet bgs. These surficial soils represent dredge spoils from the Savannah River that were deposited on Hutchinson Island beginning in the mid 1800s. In some areas, localized zones of coarse sand and fine gravel are present within the upper sand layer. Underlying the upper sand unit is a gray, lignitic clay which increasing stiffness with depth as the organic content decreases. This clay unit underlying the layer of dredge spoils is interpreted to be a former marsh area and is approximately 40 feet thick. Underlying the clay unit is a well sorted quartz sand that grades from fine to very coarse just below the clay layer. **Figures 6-8** depict cross sections of the subsurface conditions.

3.2 CHARACTERIZATION OF HYDROGEOLOGY

In the Coastal Plain Geologic Region, groundwater may occur under either unconfined (water table) or confined conditions. The uppermost water-bearing unit on site consists primarily of the dredged fine to medium sands in the upper ten feet. This sand unit overlies a thick clay rich confining layer located above a confined sand aquifer unit. Recharge to the water table aquifer occurs primarily through precipitation infiltrating the upper soils and percolating downward, under the influence of gravity, to the groundwater table. Typically, the water table is not a level surface, but a subdued reflection of the land surface. Depth to the water table is variable, being dependent on many factors which include: the amount of rainfall, the permeability of the soil and the amount of groundwater being pumped in the area. The depth to water across the site in wells that are not being pumped ranges between approximately 0 and 2 feet bgs. In areas

where the shallow sand unit is present, it forms a shallow water-bearing unit that is relatively permeable. The clay unit below the sand is also saturated and displays some permeability as evidenced by the recharge of monitoring wells screened in the upper portion of the clay unit. Permeability decreases significantly below a depth of approximately 5-10 feet, at which point the clay layer is encountered.

3.2.1 Surface Water Drainage

Surface water drainage in the surrounding area is controlled by small drainage ditches near the periphery of the property and a larger drainage canal located north of the property on the adjacent SEDA Parcel B. The canal is tidally influenced and varies from virtually filled at high tide to nearly dry at low tide. In general, the surface drainage of the site is to the north toward the drainage canal although in the southern portion of the site drainage appears to be toward the Savannah River.

3.2.2 Aquifer

Groundwater in the Coastal Plain Physiographic Province typically consists of an unconfined surficial aquifer, underlain by an upper confining unit and the Floridan aquifer. Locally, the surficial aquifer, is not typically used for potable drinking water purposes, and consists of Miocene and Pliocene to Recent undifferentiated sands, which are mixed and/or interbedded with clay, silt, shells or river gravel and extends to depths of approximately 90 to 100 feet below land surface. This aquifer is underlain by a confining unit, which ranges in thickness from 200 to 400 feet and consists primarily of clay.

The Floridan aquifer system is composed of three aquifers that include the Upper, Middle and Lower Floridan aquifers. The Upper Floridan aquifer is well documented as it provides an abundant supply of potable water for the area. The underlying Upper Floridan aquifer is recorded to be nearly 400 feet thick and ranges from approximately 300 to 800 feet below land surface in this area. Water supply wells are reported to be screened primarily in this aquifer. The Middle and Lower Floridan aquifers underlie the Upper Floridan aquifer. These aquifers are also used as secondary potable water sources to the Upper Floridan aquifer.

The well elevations were surveyed and water levels in each well were measured during each sampling event. Measured groundwater elevations from the most recent events following equilibration of the water table after the groundwater remediation system was shut down indicate the presence of a small drainage divide in the central portion of the site. Groundwater

flow in the northern portion of the site is toward the canal while in the southern portion of the site it is to the south or southeast, toward the river.

3.3 HYDRAULIC CONDUCTIVITY

In-situ hydraulic conductivity tests were performed by AES in 1997 in monitoring wells MW-1, PDMW-1T, PDMW-9T, PDMW-11P, PDMW-15T and PDMW-28D. The tests were performed using the slug-test procedures described by Bouwer and Rice (1976, 1989). In the slug-test method, hydraulic conductivity is estimated from the rate of rise or fall of the groundwater level in a well after a solid of known volume, or “slug” is inserted or removed from well. The static water levels in each monitoring well were measured and recorded prior to the tests. For the “slug-in” test, the water level was raised by inserting the slug and the change in water level was measured. Water level measurements were taken over regular intervals the next 15 minutes to 60 minutes to monitor recovery of the water table. For the “slug-out” test, the water level was lowered by removing the slug and monitoring the water level recovery as described above.

Subsequent to the completion of the test, the data were analyzed using the Bouwer and Rice (1976, 1989) method. The results of the “slug-in” and “slug-out” tests were averaged to derive in-situ hydraulic conductivity values for the sand units within the shallow water bearing zone. Based on the slug-test data, the average hydraulic conductivity of these wells, was 3.5×10^{-3} cm/sec.

3.3.1 Groundwater Flow

A summary of the well depths, screened intervals, depth to groundwater and water table elevations is presented in Table 4. A potentiometric surface map of the shallow aquifer zone was prepared based on the groundwater elevation data measured in November 2015 (see **Figure 12**). Based on these data, shallow groundwater flow is generally to the north in the northern portion of the site and to the south or southeast in the southern portion of the site.

Effective porosity was assumed to be 25% (Applied Hydrology, C.W. Fetter, 1994). The formula used to calculate the groundwater flow rate is as follows (Applied Hydrology, C.W. Fetter, 1994):

$$\text{Velocity} = \frac{K i}{n_e}$$

where: K = hydraulic conductivity (feet per day)	= 2.21 ft/day
i = hydraulic gradient (feet per foot)	= 0.0069 ft/ft
n_e = effective porosity (unitless)	= 0.25

Based on the data input, an estimated groundwater velocity ranging of approximately 0.061 feet/day or approximately 22 feet per year was calculated for the site. We note, however, that constituents do not migrate at the same rate as groundwater and also attenuate as they migrate.

3.3.2 Vertical Hydraulic Gradient

Two deep monitoring wells (PDMW-28D and PDMW-29D) have been installed on site. These wells were terminated at depths of 50 and 49.5 feet below grade, respectively, and screened in the sand layer underlying the clay. Groundwater elevations measured in these two wells were somewhat lower than in other wells on site, indicating a downward vertical hydraulic gradient. Neither of these wells has exhibited impacts above risk reduction standards historically. PDMW-28D was closed some years ago. The vertical hydraulic gradient at the site was calculated by comparing groundwater elevations within the deep well PDMW-29D and the adjacent shallow well, PDMW-26T, as measured on November 11, 2015. The difference in groundwater elevation was 2.02 feet with the deeper well exhibiting the lower groundwater elevation, indicating a downward hydraulic gradient of 0.05 ft/ft.

PDMW-29D, located in the source area has exhibited very low ammonia concentrations consistently below background during 27 sampling events between 1997 and 2016 (with the exception of one outlier result in 2010), indicating some interconnection between the surficial and deeper portions of the aquifer. Ammonia concentrations in PDMW-28D were also consistently below the RRS.

4.0 DESCRIPTION OF THE RELEASE SOURCE

Results of soil and groundwater assessment activities indicate a release of regulated substances in soil and groundwater has occurred at the subject CSXT property. This section of the CSR provides a description of the source of the release.

The property was originally listed on the HSI for a known release of lead in soil and groundwater exceeding a reportable quantity based on the 1997 HSI listing.

4.1 REGULATED SUBSTANCES RELEASED FROM THE SOURCE

The regulated substances identified in soil at the property include: acenaphthene, acenaphthylene, ammonia, anthracene, arsenic, benzene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, beryllium, cadmium, chromium chrysene, dibenzo(a,h)anthracene, ethylbenzene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, lead, mercury, nickel, phenanthrene, pyrene, toluene, xylenes, and zinc.

The regulated substances identified in groundwater at the property include: The substances identified in groundwater on the property include: acenaphthene, acenaphthylene, ammonia, anthracene, arsenic, benzene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chromium, chrysene, ethylbenzene, fluoranthene, fluorene, lead, naphthalene, nickel, phenanthrene, pyrene, toluene, xylenes, and zinc.

4.2 CHRONOLOGY OF THE RELEASES

The source of detectable metals concentrations in soil and groundwater at the property has not been attributed to any specific release. The most likely source for metals at the property is the deposition of dredge spoils from the Savannah River which contained metals concentrations exceeding regulatory standards. The dredging operations began in the mid 1800s and continued until sometime before the site was developed in the 1920s.

The exact dates of the releases that have occurred during the operating history of the property could not be accurately determined. The majority of the petroleum releases are thought to have occurred while the former bulk petroleum storage facility was operational, between the 1920s and the 1970s. Such releases would have likely included: disposal of tank bottoms to a settling pit located at the northern end of the property; depositing of tank bottoms on the ground surface

adjacent to the tanks across the property; a reported release of approximately 1 to 2 tons of liquid fertilizer that occurred sometime between 1972 and 1982.

5.0 DELINEATION OF SOIL CONTAMINATION

Soil samples were collected for laboratory analysis during several phases of investigation conducted by various consultants between 1988 and 2009. These assessments included soil sampling from 62 groundwater monitoring wells and several hundred soil borings.

5.1 PRELIMINARY INVESTIGATIONS

Several investigations were completed prior to the subject property being listed on the HSI. The first assessment was conducted in 1988 by Chattahoochee Geotechnical Consultants and included a broadly scoped assessment of a large area of Hutchinson Island which included the installation of two soil borings on the property, the exact locations of which are not known. Two composite soil samples were collected and tested for metals and total petroleum hydrocarbons (TPH). TPH was detected at a concentration of 740 mg/kg in one soil sample. Metals were also detected in each sample, but none exceeded the HSRA NCs subsequently established in 1994.

In 1992, Kemron conducted an assessment of the former bulk storage facility. The assessment included the collection of 25 soil samples which were tested for metals, SVOCs, and TPH. One sample was analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX). Lead, arsenic chrysene and benzo(a)pyrene were detected in concentrations exceeding the 1994 HSRA NCs. No BTEX constituents were detected above their HSRA NCs.

In August 1997, Applied Engineering and Science, Inc. (AES) conducted a soil sampling program in potential source areas. The sampling locations were selected to represent the most highly impacted areas of the former bulk storage facility, as evidenced by surficial staining, distressed vegetation or other visible indications of impacts. Eight soil samples were collected and tested for VOCs, SVOCs, metals, total Kjeldahl nitrogen (TKN), ammonia, nitrates and nitrites. No VOCs were detected above HSRA NCs. Chrysene and lead were the only regulated constituents detected above their respective NCs.

Soil sampling programs conducted by AES in 1997 and 2004 delineated concentrations of PAHs, volatile organic compounds (VOCs), metals and ammonia in soil to their background concentrations. A total of 127 soil samples were collected and analyzed to determine which substances exceed the applicable Type 3/4 RRSs. Those COCs detected above their respective RRSs were addressed by AES through a series of interim corrective actions as described in Section 9.0 and site specific risk analyses for PAHs, BTEX, and ammonia. The

AES interim corrective actions did not fully address all metals-impacted soils. However, these areas were addressed through additional assessment as described in Section 5.5.

5.2 AMEC FOSTER WHEELER INVESTIGATIONS

Amec Foster Wheeler (and its predecessor companies) continued the corrective action effort on behalf of CSX-RPI. A Corrective Action Plan was prepared in 2004 to address outstanding issues related to soil and groundwater impacts. After several revisions, a Modified Corrective Action Plan (MCAP), dated March 14, 2006, was approved by EPD. The MCAP included two phases of soil assessment which were implemented as described below. Metals delineation was the initial phase of corrective action performed under the MCAP.

Two soil delineation programs were performed by Amec Foster Wheeler in 2006 and 2007 to facilitate completion of the soil corrective actions outlined in the MCAP. The procedures and findings of these programs are detailed in the following subsections.

5.2.1 Analytical Parameters Selected

Soil samples collected during previous sampling activities conducted between 2006 and 2007 by Amec Foster Wheeler were analyzed for volatile organic compounds (VOCs, SW-846 Test Method 8260B) PAHs (SW-846 Test Method 8270C) and metals (SW-846 Test Method 6010).

5.2.2 Sampling and Analysis Procedures

Amec Foster Wheeler employed the following procedures and reports by other consultants refer to similar procedures.

5.2.3 Sampling Equipment and Collection Techniques

Soil samples were collected from direct-push (Geoprobe) borings using a four-foot long stainless steel sampling tube which is lined with a polyethylene sleeve and driven into the ground to the desired sampling depth.

5.2.4 Soil Sample Handling and Preservation Techniques

The collected soil samples were removed from the sampling device and placed in clean sample containers supplied by the laboratory. Soil samples for laboratory testing of VOCs were collected in accordance with SW-846 Method 5035 (the syringe method) and preserved in the field with sodium bisulfate and methanol. Samples were collected for metals, pesticide and herbicide analysis in unpreserved containers. Clean nitrile gloves were worn during all

sampling activities and the gloves were then discarded. Following sample collection, the samples were maintained on ice in a cooler until they were transferred to the laboratory.

5.2.5 Equipment Decontamination Procedures

Soil sampling tools and equipment, including drill rigs were decontaminated prior to beginning work on the site. During drilling operations, only clean drilling tools were used in each borehole. The split spoons and direct-push sampling tubes were decontaminated between samples and clean polyethylene liners were used for each Geoprobe sample. Clean nitrile gloves were used during the collection of all soil samples. Gloves were changed prior to the collection of each soil sample.

5.2.6 Chain-of-Custody Procedures

All collected samples were logged on a chain-of-custody form that was signed by the Amec Foster Wheeler field representative and the laboratory representative upon release of the samples to the laboratory. Chain-of-custody documentation are provided with the laboratory reports in Appendix A.

5.2.7 Laboratory Analytical Procedures

Following delivery to the laboratory, selected soil samples collected by Amec Foster Wheeler were analyzed for Ammonia using SW-846 Test Method 3-154, VOCs using SW-846 Test Method 8260B, PAHs using SW-846 Test Method 8270C, metals using SW-846 Test Method 6010C and 7471B.

5.2.8 Quality Control Procedures

Quality control samples were prepared and analyzed during the assessment. Duplicate soil and groundwater samples were tested. Trip blanks and field blanks were included with the samples submitted to the laboratory. The trip blanks were provided by the laboratory and consisted of 40-ml vials filled with water. Results of the trip blank analyses are included in the laboratory reports. Results of Surrogate analysis are also included in the laboratory reports. Backup QA/QC data for these samples were included in laboratory reports for each assessment phase.

The soil samples collected by Amec Foster Wheeler were submitted to TestAmerica Laboratories for laboratory analysis. TestAmerica maintains a National Environmental Laboratory Accreditation Conference (NELAC) certification for the analysis of ammonia, volatile organics, PAHs and metals.

All downhole equipment, tools and materials were decontaminated prior to use and between each boring to minimize the potential for introduced and/or cross contamination. Decontamination of equipment and appropriate sampling protocols were observed throughout the drilling operation to preclude the introduction of contaminants. The field work was supervised by environmental professionals and the work was conducted under the provisions of our Health and Safety Plan.

5.2.9 Summary of Pertinent Soil Testing Data

In accordance with the MCAP, Amec Foster Wheeler implemented the first phase of the soil sampling program at the property between May 1 and 6, 2006. The purpose of the program was to: 1) confirm that lead-impacted soil had been removed from Lead Area 1 by collecting confirmatory samples every 25 feet (ft) along the perimeter of the former excavation 1; 2) update and refine the estimated quantity of lead-impacted soil in Lead Areas 2 through 6; 3) assess arsenic concentrations in soil in the immediate vicinity of PDMW-31R; and 4) refine the estimated quantity of PSM present based on the observation of petroleum source material (PSM) at two boring locations in April 2006.

Amec Foster Wheeler directed the advancement of 145 soil borings at the Property using a Geoprobe direct-push drill rig. The locations of these borings are illustrated on **Figure 3**. Boring log data was not collected; however observations regarding the presence of PSM were noted as indicated in Table 2. Ninety of the borings were installed to assess the extent of lead in soil and 55 were installed to assess the extent of PSM. An additional four borings were installed using a hand auger to assess arsenic concentrations in soil around PDMW-31R. Each Geoprobe soil boring was installed to depths ranging from 4 to 8 ft below ground surface (bgs) and the four hand auger borings were installed to 2 ft bgs. The soil from each area was assessed as follows:

Lead in Soil Borings: Unsaturated soil samples from each boring were screened for lead in 1-ft intervals using an Innov-X portable X-Ray Fluorescence (XRF) analyzer. The purpose of using the XRF was to test the effectiveness of XRF technology as a screening tool.

Amec Foster Wheeler screened 167 samples from 98 locations using the XRF. Seventy-three of these samples, including 35 confirmation samples from the perimeter of Lead Area 1, were sent to Severn Trent Laboratories, Inc. (STL) for lead analysis by SW846 method 6010B to assess the correlation between XRF and fixed-laboratory results. The comparison of STL

results to the XRF readings found that correlation between the XRF and fixed-laboratory results was reasonable considering the heterogeneity of the soil ($R^2 = 0.61$). XRF and fixed-laboratory results are presented in Table 1.

PDMW-31R Area Borings: The March 2006 groundwater sampling event identified arsenic in the groundwater sample from PDMW-31R at a concentration of 72 micrograms per liter ($\mu\text{g/L}$). Amec Foster Wheeler collected and analyzed soil samples in accordance with the March 14, 2006 NOD response letter to the GAEPD. The boring locations were positioned within 20 ft to the north, south, east, and west of the well (Arsenic Area 1). Amec Foster Wheeler used the XRF analyzer to field screen recovered unsaturated soil from each boring in 1-ft intervals for arsenic. Of the eight soil samples screened, four were submitted to STL for arsenic analysis (Table 2). Two of these samples contained arsenic at concentrations exceeding the Type 3/4 RRS.

PSM Delineation Borings: Soil from the 55 borings was visually screened for the viscous, thick, weathered free product that is characteristic of PSM present at the Property. Where present, the depth and thickness of PSM was documented. The locations selected were based on previously delineated boundaries of PSM. The delineation was based on stepping out every 25 ft from impacted edges until no signs of PSM were identified. The PSM areas defined during this assessment were identified as PSM Areas 2, 3, and 4 (**Figure 4**).

5.2.10 Soil Delineation Results and Conclusions

The results of the May 2006 delineation program showed that much of the lead-impacted soil in Lead Area 1 was removed during the 2005 excavation program as demonstrated by lead concentrations in soil samples from borings LIS-038, LIS-039, LIS-041, LIS-042, LIS-043, LIS-048, LIS-049, LIS-051, LIS-055, and LIS-063, being below the 400 mg/kg Type 3 RRS (as determined by Method 6010B.) Samples LIS-040, LIS-046, LIS-050, and LIS-052 contained lead at concentrations greater than the 400 mg/kg indicating that further excavation was necessary in several isolated areas along the boundary of Lead Area 1.

XRF screening results from five samples collected in Lead Area 6 did not confirm lead at concentrations exceeding 400 mg/kg. The highest screening concentration for lead was 52.97 mg/kg. The two samples with the highest concentrations were sent to STL for analysis. Both lead results were less than 50 mg/kg. The original sample PDMW31R-2 (860 mg/kg from 0-1 ft bgs) was collected in 2001. A resampling event in 2004 found concentrations ranging from 120

mg/kg from 0-6 inches (in.) bgs to 55 mg/kg from 6-12 in. bgs in the same location as the 2001 sample. Because Amec Foster Wheeler's five delineation sample results were consistent with the two 2004 samples, Amec Foster Wheeler concluded that the single lead-impacted soil sample identified in 2001 was either anomalous, extremely isolated, or has since been attenuated.

Two of the four samples collected from Arsenic Area 1 exceeded the 38 mg/kg Type 3/4 RRS for arsenic. Although Arsenic Area 1 was not delineated during the program, it is apparent that soil in the vicinity of PDMW-31R may be contributing to arsenic concentrations in groundwater. As such, soil corrective action measures were planned for Arsenic Area 1.

PSM was encountered in 60 of the 145 soil borings drilled during the program. The results further refined the interpreted boundaries of PSM Areas 2 and 3. The 13 borings installed along the northern edge of the Property confirmed the presence of PSM across an area of at least 0.25 acre. It is notable that historic maps indicated a former tank bottoms settling pit in this area. Based on the findings, this area was designated as PSM Area 4 and was scheduled for corrective action.

5.2.11 Site-Wide PSM Investigation

As Amec Foster Wheeler's soil corrective action program for metals described progressed, three previously unidentified areas containing PSM were found either along abandoned piping or adjacent to metals impacted areas. These areas were designated as PSM Areas 5, 6, and 7. Based on these findings, Amec Foster Wheeler re-evaluated the existing data for the Property and concluded that a thorough site-wide assessment of PSM was warranted. Amec Foster Wheeler established a grid across the Property and initiated an investigation program using a Geoprobe direct-push drill rig. A licensed land surveyor was subcontracted prior to initiating the site-wide investigation to ensure proper coverage near the Property boundaries.

Amec Foster Wheeler advanced 260 soil borings on a 50 ft by 50 ft grid in areas of the Property where excavation activities had not previously been performed. Each boring was installed to a depth of 8 ft bgs. Each boring was logged for general soil characteristics and the presence or absence of PSM based on visual and olfactory screening. In the interest of expediting the program and given the extensive geologic data available for the site, formal logs were not created for each boring. A photoionization detector (PID) was used periodically during the

assessment to screen impacted soil. The majority of the PSM is aged, highly weathered, viscous material that in general does not result in elevated PID readings.

Eighteen (18) of the grid locations in six general areas confirmed the presence of PSM. These areas were designated PSM Areas 8 through 13. An additional 55 borings were advanced to delineate the six new PSM areas. Table 2 summarizes the observations from each of the 315 soil borings.

The soil and PSM delineation data were utilized by Amec Foster Wheeler to bound the extent of soils requiring corrective action as described in Section 9.0.

5.3 BACKGROUND SOIL CONCENTRATIONS

Background concentrations for COCs in soil were calculated during previous assessment work conducted by Blasland, Bouck & Lee, Inc. and submitted to EPD in the Compliance Status Report Notice of Deficiency Response Letter: Hutchinson Island, Savannah, Georgia, prepared by Blasland, Bouck & Lee, Inc., February 2005. These same background values were incorporated into Amec Foster Wheeler's Revised CSR, dated February 29, 2008. The soil background concentrations are included in Tables 9-1 and 9-2.

6.0 DELINEATION OF GROUNDWATER CONTAMINATION

Numerous groundwater monitoring events have been conducted for the project since 1997. A total of 62 monitoring wells have been installed on the site, which includes the adjacent properties, during the course of the various assessments. Monitoring wells MW-1 through MW-5, TMW-1 through TMW-4R and PDMW-1T through PDMW-34T were originally installed by AES in the 1990s. PDMW-35P through PDMW-53, EW-1, and MW-201 through MW-204 were installed by Amec Foster Wheeler between 2008 and 2015. The wells installed on the site were intended to evaluate the horizontal and vertical extent of contamination.

6.1 ANALYTICAL PARAMETERS SELECTED

Groundwater samples collected by Amec Foster Wheeler were submitted to TestAmerica Laboratories of Savannah, Georgia for analysis of ammonia using EPA method 350.1, polycyclic aromatic hydrocarbons (PAHs) using SW-846 method 8310, BTEX using SW-846 method 8260 and total metals (As, Cr, Pb, Ni, Zn) using SW-846 method 6010. In the event that turbidity could not be reduced to below 10 nephelometric units (NTU) after 2 hours of purging, both filtered and unfiltered metals samples were collected at the respective well.

6.2 MONITORING WELL LOCATIONS AND CONSTRUCTION METHODS

The monitoring wells were generally installed in borings drilled with hollow-stem augers. Due to equipment inaccessibility, monitoring wells PDMW-28 through PDMW-52 were installed in borings drilled using a 6-inch diameter hand auger (see Table 3).

6.2.1 Type of Well Casing Material

The monitoring wells installed on site consist of Schedule 40 PVC well casing and screen with threaded joints. Most of the monitoring wells on site consist of two-inch diameter PVC pipe. PDMW-35P through PDMW-38P and PDM-45R were constructed with one-inch diameter PVC. MW-201 through MW-203 and EW-1 were constructed of four-inch diameter PVC.

6.2.2 Screen Slot Size and Length

Each of the drilled wells on site was constructed with 0.01-inch factory slotted PVC well screen. Monitoring wells PDMW-23R, PDMW-31R2, PDMW-40R, and MW-201 utilized a 7-foot screen length. Monitoring wells MW-3R, PDMW-8R, PDMW-10R, PDMW-27R, PDMW-45R, TMW-4R, MW-203 and MW-204 utilized an 8-foot screen length. MW-1, MW-2, PDMW-35P, PDMW-36P,

PDMW-38P, and EW-1 utilized a 10-foot screen length. All other monitoring wells on site utilized a 5-foot screen length.

6.2.3 Filter Pack Materials and Length

Washed 20/30 sieve size quartz sand was used to create the filter pack around the well screen in each of the wells. The sand extended to a height of approximately one to two feet above the top of the screen.

6.2.4 Method of Filter Pack Emplacement

The sand pack in the augered wells was placed around the screen by pouring the sand through the hollow-stem augers while simultaneously raising the augers to prevent bridging of the sand within the augers. Sand was placed around the hand augered well screens by pouring the sand around the well screen from the surface. The filter pack was then sealed from above with a one to two-foot layer of hydrated bentonite clay.

6.2.5 Surface Seal

The wells were grouted to within approximately six inches of the ground surface with Portland cement grout (Type II well construction). These wells were then topped with stick-up lockable steel covers.

6.2.6 Well Development Methods and Procedures

The initial well development procedures employed by AES included development of shallow wells using disposable bailers and the removal of at least five well volumes of water. The two deep wells were developed with submersible pumps and the removal of 100-200 gallons of water.

Monitoring wells installed by Amec Foster Wheeler were developed using peristaltic pumps or submersible pumps at least 24 hours after installation. The parameters temperature, pH, specific conductivity and turbidity were periodically monitored during well development. Development continued until these parameters stabilized pursuant to EPA methodology and a minimum of five well volumes of water were removed during well development.

6.3 SAMPLING AND ANALYSIS PROCEDURES

6.3.1 Groundwater Elevation

During each of Amec Foster Wheeler's groundwater monitoring events, groundwater levels were measured in each well from the top of the well casing. As discussed in Section 5.4, a survey was conducted to measure the elevation of the top of each well casing for preparation of potentiometric surface maps (see **Figure 12**).

6.3.2 Well Evacuation Procedures

Prior to resampling of existing wells, the wells were purged using a peristaltic pump and Teflon tubing. During purging, the parameters temperature, pH, specific conductivity and turbidity were monitored and submitted in the previous reports. Purging continued until these parameters stabilized pursuant to EPA methodology and a minimum of three well volumes were removed or the well went dry.

6.3.3 Groundwater Sampling, Handling and Preservation

Immediately following purging, groundwater samples were collected using a peristaltic pump and low-flow sampling procedures. Clean nitrile gloves were worn during all purging and sampling activities and were changed between each well location.

Samples were collected in clean sample containers, supplied by the laboratory, which contained the appropriate preservative. 40ml glass vials were used for the collection of groundwater samples for VOC analysis. VOC samples obtained by Amec Foster Wheeler were collected using a peristaltic pump by allowing the tubing to fill and then sealing the end near the pump, removing the tubing from the well and allowing it to gravity drain into the VOC vials to minimize turbulence and reduce the potential for volatilization (the straw method). The vials were completely filled, with no bubbles or headspace. Samples to be tested for PAHs, metals and ammonia were collected using a low flow peristaltic pump with the discharge line discharging directly into the sample container. Following sample collection, the bottles were stored on ice in a cooler until they were transferred to the laboratory. The samples were maintained under strict chain-of-custody control from the time they were collected until they were relinquished to the laboratory.

6.3.4 Decontamination Procedures

Decontamination procedures consisted of the use of clean, unused tubing at each sampling location. Nitrile gloves were also worn and changed between each sampling location. Tubing was disposed of after each use. No equipment was used to sample more than one well.

6.3.5 Laboratory Analytical Procedures

The samples collected during Amec Foster Wheeler's pre-VRP monitoring events were submitted to TestAmerica Laboratories in Savannah, Georgia and tested for the presence of ammonia, VOCs, PAHs and metals.

Groundwater samples collected by Amec Foster Wheeler in 2013-2015 VRP sampling events were submitted to TestAmerica Laboratories and tested for the presence of ammonia, metals, and in certain cases, VOCs, PAHs, nitrate and nitrite. The exact suite of constituents varied for each well in accordance with the sampling schedule and the access agreements negotiated for the sampling of off-site wells.

6.3.5.1 Quality Control Samples

The groundwater samples were maintained under chain-of-custody control and submitted to the analytical laboratory for testing. Duplicate samples and field blanks were tested. Trip blanks prepared by the laboratory were also submitted for testing. QA/QC was conducted in accordance with the laboratory analysis selected. Backup QA/QC data for these samples was included in the laboratory reports. For quality assurance/quality control (QA/QC) purposes, duplicate, equipment blank, and matrix spike (MS)/matrix spike duplicate (MSD) samples were collected during each event. Additionally, trip blank and temperature blank samples accompanied each sample shipment.

6.3.5.2 Chain-of-Custody Procedures

Samples collected during the assessment were delivered to the analytical laboratory under strict chain-of-custody protocol. From the time of collection until they were released to the laboratory, the samples were stored in ice-filled coolers. Chain-of-Custody records documenting the transfer of the samples to the laboratory were maintained and are included in the laboratory reports in Appendix A.

6.4 BACKGROUND GROUNDWATER QUALITY

Background concentrations for the COCs detected on site were calculated by BBL and were previously submitted in Amec Foster Wheeler's Revised 2009 CSR and are included in Table 9-2.

6.5 SUMMARY OF GROUNDWATER TESTING RESULTS

Groundwater monitoring has occurred on numerous occasions at the site beginning in October 1997. The next sampling event was conducted by AES in August 1999. A series of quarterly monitoring events were then undertaken by AES in November 1999, February 2000, May 2000, August 2000 and January 2001. The cumulative groundwater testing results for these and all other sampling events are summarized in Table 7. The results of the groundwater monitoring events completed by AES were generally consistent with those obtained by Amec Foster Wheeler during the ensuing years. Due to the volume of data collected, the focus of this discussion will be on the Amec Foster Wheeler sampling events conducted between 2008 and 2015. The most recent groundwater testing results are summarized on **Figure 5** and on **Figures 8-11**. Contaminant trend graphs for COCs are presented in Appendix D.

6.5.1 Pre-VRP Sampling and Testing

Nine groundwater monitoring events were conducted by Amec Foster Wheeler following the installation of the groundwater treatment system and prior to the Property's entry into the VRP.

This section presents an overview of the results for these groundwater sampling events. More detailed discussions of the results were provided in the Corrective Action Annual Reports (CAPR) dated, April 6, 2010, March 30, 2011 and March 12, 2012 which were previously submitted to EPD. Table 7 summarizes the data for these and all other groundwater monitoring events.

As reported in the 2009 Annual Groundwater Corrective Action Progress Report, between April 2008 and December 2009, four groundwater monitoring events were conducted at the property, which included the sampling of 45 monitoring wells. The data obtained during these four sampling events are summarized as follows:

Ammonia was detected at concentrations exceeding its RRS of 30 mg/L in up to 15 wells during the four sampling events. The highest ammonia concentrations were observed in the northern portion of the Property, particularly in TMW-1, which ranged from 1,400 mg/L in April 2008 to

330 mg/L in December 2009. The 330 mg/L value was not consistent with historical data for this well. Each of the ammonia results from TMW-1 was significantly below the historic high value for this well of 18,000 mg/L which was detected in 2000, although all subsequent results from TMW-1 were well below this historic high value. PDMW-26T, located near TMW-1 consistently exhibited ammonia at between 500 and 600 mg/L. Elevated ammonia concentrations were also detected in the east-central portion of the Property in EW-1 and MW-204 at concentrations of up to 520 mg/L. The RRS exceedances were generally located in these two areas. Ammonia concentrations toward the periphery of the property typically were significantly lower.

Lead was detected in excess of RRS in five wells (MW-3T, PDMW-13P, TMW-1, EW-1 and MW-204). The lead concentrations were generally consistent with historical observations. Arsenic was detected in excess of its RRS in MW-8R, TMW-1 and PDMW-7P; however, only the result in TMW-1 was consistent with historical data. Chromium, nickel and zinc were not detected above their respective RRS.

Benzene and naphthalene were the only other COCs detected above their respective RRS in groundwater. Benzene was detected in TWM-1 and MW-204 while naphthalene was detected in TMW-1, MW-204, PDMW14-TR and PDMW-23R.

6.5.2 2010 Groundwater Monitoring

As reported in the 2010 Annual Groundwater Corrective Action Progress Report, four quarterly groundwater monitoring events were conducted at the Property which included as many as 43 wells. As described in the CAPR, the wells sampled and specific analytes varied during each event in accordance with the MCAP. The data obtained during these four sampling events are summarized as follows:

Ammonia was detected in excess of its RRS in 16 wells during the 2010 annual monitoring period. The ammonia testing results were generally consistent with the 2009 results, with the highest concentrations detected in TMW-1 (maximum concentration of 3,200 mg/L) and elevated concentrations remaining in PDMW-26T (520 mg/L maximum), EW-1 (580 mg/L maximum) and MW-204 (300 mg/L maximum). The size and shape the ammonia plume appeared similar to previous configurations, indicating that the plume was not migrating significantly.

Lead concentrations were generally consistent with historical observations with only one RRS exceedance in MW-1 (0.04 mg/L). A new Type 1/3 groundwater RRS of 0.010 mg/L for arsenic was established in December 2009. The accepted background concentration for arsenic at the Property is 0.018 mg/L, which was adopted as the new Type 3/4 RRS. As a result, a greater number of monitoring exhibited arsenic exceedances, only one of which (PDMW-8R) would have exceeded the previous standard. Chromium, nickel and zinc were not detected above their respective RRS and were eliminated from upcoming groundwater sampling events at the Property.

For the well identified as PDMW-14TR, the concentration of naphthalene in March 2010 was 28 µg/L, non-detect in June and September 2010, and 320 µg/L in December 2010. The December result is within the historical range, but higher than naphthalene concentrations detected since 2006. Benzene was only detected on two occasions in TMW-1 and in each case was above its RRS.

6.5.3 2011 Groundwater Monitoring

As described in the 2011 Annual Corrective Action Progress Report, two semi-annual groundwater monitoring events were conducted in June and December 2011, which included sampling up to 40 wells. The data obtained during these four sampling events are summarized as follows:

Ammonia was detected at concentrations exceeding the RRS in 18 wells in June 2011 and 12 wells in December 2011. Ammonia exceedances in 2011 were generally consistent with historic data with the exception of somewhat higher than normal concentrations noted in PDMW-1T and PDMW-2T during the June 2011 monitoring event. Consistent with previous monitoring events, the highest ammonia concentrations were noted in the northern portion of the site (TMW-1 and PDMW-26T) and in the east-central portion of the Property (EW-1 and MW-204). The highest concentration observed (4,600 mg/L) was again detected in TMW-1. Again, the size and shape the ammonia plume appeared similar to previous configurations, indicating that the plume was not migrating significantly. The magnitude of the ammonia concentrations had generally decreased since start-up and operation of the groundwater remediation system.

One lead exceedance was noted in the sample collected in June 2011 from monitoring well PDMW-13P. Lead concentrations in 2011 were generally consistent with historic observations and no other exceedances of the lead RRS were observed in 2011. Arsenic was detected at

concentrations exceeding its RRS in eight wells in June 2011 and four wells in December 2011. Arsenic detections are generally consistent with historic data with the exception of one exceedance noted in PDMW-45R during the June 2011 monitoring event. The arsenic detection in PDMW-45R was the first exceedance detected in the well since January 2004. However, the June 2011 arsenic concentration was within the same order of magnitude as historic detections in PDMW-45R.

Naphthalene was detected in both samples collected from well PDMW-14TR in 2011 at concentrations exceeding its RRS. No other samples analyzed for naphthalene in 2011 had concentrations exceeding the RRS. Naphthalene concentrations at well PDMW-14TR in 2011 were generally consistent with historic data and lower than an anomalously high result observed in December 2010.

6.5.4 Post-VRP Sampling and Testing

Following the Property's entry into the VRP, Amec Foster Wheeler prepared a Sampling and Analysis Plan (SAP) for the semi-annual groundwater monitoring events to be undertaken in accordance with the requirements of the VRP. The general sampling and testing protocols outlined in the SAP were similar to those previously employed by Amec Foster Wheeler, with the exception that the suite of COCs to be tested for had been reduced in certain wells with an established history of compliance for those particular COCs and that nitrate, a breakdown product of ammonia, would be included in the analyses. An access agreement between CSXT and SEDA to allow for the installation of several wells on the SEDA property also prohibited the testing of constituents other than ammonia and nitrate from wells on the SEDA property.

Five sampling events have occurred to date under the VRP. These events took place in December 2013, June 2014, November 2014, May 2015 and November 2015. The results of the VRP semi-annual monitoring were submitted to EPD in Semi-Annual Progress Report (SAPR) Nos. 2 through 6 between January 2014 and January 2016 and are discussed below. Groundwater testing results for the most recent sampling event are illustrated on **Figure 5** and the cumulative groundwater testing data is summarized in Table 7. **Figures 8-11** depict isopleths of the primary constituents of concern (COCs) in groundwater. COC trend graphs are also included in Appendix D.

The first VRP sampling event included testing of groundwater from 18 wells. The number of wells utilized in the VRP sampling events had been reduced from the monitoring program under

the MCAP due to the consistent lack of detection of COCs above applicable RRS in numerous wells. Several of the wells located in the interior of the site had been eliminated as groundwater conditions had been well established in this area over the previous sampling events. The VRP sampling focused on presumed source areas and near the Property boundaries as well as off-site locations downgradient of the source areas. The source areas were monitored to continue to assess the most heavily impacted areas and evaluate whether discontinuing the groundwater recovery would have adverse effects. Subsequent monitoring events incorporated newly installed wells on the adjacent properties, primarily located downgradient of ammonia contaminant plumes. The downgradient areas were investigated and monitored with the newly installed wells to act as “point of demonstration” wells on SEDA Parcel B. They were also used to provide data for groundwater modeling input and validation and to assess the condition of the groundwater in the immediate vicinity of the drainage canal on SEDA Parcel B.

First VRP Sampling Event

The first VRP monitoring event was conducted in December 2013 and included sampling 18 wells. MW-2 was intended to be sampled, but could not be located. Groundwater monitoring results indicated that of the 18 wells sampled, five exceeded established background concentrations for ammonia. The concentrations of ammonia in TMW-1 and MW-1, the wells located in the area of historically highest ammonia impacts, had decreased substantially since the last sampling event in 2011. Lesser decreases in ammonia concentrations were observed in the other three wells with ammonia above background concentrations. Significant changes in ammonia concentrations were not noted in those wells in which ammonia was detected below established background concentrations.

VOCs were detected above laboratory reporting limits in only one well, TMW-1. Total BTEX concentrations in TMW-1 remained generally consistent with previous data and benzene remained the only VOC constituent detected above its RRS at this location or in any of the wells sampled.

PAHs were detected above laboratory reporting limits in only one well, TMW-1. During previous sampling events, naphthalene was the only PAH constituent detected above its RRS of 20 µg/L in this well. The naphthalene concentration of 5.2 µg/L was below its RRS for one of the few times since this well began to be sampled in 2000.

The metals lead and arsenic were the only metals detected above applicable RRS. Lead was detected above its RRS of 15 µg/L in three wells (EW-1, PDMW-13P and PDMW-32R). PDMW-32R had its first exceedance of the RRS for lead and the other wells were consistent with previous results. Arsenic exceeded its RRS of 18 µg/L in two wells, TMW-1 and PDMW-26T. Both of these results were consistent with previous data.

Six of the wells sampled contained detectable levels of nitrate although only in TMW-1 did the nitrate concentration exceed the drinking water standard of 10 mg/L.

Second VRP Sampling Event

The second VRP monitoring event was conducted in June 2014 and included the sampling of all 19 wells originally specified in the SAP as well as seven additional wells installed on the Hutchinson Island Ventures property to the east (PDMW-46), the Spartan Hutchinson Island Investments, LLC property to the west (PDMW-47 and PDMW-48) and the SEDA Parcel B property (PDMW-49 through PDMW-52).

Ammonia concentrations were above the RRS for ammonia in six wells, including: TMW-1, EW-1, PDMW-8R, PDMW-26T, PDMW-47 and PDMW-48. The concentrations of ammonia in TMW-1 and EW-1, the wells located in the area of historically highest ammonia impacts remain elevated relative to the rest of the site. The highest ammonia concentration observed during the most recent sampling event was in TMW-1 at 2,600 mg/L, which was slightly lower than the previous event and significantly lower than the historic high. The ammonia concentration in PDMW-26T, located in the vicinity of TMW-1, remained consistent with historic ammonia levels in this well. Ammonia in PDMW-48, located downgradient to TMW-1, was approximately two orders of magnitude below the ammonia concentration of TMW-1.

EW-1 exhibited ammonia at a concentration of 1,100 mg/L, which was an increase from the previous testing event in December 2013 (400 mg/L), and its highest to date, but consistent with reasonably expected variation for its relatively new data set (first sampled in 2008).

Newly installed wells, PDMW-47 (located west of the CSXT parcel) and PDMW-48 (located between the area of highest ammonia concentrations and the drainage canal) exhibited ammonia at 72 mg/L and 27 mg/L, respectively.

The remaining 17 wells that were sampled exhibited ammonia concentrations below the site-specific background concentration of 15 mg/L. Some minor fluctuations were noted among

these samples compared with previous data, but the data were generally consistent with previous results.

The newly installed wells located adjacent to the drainage canal (PDMW-49 through PDMW-52) exhibited only very low concentrations of ammonia, below 1 mg/L.

Third VRP Sampling Event

The third VRP monitoring event was conducted in June 2014 and included the sampling of 29 wells on the subject Property and immediately surrounding properties, including a new well (PDMW-53) located on the Spartan Hutchinson Island Investments property west of the subject Property. The following observations are provided based upon the data obtained:

Ammonia concentrations were above the established site-specific background concentration of 15 mg/L in 12 of the 29 wells tested. Seven of the test results exceeded the RRS for ammonia, including: EW-1, MW-204, TMW-1, PDMW-8R, PDMW-26T, PDMW-40R and PDMW-47. Ammonia concentrations in most of the wells remained consistent with those measured during the previous sampling event in June 2014. Ammonia concentrations in EW-1, MW-204 and PDMW-26T decreased. The ammonia concentration in TMW-1 was higher when compared to the June 2014 sampling event, but was consistent with recent historical data.

The concentrations of ammonia in TMW-1 and EW-1, the wells which have historically exhibited the highest ammonia impacts, remained elevated relative to the rest of the site. The highest ammonia concentration observed during the most recent sampling event was in TMW-1 at 3,900 mg/L. PDMW-48 located on the SEDA Parcel B, downgradient of TMW-1, exhibited an ammonia concentration of 22 mg/L, again over two orders of magnitude below the concentrations of TMW-1, located nearby and upgradient.

During the June 2014 monitoring event, EW-1 had exhibited its highest concentration of ammonia to date (1,100 mg/L) and the assumption was made at that time that the elevated concentration was within a normal range of fluctuation. The November 2014 data supported the previous assumption as it showed the ammonia concentration in EW-1 at less than half the June 2014 concentration and consistent with 2011 data.

PDMW-47 (located west of the CSXT parcel) exhibited ammonia at 110 mg/L during the June 2014 sampling event. A new well PDMW-53, was installed in the area west of PDMW-47. This

well exhibited an ammonia concentration of 5.5 mg/L, below the established background concentration of 15 mg/L.

Some minor fluctuations were noted among the remaining wells compared with previous data, but the current data were generally consistent with previous results.

Three of the 29 wells sampled (TMW-1, PDMW-26T and EW-1) exhibited nitrate above the laboratory reporting limits. Of these, only TMW-1, with a nitrate concentration of 120 mg/L (down from 170 in June 2014) exceeded the drinking water standard of 10 mg/L. These results are also generally consistent with the previous testing results.

PAHs were only detected in monitoring well TMW-1 and naphthalene was the only HSRA-regulated PAH detected above laboratory reporting limits at that location. The naphthalene concentration of 44 µg/L at TMW-1 was above its RRS of 20 µg/L, which it consistently has been since this well began to be sampled in 2000. The naphthalene concentration at TMW-1 was also higher than the previous sampling event, but was consistent with recent historical results.

VOCs were only detected in monitoring well TMW-1. Benzene and xylenes were the only VOCs detected in this well and benzene was the only VOC detected above its RRS of 31.2 µg/L. The benzene concentration of 80 µg/L was consistent with previous results and the xylene concentration of 420 µg/L was somewhat higher than previous results (though still well below its RRS of 10,000 µg/L).

Metals were detected in four of the wells tested, including: EW-1, TMW-1, PDMW-13P and PDMW-32R. Total metals concentrations in groundwater were typically below site-specific background concentrations and applicable RRS with the exceptions noted below. Based upon the findings from the June 2014 sampling event for PDMW-13P, in which lead was detected above its RRS of 15 µg/L, PDMW-13P was resampled in August 2014 for both total and dissolved lead analyses. The retesting indicated a total lead result of 23 µg/L while the dissolved lead result was below the laboratory reporting limit of 10 µg/L. This result indicates possible contribution from suspended sediment in the samples, even though the turbidity of the dissolved lead sample was relatively low (5.7 NTU). During the November 2014 sampling event, total lead was detected at 33 µg/L in PDMW-13P (and 39 µg/L in a duplicate sample) with a turbidity of 7 NTU. These concentrations are consistent with the earlier results and well below the maximum concentration of 280 µg/L recorded in June 2011. Lead was delineated in

the vicinity of PDMW-13P using the results obtained from nearby wells PDMW-24T, PDMW-32R, MW-201 and MW-202 during the November 2014 sampling event. None of the wells used for delineation of PDMW-13P contained detectable concentrations of total lead (see **Figure 10**).

Total arsenic was detected in TW-1 at 150 µg/L, consistent with recent historical results and above its RRS of 18 µg/L. Total arsenic was detected in EW-1 at its detection limit of 20 µg/L. Arsenic is delineated in the northwest portion of the CSXT property and around TMW-1 as it was not detected in the nearby surrounding wells PDMW-48, MW-3R or PDMW-1T during the November 2014 sampling event. Arsenic is delineated in the central portion of the site as it was not detected in wells surrounding EW-1 (PDMW-10R, PDMW-23R, MW-201 PDMW-4T and PDMW-27R) during the November 2014 sampling event.

Fourth VRP Sampling Event

The fourth VRP monitoring event was conducted in May 2015 and included the sampling of 27 wells on the subject Property and immediately surrounding properties. The following observations are provided based on the data obtained:

Ammonia was detected at concentrations exceeding the RRS in samples collected from five monitoring wells, including: EW-1, TMW-1, PDMW-8R, PDMW-26T, and PDMW-47. May 2015 analytical results showed a decrease in ammonia concentrations in wells EW-1, PDMW-8R, PDMW-32R, PDMW-47, and PDMW-48 when compared to the results of the November 2014 sampling event. May 2015 ammonia concentrations for wells TMW-1 (4,300 mg/L) and PDMW-26T (550 mg/L) were higher when compared to November 2014 analytical results, but were generally consistent with recent historical data for these wells. Ammonia concentrations for the remaining wells sampled in May 2015 are generally consistent with recent historical data for these wells.

Nitrate was again detected in only three of the wells sampled (TMW-1, PDMW-26T and EW-1) with only TMW-1 exceeding drinking water standard, consistent with previous results.

At the request of the Georgia EPD, the active monitoring well network was sampled for nitrite for the first time in May 2015. Nitrite was detected at concentrations above the laboratory reporting limit in nine of the 27 wells sampled (MW-2, MW-3R, PDMW-7P, PDMW-8R, PDMW-47, PDMW-48, PDMW-50, PDMW-53, and TMW-4R) in May 2015. Although a drinking water standard for nitrite has not been established, none of the detected nitrite concentrations

exceeded the maximum contaminant level goal (MCLG) of 1 mg/L for drinking water established by the USEPA.

PAH sampling was limited to one monitoring well (TMW-1) for the May 2015 monitoring event. Naphthalene was detected at a concentration of 44 µg/L in the sample collected from TMW-1, which exceeds the RRS of 20 µg/L. This naphthalene exceedance is the same concentration as the previous sampling event and is consistent with recent historical results for TMW-1. No other HSRA-regulated PAHs were detected above laboratory reporting limits in the sample collected from TMW-1.

VOCs sampling was limited to one monitoring well (TMW-1) for the May 2015 monitoring event. Benzene was detected at a concentration of 48 µg/L in the sample collected from TMW-1, which exceeds the RRS of 31.2 µg/L. In addition, total xylenes were detected at a concentration of 120 µg/L, which is well below its RRS. The detections of benzene and total xylenes were less than the concentrations detected during the November 2014 sampling event and were generally consistent with recent historical results for TMW-1. No other VOCs were detected above laboratory reporting limits in the sample collected from TMW-1.

Groundwater samples were collected for total metals analysis from 21 monitoring wells during the May 2015 monitoring event. Total metals were detected in five of the wells, including: EW-1, MW-3R, TMW-1, PDMW-26T and PDMW-32R. Total metals concentrations detected in groundwater samples were typically below site-specific background concentrations and applicable RRS with the exceptions noted below.

Total lead was not detected above the laboratory reporting limit in samples collected from the 27 monitoring wells. A review of historical analytical results showed that this is the first time since June 2010 (seven sampling events) that total lead has not been detected in monitoring well PDMW-13P.

Total arsenic was detected in monitoring wells TMW-1 (160 µg/L) and PDMW-26T (25 µg/L) at concentrations exceeding the RRS of 18 µg/L. These exceedances are generally consistent with recent historical results for wells TMW-1 and PDMW-26T. Arsenic is delineated in the northwest portion of the CSXT property and around wells TMW-1 and PDMW-26T, as it was not detected in the nearby surrounding wells MW-3R, PDMW-8R, PDMW-29D, and PDMW-33R2 during the May 2015 sampling event. Historical analytical results for nearby wells PDMW-1T,

PDMW-2T, PDMW-35P, and PDMW-48 also indicate that total arsenic exceedences are generally limited to wells TMW-1 and PDMW-26T in the northwest corner of the CSXT property.

Total chromium was detected in monitoring well TMW-1 at a concentration of 32 µg/L, which is above the background level of 13 µg/L but below the RRS of 100 µg/L. This detection of total chromium is generally consistent with historical analytical results for well TMW-1. Recent historical analytical results for nearby wells MW-3R, PDMW-1T, PDMW-26T, PDMW-29D, PDMW-35P, and PDMW-48 indicate that total chromium detections above background are limited to well TMW-1 in the northwest corner of the CSXT property.

Fifth VRP Sampling Event

The fifth VRP monitoring event included the sampling of 17 wells. The scope of this monitoring event was reduced from previous events based on EPD's approval of the reduction in scope in October 2015. The groundwater monitoring plan was modified by reducing the monitoring well network by 10 wells (from 27 to 17) and eliminating the surface water sampling and testing. The majority of the wells eliminated, as well as the surface water sampling points, were located on the adjacent SEDA Parcel which had recently been delisted from the HSI. The remainder were located on CSXT property, well away from areas of significant groundwater impact. These sampling points had consistently demonstrated compliance with applicable remediation standards for both groundwater and surface water. The following observations are provided based upon the most current ammonia concentration data:

Ammonia was detected at concentrations exceeding the RRS in samples collected from five monitoring wells (EW-1, TMW-1, PDMW-8R, PDMW-26T, and PDMW-47). Again these results were consistent with the results of the previous sampling event. The November 2015 analytical results for those six wells above background show a decrease in ammonia concentrations in wells EW-1, PDMW-8R and TMW-1 when compared to the results of the May 2015 sampling event while the ammonia concentrations in PDMW-26T and PDMW-48 were slightly higher. The PDMW-47 result remained unchanged from May 2015. Ammonia concentrations for the remaining 11 of 17 wells sampled in May 2015 were generally consistent with recent historical data for these wells and all were below the background concentration.

Nitrate was detected at concentrations above the laboratory reporting limit in four of the 17 wells sampled (TMW-1, MW-3R, PDMW-32R and PDMW-48) in November 2015. Only TMW-1, with a nitrate concentration of 250 mg/L (down from 290 mg/L in May 2015), exceeded the drinking

water standard established by the USEPA. These results are generally consistent with the previous analytical results.

Nitrite was detected at concentrations above the laboratory reporting limit in four of the 17 wells sampled (MW-3R, PDMW-48, PDMW-32R and PDMW-46) in November 2015. None of the detected nitrate concentrations exceeded the MCLG of 1 mg/L for drinking water.

PAH sampling was limited to one monitoring well (TMW-1) for the November 2015 monitoring event. Naphthalene was detected at a concentration of 63 µg/L in the sample collected from TMW-1, which exceeds the RRS of 20 µg/L. This naphthalene concentration is consistent with historical results for TMW-1. No other HSRA-regulated PAHs were detected above laboratory reporting limits in the sample collected from TMW-1.

VOCs sampling was also limited to monitoring well TMW-1 for the November 2015 monitoring event. Benzene was detected at a concentration of 52 µg/L, which exceeds the RRS of 31.2 µg/L. In addition, total xylenes were detected at a concentration of 220 µg/L, which is well below its RRS. The detections of benzene and total xylenes were somewhat higher than the concentrations detected during the May 2015 sampling event; however, they were generally consistent with or lower than recent historical results for TMW-1. No other VOCs were detected above laboratory reporting limits in the sample collected from TMW-1.

Groundwater samples were collected for total metals analysis from 15 monitoring wells during the November 2015 monitoring event. Total metals were detected in five of the wells, including: EW-1, MW-3R, TMW-1, PDMW-26T and PDMW-32R. Total lead was detected at or just above the laboratory reporting limit of 10 µg/L in three samples (MW-3R, PDMW-13P and PDMW-47). None of these three lead detections exceeded the RRS of 15 µg/L. Total arsenic was again detected only in monitoring well TMW-1 at a concentration of 150 µg/L, which exceeds the RRS of 18 µg/L. This result is generally consistent with recent historical results for well TMW-1. Total arsenic remains delineated in the northwest portion of the CSXT property, as it was not detected in the wells surrounding TMW-1.

Total chromium was again detected in monitoring well TMW-1 at a concentration of 32 µg/L, which is below the RRS and consistent with historical analytical results for well TMW-1.

Follow-up Testing

In order to further investigate the condition of the groundwater and further delineate the extent of ammonia on the adjacent Spartan Hutchinson Island Ventures Property, follow-up testing was conducted in monitoring well in May and July 2016. Groundwater from this well was tested for ammonia. In each case, the ammonia concentration detected met the Type 1 RRS of 30 mg/L, with the most recent test result of 19 mg/L.

7.0 DESCRIPTION OF RESPONSIBLE PERSON FOR THE IMPACTS DETECTED AT THE PROPERTY

During the course of the various assessments conducted at the site, the extent of soil and groundwater contamination have been delineated to Type 1 RRS which defines the HSI site boundaries. Based on the available data, it is apparent that the ammonia contamination in groundwater at the property is emanating from the northern and east-central portions of the property and is mapped as migrating generally to the north and southeast, respectively, consistent with shallow groundwater flow.

Following is a summary of information currently known about the three separate industrial entities that have operated on the subject Property.

CSX Real Property, Inc.
301 West Bay Street
Suite 800
Jacksonville, Florida 32202
Contact: Coley Campbell

Chevron Products Company (a division of Chevron U.S.A)
P.O. Box 1706
Atlanta, Georgia 30301
Contact: Mr. Mr. Peter Kasbohm

Powell Duffryn Terminals, Inc.
2 Commerce Street
Bayonne, New Jersey 07002
Contact: Registered Agent: Mr. Ronald R. Sprague
R Roy Enterprises, L.L.C.
P.O. Box 85
Woodbridge, NJ 07095

8.0 ACTIONS TAKEN TO ELIMINATE, CONTROL, OR MINIMIZE ANY POTENTIAL RISK AT THE SITE

A number of interim corrective actions were completed prior to Amec Foster Wheeler's involvement in the project to address localized areas where soil did not meet the applicable RRS. These interim measures are briefly described in chronological order below. **Figure 11** illustrates the locations of soil corrective actions performed at the Property prior to implementing the MCAP.

1. In November 1999, Applied Engineering & Sciences, Inc. (AES) excavated approximately 92.5 tons of petroleum-impacted soil from the area of PDMW-11P. Soil was disposed at the Waste Management Superior Landfill in Savannah, GA. Additionally, over 7,800 gallons of impacted groundwater were removed and disposed offsite during the project. Follow up sampling performed in October 2001 found no benzene, toluene, ethylbenzene, or xylenes (BTEX) above laboratory detection limits in samples collected at the boundary of the former excavation. The monitoring well was removed during excavation and replaced with PDMW-11R (AES 2000a).
2. In November 1999, AES excavated and disposed of approximately 9.6 tons of petroleum-impacted soil from the area of PDMW-10T. Follow up sampling performed in October 2001 found no BTEX above laboratory detection limits in samples collected at the boundary of the former excavation (AES 2000a).
3. In November 1999, AES excavated approximately 11 tons of arsenic-impacted soil from the area of PDMW-31P. Soil was disposed at the Waste Management Superior Landfill in Savannah, GA. Confirmation soil samples demonstrated compliance with Type 4 RRS for arsenic. The monitoring well was removed during excavation and replaced with PDMW-31R (AES 2000a).
4. In September 2001, AES excavated and disposed of approximately 26 cubic yards (yd³) of benzene-impacted soil. Confirmatory samples were collected from the sidewalls at three locations on the perimeter and analyzed for BTEX. Results indicated concentrations below detection limits for all constituents. The excavated soil was added to the stockpiled material from the recovery trench excavation for future management. (AES 2002a).

5. In May 2004, BBL excavated approximately 447 tons of petroleum-impacted soil from the area of PDMW-14T. Soil was disposed at the Waste Management Superior Landfill in Savannah, GA. Confirmation soil samples demonstrated compliance with Type 4 RRS for polycyclic aromatic hydrocarbons (PAHs). The monitoring well was removed during excavation and replaced with PDMW-14TR.
6. In July 2005, Amec Foster Wheeler removed approximately 5,800 linear feet (LF) of underground steel piping, 2,200 tons of PSM, and 11,621 gallons of impacted groundwater from the property. PSM was disposed at the Savannah Regional Landfill in Port Wentworth, GA; piping was recycled by Southern Metal Recycling in Savannah; and groundwater was treated at Industrial Water Services (IWS) in Jacksonville, FL.

In March 2006, Amec Foster Wheeler submitted a Modified Corrective Action Plan (MCAP) to address remaining issues at the site which were not adequately addressed by the interim corrective actions that had already been undertaken. These outstanding issues related to metals-impacted soil, petroleum source material (PSM) in soil, abandoned piping and ammonia, lead, arsenic, benzene and naphthalene in groundwater.

8.1 GENERAL CONSTRUCTION METHODS

CSX-RPI contracted with Environmental Remediation Services, Inc. (ERS) to perform the soil corrective actions on the property. Amec Foster Wheeler was contracted by CSX-RPI to perform construction management and documentation. On November 13, 2006, Amec Foster Wheeler and ERS mobilized to the Site to initiate the project. Amec Foster Wheeler and ERS demobilized from the Site on May 18, 2007 after excavating approximately 48,220 tons of PSM and metals-impacted soil. Once the County determined that a Temporary Stream Buffer Variance was not required, Amec Foster Wheeler and ERS remobilized to the Site on August 28, 2007, to excavate the remaining PSM within 25 feet of the Savannah River. This excavation resulted in the removal of an additional 2,325 tons of PSM. The combined excavated tonnage resulting from both mobilizations was 50,545 tons of metals-impacted soil and PSM. The subsections below describe the general construction methods and approaches used on the project.

8.1.1 Utility Protection

The State of Georgia Utility Protection Center (GAUPC) requires 72 business hours notice for underground utility clearance for any intrusive subsurface work. As such, Amec Foster Wheeler

contacted GAUPC prior to initiation of field activities and received the appropriate utility clearances.

8.1.2 Erosion Control Measures

Amec Foster Wheeler contacted the Chatham County Engineering Department regarding the need for a land disturbance permit. Upon review of the application, the County Engineer indicated that the Site activities could be performed under the existing Permit Number 2004-039, which has been used for site excavation and grading activities since March 2004.

Upon initial mobilization to the property, ERS inspected the existing silt fence that borders the Site. In locations where the fence was damaged, new silt fence was installed in accordance with the land disturbance permit. When Amec Foster Wheeler and ERS remobilized to the property in August 2007 to conduct the excavation of the remaining PSM adjacent to the Savannah River, silt fence was placed in appropriate locations during excavation activities.

8.1.3 PROCESSES

Removal of metals-impacted soil and PSM was performed in three separate phases. During the first phase, metals-impacted soil was excavated from the ground surface to the delineated depth until confirmation samples demonstrated that the extent of metals-impacted soil were removed. Phase two included the excavation of PSM based on visual and olfactory senses. Phase three included the excavation of the remaining PSM within 25 feet of the Savannah River. Care was taken to ensure that no overburden or PSM was allowed to accidentally enter the Savannah River. The following subsections describe the general excavation methods used during the project.

Overburden Removal

Where non-impacted overburden was present, this material was stripped off the surface using an excavator equipped with a flat sand plate and stockpiled in designated non-impacted areas located nearby. The use of the flat sand plate on the excavator bucket allowed for more efficient separation of non-impacted overburden from PSM. In general, where it existed, the thickness of non-impacted overburden ranged from 6-in. to 4 ft. Overburden was used as excavation backfill during the entire course of the project.

Stockpiling and Loading

Stockpile locations were designated throughout the Site on an as needed basis depending upon trucking routes and access limitations. In general, metals-impacted soil and PSM was either live-loaded into dump trucks or stockpiled on other nearby impacted areas pending load-out. Stockpiled PSM was covered with poly sheeting when it was stockpiled for more than a day or a rain event was anticipated.

Disposal

All metals-impacted soil and PSM were profiled in accordance with requirements set forth by Waste Management, Inc. (WMI). Upon approval from WMI, the materials were transported by Lanyard Development, Inc. and Dorchester Dirt Company to Superior Landfill in Savannah, GA using non-hazardous waste manifests.

Water Handling

Over the course of the project, liquids handling was performed to control groundwater infiltration into open excavations and to address the extensive ponding of rainwater on the ground surface.

Excavation Dewatering

The depth to groundwater at the property is on average approximately 2 ft bgs. Since the excavation depths ranged from 3 to 8 ft bgs, excavations were periodically dewatered with either a vacuum truck or a trash pump to remove groundwater. When excavations were deeper or obstacles (e.g. concrete foundations or wooden pilings) slowed production, Light Non-Aqueous Phase Liquid (LNAPL) accumulated in the base of the excavation pit. The LNAPL was removed using the vacuum truck and the underlying impacted soil was scraped to remove any remaining LNAPL film on the soil. The LNAPL and impacted groundwater was stored in two 21,000 gallon frac tanks at the Site, pending disposal. Initially, the dewatering liquids were transported to IWS in Jacksonville, Florida for treatment. As the volume of water increased, Amec Foster Wheeler received approval from the City of Savannah Water Quality Control Department to dispose of the water at the City's Publicly Owned Treatment Works (POTW) located at President Street. This approval was based on the condition that the Frac tanks be arranged in series and used as settling tanks to separate the sediments and LNAPL from the water to be disposed. Oreogin, Inc. of Allenhurst, GA was contracted to transport the water to the POTW.

A total of 389,447 gallons of impacted water was transported off-site for treatment. This total included 139,047 gallons of impacted groundwater sent to IWS and 250,400 gallons sent to the POTW for treatment. The volume of water generated during the August 2007 buffer zone excavation was limited to 829 gallons and was transported to IWS. This volume is included in the numbers presented above.

Stormwater Handling

Heavy rains occurred during certain periods of the project that resulted in extensive ponding in areas slated for excavation. In order to access these areas, the standing stormwater was pumped to portions of the Site where excavation was not necessary (or had already been completed). The pumping operation was monitored to ensure that erosion did not occur and that the runoff remained on Site.

8.2 SOIL EXCAVATION AND DISPOSAL

The following areas of impacted soil were during the initial phase of the MCAP implementation.

8.2.1 Lead Areas 1-5

Lead Areas 1, 2, 3, 4, and 5 were excavated following the general methods described above. The area previously identified as Lead Area 6 was eliminated as a result of updated analytical data. A total of 1,520 tons of lead-impacted soil was excavated from five areas.

Amec Foster Wheeler used a portable XRF unit to screen soils and guide the lead-impacted soils excavation. Based on the correlation of XRF data and SW846 method 6010B data from the May 2006 delineation sampling, a screening action level for lead of 266 mg/kg was established. Screening samples were collected approximately every 25 ft along the excavation sidewalls to confirm successful removal of soil exceeding the Type 3 RRS for lead. Where excavations did not reach the groundwater table, a sample was collected from the center of each 25 ft by 25 ft grid. If the lead reading found using the XRF was less than 266 mg/kg, the sample was sent to STL for lead confirmatory analysis by SW846 method 6010B.

Any location where either the XRF screening result exceeded 266 mg/kg for lead or the STL analytical result exceeded 400 mg/kg for lead was marked for further excavation. These locations were excavated in 5 to 10-ft “cells” and new confirmation samples were collected and screened/analyzed as described above. Elevated arsenic concentrations were detected in XRF screening samples from Lead Areas 1B, 2A, 3B, 4A, and 5C (above 20 mg/kg on the XRF). In

each of these areas, confirmation samples were sent to STL for arsenic analysis as well as lead analysis.

Table 8 presents the tabulated XRF screening results and corresponding STL analytical results. Table 9 presents the confirmation sample results that demonstrate the extents of lead-impacted and arsenic-impacted soil in the five areas has been removed to meet the Type 3 RRSs. It should be noted that all confirmation samples were analyzed using SW846 methods, and that XRF was used only as a pre-screening tool. The overall excavation boundaries of all metals excavation areas are presented on **Figure 12**. **Figures 13 through 23** illustrate the individual excavation boundaries of each area and the final confirmation sample results.

8.2.2 Arsenic Area 1

The excavation of Arsenic Area 1 involved removing a 50 ft by 50 ft square area around PDMW-31R down to 4 ft below grade into the water table. The area was dewatered by removing water from PDMW-31R before and during excavation of the 50 ft square area. The excavation was conducted to remove arsenic-impacted soil present in the vicinity of PDMW-31R below the water table that could be impacting groundwater. The remainder of the Arsenic Area 1 excavation was conducted as a surface soil scraping down to 6 in. bgs in areas where laboratory analytical results exceeded the Type 3/4 RRS of 38 mg/kg. A total of 700 tons of arsenic-impacted soil was excavated from this area.

In accordance with the March 14, 2006 NOD response letter (AMEC 2006a), confirmation samples were collected in Arsenic Area 1 for both arsenic and lead. Initially, samples were screened with an XRF. As with the lead areas, AMEC used a screening action level of 20 mg/kg for arsenic and 266 mg/kg for lead. However, as the program progressed in Arsenic Area 1, the correlation between the XRF readings for arsenic and the STL analytical results was found to be very poor. As a result, AMEC discontinued the XRF screening process in this area and started sending all samples to STL for arsenic and lead analyses by SW846 method 6010B. Any location where the STL analytical result exceeded the Type 3/4 RRS was marked for further excavation. These locations were excavated in 5 to 10-ft “cells” and new confirmation samples were collected and analyzed.

Table 4 presents the tabulated XRF screening results and corresponding STL analytical results. Table 5 presents the confirmation sample results demonstrating that impacted soil in Arsenic Area 1 has been removed to meet the Type 3/4 RRSs for arsenic and lead. Once again, all

confirmation samples were analyzed using SW846 methods and XRF was used only as a pre-screening tool. **Figure 22** illustrates the excavation boundaries and the final confirmation sample results.

In accordance with the March 14, 2006 NOD response letter (AMEC 2006a), confirmation samples were collected in Arsenic Area 1 for both arsenic and lead. Initially, samples were screened with an XRF. As with the lead areas, AMEC used a screening action level of 20 mg/kg for arsenic and 266 mg/kg for lead. However, as the program progressed in Arsenic Area 1, the correlation between the XRF readings for arsenic and the STL analytical results was found to be very poor. As a result, AMEC discontinued the XRF screening process in this area and started sending all samples to STL for arsenic and lead analyses by SW846 method 6010B. Any location where the STL analytical result exceeded the Type 3/4 RRS was marked for further excavation. These locations were excavated in 5 to 10-ft “cells” and new confirmation samples were collected and analyzed.

Table 8 presents the tabulated XRF screening results and corresponding STL analytical results. Table 9 presents the confirmation sample results demonstrating that impacted soil in Arsenic Area 1 has been removed to meet the Type 3/4 RRSs for arsenic and lead. Once again, all confirmation samples were analyzed using SW846 methods and XRF was used only as a pre-screening tool. **Figure 22** illustrates the excavation boundaries and the final confirmation sample results.

8.2.3 PAH Confirmation Soil Sampling

Soil confirmation samples for PAH analysis were required in any area where groundwater data historically indicated naphthalene at concentrations exceeding the Type 3 RRS for groundwater.

Based on the July 2004 and March 2006 groundwater analytical results, naphthalene was present at concentrations exceeding the Type 3 RRS in groundwater samples collected from PDMW-14T, PDMW-39, and PDMW-42. During the excavation program, eight confirmation samples were collected in locations where excavation sidewalls were in the vicinity of these wells. The analytical results presented in Table 10 and illustrated on **Figure 24** confirm that PAH-impacted soil in this area has been removed.

8.2.4 Petroleum Source Materials

After excavating the metals-impacted soil areas, Amec Foster Wheeler and ERS initiated the PSM excavation program. In accordance with the requirements of the GAEPD, PSM was excavated based on visual screening of materials. Once a large enough area was excavated down to clean native soil, test pits were excavated every 20 ft to assess the presence of deeper PSM layers buried under the soil that visually appeared to be clean. In areas where the nature of the PSM was questionable, the material was placed in a jar of water to assess whether LNAPL or a sheen formed.

As previously documented in the MCAP, PSM Area 1 was excavated in 2005. During the November 2006 mobilization, excavation of PSM Areas 2, 3, and 4 was planned. During excavation of Arsenic Area 1, a fifth PSM Area was identified and designated as PSM Area 5. During excavation of Lead Area 4, PSM Area 6 was identified. PSM Area 7 was discovered during the removal of a previously identified underground steel pipe. Discovery of these additional PSM areas led AMEC to perform the Site-wide investigation documented in Section 5.5. As a result of the investigation, PSM Areas 8 through 13 were identified. Table 11 summarizes the area and depth ranges of each PSM Area. Approximately 48,325 tons of PSM were removed from the Site from November 2006 through August 2007. **Figure 23** illustrates the excavation boundaries of each PSM area.

The following bullets summarize several notable observations or occurrences encountered during the PSM excavation program:

- Several concrete structures were encountered during the PSM excavation in PSM areas 3, 10, and 11. Some of the concrete structures contained free flowing thick amber brown to black PSM. The heavily stained concrete was excavated and was mixed with PSM and disposed at WMI. Non-stained concrete was placed in the excavation pit and covered with backfill material.
- During excavation of PSM Area 4, it became apparent that PSM extended up to the property line that is shared with the parcel referred to as “SEDA Parcel B”. AMEC contracted a licensed land surveyor to demarcate the property line. PSM was excavated in PSM Area 4 on the CSX-RPI property, up to the SEDA Parcel B property line. A 1-ft-thick layer of viscous amber brown to black PSM with a petroleum odor

was apparent at the edge of property line at about 4 ft bgs. This material was not removed because it was not on CSX-RPI property.

- Cross ties and wooden pilings were encountered in PSM Areas 2, 3, 4, 5, and 6 during excavation activities. Some of the cross ties were associated with a former rail line that ran through a portion of the Site. Other cross ties were apparently used for structural support of former site features such as bulk chemical and petroleum storage tanks. Where practical, the cross ties were completely excavated when encountered. The majority of the wooden pilings in PSM Area 2 extended at least 12 ft bgs. The majority of these cross ties were broken off at the base of the excavation, where no PSM was identified.
- Based on the results of the April 2007 site-wide investigation and the implementation of the large-scale excavation program, PSM has been removed from the Site to the extent practicable. In certain areas within PSM Areas 3 and 6, soil containing PSM was left in place to provide structural support for existing telephone poles (**Figure 23**). A radius of approximately 5 ft was left in place around four of these telephone poles for safety reasons. It is estimated that between 20-40 tons of PSM remains at these locations combined.

8.2.5 Abandoned Piping

Throughout the excavation project, abandoned piping was removed, staged, and disposed. In addition to the 1,500 linear feet of piping that was previously identified, approximately 700 linear feet of additional piping was encountered. This additional piping was primarily either steel or transite piping that was not detected using the geophysical survey methods employed during the 2005 survey. The piping generally ranged in size from 2 to 6-in. diameter and was encountered between 2 and 4 ft bgs. One exception was a 75-ft section of 24-in. steel pipe filled with petroleum product that was encountered in PSM Area 2. The condition of the majority of the piping was poor, with much of it containing holes. None of the piping had been properly abandoned and most contained thick black residual petroleum material. During pipe removal, the petroleum material was allowed to drain onto the PSM stockpiles. Care was taken to ensure that draining pipes were managed properly and petroleum product was contained on existing PSM. Transite pipe was wrapped in plastic sheeting as requested by WMI. The piping was disposed along with the PSM at WMI. It should be noted that only piping that was identified by ground penetrating radar (GPR) or was encountered during excavation activities was removed.

Figure 25 illustrates all of the underground piping that was removed from the Site in 2005 and 2006/2007.

8.3 SITE RESTORATION

Excavations were backfilled using both clean overburden from on-site and silty sand from an off-site borrow pit operated by Lanyard Development, Inc. Backfill material was placed in the excavations and compacted using a combination of the excavator bucket, a front end loader, and a bull dozer. Approximately 48,150 tons of clean borrow material was brought to the Site to replace the excavated PSM and metals impacted soil. The borrow material was analyzed for PAHs, diesel range organics, and Resource Conservation and Recovery Act (RCRA) 8 metals prior to being accepted for on-site use as backfill.

After backfilling, a hydroseed mixture was applied to the ground surface as part of the Site restoration activities. The only exception to this is the area within 25 feet of the Savannah River, which was restored using grass seed and a hand spreader. Due to an unseasonably dry Spring (3.7 inches of rain vs. an average of 10.6 inches) the grass did not establish a suitable vegetative cover. ERS applied a second hydroseed mixture to the Site the week of May 14, 2007 and watered the grass on a bi-weekly basis. ERS placed straw mulching across these areas in August 2007 in accordance with the Land Disturbance Permit for the Site. This met the stabilization requirements of the permit.

The PSM excavation activities required removing the gravel road that provides access to the Savannah Marine Services facility. Once excavation of the road area was complete, a new gravel road was constructed following the same general alignment and elevation as the original road. The road was constructed by backfilling each excavated area in 8 inch lifts using the bulldozer and a sit-on roller. The road was constructed with a 12-in. gravel drainage layer and a 6-in. crush-and-run road surface.

8.4 GROUNDWATER CORRECTIVE ACTION

Since the original CSR was published in 1998, removal of ammonia from groundwater has been the focal point of groundwater corrective actions at the Property. Other regulated substances present in groundwater at concentrations exceeding the applicable RRS are generally co-located with elevated ammonia concentrations, and would therefore be addressed through the ammonia corrective action.

In accordance with the approved MCAP, Amec Foster Wheeler installed a groundwater remediation system to address impacted groundwater in the northern portion of the site. The primary COC in this area of the site was ammonia; however, elevated VOC and PAH concentrations were also located in the area of the highest ammonia impact and would also be addressed by the remediation system.

8.4.1 Groundwater Remediation System Construction

The groundwater remediation system was installed between November 2007 and February 2008 in accordance with the design documents prepared by Amec Foster Wheeler. The remedial action objective of the groundwater remediation system is to reduce the concentrations of the compounds of concern (COCs), primarily ammonia, below the defined RRS.

The extraction system was designed to draw groundwater from a field of 21 wells, and carry it to a central location where it could be monitored and sampled before being discharged into a sanitary sewer manhole at the Site boundary for conveyance to the City of Savannah's President Street Wastewater Treatment Plant (WWTP).

System construction involved installing 21 pumping wells, excavating trenches and installing subsurface piping and electrical conduit, placement of the system shed, and installing a tap into the nearby sanitary sewer manhole. Each well riser was installed in a precast concrete well vault with secure hatch door. The extraction pump for each well is located within the well vault, which also contains piping, tubing and appurtenances for the extracted groundwater, tubing and appurtenances for the compressed air being supplied to the extraction pump, and an electrical junction box for the conductivity/level probes that are installed within the riser.

Each pumping well fed into a dedicated subsurface line that connects the well to a centralized equipment shed. The equipment shed contained an air compressor and piping manifold to supply compressed air to the extraction well vaults. Extracted groundwater is discharged into the nearby sanitary sewer manhole via a second piping manifold. The automated system is monitored and controlled by a process logic controller (PLC) located within the control panel inside the equipment shed. The pressure of the compressed air, the pH, flow rate and total accumulated volume of the extracted groundwater and the internal temperature of the shed are continuously monitored by the PLC. Unfavorable conditions will result in a system interlock that effectively shuts down the extraction process, with an automated alert being remotely communicated to the operator for investigation and resolution.

8.4.2 System operation

Following a final inspection, the system was started up on 6 March 2008. Between April 2008 and October 2008, the treatment system was operated using its original design. The treatment system was shut down between November 2008 and September 2009 to conduct evaluation, upgrading, and optimization and was restarted in September 2009.

After upgrading and restarting the remediation system, a significant mass of ammonia was removed from groundwater. During the reporting period, over 2.1 million gallons were recovered and over 1900 pounds of ammonia was removed during the reporting period, with almost 50 percent of that being within the four months post-upgrade.

During 2010, the groundwater remediation system was in operation for 10 of 12 months. From mid-August through mid October 2010, the remediation system was not in operation for maintenance and repair purposes. The remediation system was brought back on-line in mid-October and operated nearly continuously through the end of 2010. During the reporting period, over 2.1 million gallons were recovered and approximately 1,868 pounds of ammonia was removed from groundwater.

The groundwater remediation system was in operation for 278 days in 2011. The remediation system was shut down from March 1 through May 8, 2011 for maintenance and repair purposes. Extensive system maintenance was also performed in November and December 2011, which decreased the volume of groundwater recovered from the system during this period. The remediation system was also shut down for brief periods of time throughout the year to perform maintenance and repair activities. During the reporting period, over 1.7 million gallons of groundwater containing ammonia were recovered and approximately 1,219 pounds of ammonia were removed from groundwater.

Operation of the groundwater remediation system was suspended upon submission of the VRP application in June 2012.

9.0 RISK REDUCTION STANDARDS

The subject site is located in Savannah, Georgia in an area of former industrial properties. The property, as well as adjoining properties to the north, east and south are zoned for heavy industrial use and are classified as “non-residential” property as defined under HSRA. The Spartan Hutchinson Island Ventures property to the west was previously zoned for heavy industrial use but is currently zoned for residential use.

As discussed in Section 4.2, HSRA-regulated substances were detected in soil and groundwater samples obtained during various assessments conducted by Amec Foster Wheeler and others. Therefore, risk reduction standards (RRS) were calculated for these substances in accordance with the HSRA Rules and are summarized below. See Appendix C for complete RRS calculations.

9.1 SOIL CRITERIA

A total of 28 HSRA-regulated constituents were detected in soil during Amec Foster Wheeler’s assessments. Type 1-4 RRS for all constituents detected in soil on the CSXT property were previously calculated for the Property as presented in the 2009 Revised CSR and are summarized below in Table 9-1 along with the highest concentration of each constituent remaining in soil on the property after remediation.

TABLE 9-1 - RISK REDUCTION STANDARDS FOR SOIL

Regulated Substance	Background	Type 1 RRS	Type 2 RRS	Type 3 RRS	Type 4 RRS	Maximum Concentration Detected (pre-remediation)	Maximum Concentration Remaining on CSXT Property*
PAHs, mg/kg							
Acenaphthene	0.092	300	410	300	--	0.18	<1.1
Acenaphthylene	0.17	130	0.01	130	--	1.4	<1.1
Anthracene	0.21	500	3089	500	--	4.3	4.3
Benzo(a)anthracene	0.156	5.0	8.3	5.0	--	2.3	<1.1
Benzo(a)pyrene	0.17	1.6	1.2	1.6	7.8	3.6	<1.1
Benzo(b)fluoranthene	0.425	5.0	12.5	5.0	--	1.1	<1.1
Benzo(g,h,i)perylene	0.152	500	0.77	500	--	1.1	0.083
Benzo(k)fluoranthene	0.131	5.0	125	5.0	--	1.2	<1.1
Chrysene	0.581	5.0	843	5.0	7,200	25	0.11
Dibenzo(a,h)anthracene	0.099	2.0	1.2	5.0	--	0.26	<1.1
Fluoranthene	0.4	500	2222	500	--	1.4	0.15
Fluorene	0.17	360	370	360	--	1.6	0.23
Indeno(1,2,3-cd)pyrene	0.142	5.0	12	5.0	--	0.94	<1.1
Naphthalene	0.028	100	1.32	100	--	120	0.11
Phenanthrene	0.115	110	0.07	110	--	24	0.38
Pyrene	0.562	500	2178	500	--	170	0.15
VOCs, mg/kg							
Benzene	0.0085	0.5	0.05	0.5	9.1	0.035	NT
Ethylbenzene	0.0085	70	15.7	70	--	0.16	NT
Toluene	0.0085	100	14	100	--	0.51	NT
Inorganics, mg/kg							
Arsenic	32.18	20	5.84	38	38	36	33
Beryllium	1.5	2	63	3	--	1.9	NT
Cadmium	0.57	2	7.5	39	--	6.7	NT
Chromium	123.6	100	18.1	1,200	--	66.8	NT
Lead	56.45	75	270	400	1,320	1,400	390
Mercury	0.33	0.5	2.09	17	--	4.6	NT
Nickel	46.39	50	130	420	--	24.3	NT
Zinc	103.86	100	2488	2,800	--	371	NT
Ammonia	1.58	238	--	238	--	74	NT

µg/kg - micrograms per liter (equivalent to parts per billion)

Note: Shaded values exceed Type 2 RRS

*Based on 2006/2007 confirmation sampling

NT – No confirmation samples tested as RRS exceedances were not identified.

As documented in the 2009 CSR, on the soil testing data collected to date and following the soil remediation measures described in Section 8.0, the subject site is currently in compliance with applicable Type 3 RRS for regulated constituents in soil.

9.2 GROUNDWATER CRITERIA

Type 1-4 RRS for all constituents detected in groundwater on site are presented below in Table 9-2. HSRA RRS criteria for groundwater for the detected constituents are shown compared to their highest concentrations detected on the property.

TABLE 9-2 – RISK REDUCTION STANDARDS FOR GROUNDWATER

Regulated Constituent	Background	Type 1/3 RRS	Type 2 RRS	Type 4 RRS	Maximum Historic Concentration Detected	Highest Concentration Detected During VRP Monitoring
PAHs, µg/L						
Acenaphthene	1	2,000	940	6,100	520	BRL
Acenaphthylene	1.4	1.4	ND	510	200	BRL
Anthracene	0.2	0	4,700	5,100	59	BRL
Benzo(a)anthracene	0.2	0.1	2.5	3.9	19	BRL
Benzo(a)pyrene	0.2	0.2	0.25	0.39	0.62	BRL
Benzo(b)fluoranthene	0.2	0.2	1.2	0.65	0.26	BRL
Benzo(k)fluoranthene	0.131	10	12	39	1.3	BRL
Chrysene	0.2	0.2	120	65	18	BRL
Fluoranthene	0.5	1,000	630	4,100	120	BRL
Fluorene	0.5	1,000	630	4,100	270	BRL
Naphthalene	1	20	1.4	20	6,200	63
Phenanthrene	0.22	0.22	ND	510	360	BRL
Pyrene	0.5	1,000	470	3,100	84	BRL
VOCs, µg/L						
Benzene	1	5	4.5	31	160	81
Ethylbenzene	1	700	15	29	650	BRL
Toluene	1	1,000	880	5,200	1,300	BRL
Xylenes	2	10,000	59	290	2,500	0.42
Inorganics, µg/L						
Arsenic	18	50	0.57	50	570	160
Chromium	13	100	1.7	5.7	100	BRL
Lead	7	15	ND	15	210	39*
Nickel	130	100	310	2,000	170	100
Zinc	960	2,000	4,700	31,000	2,100	550
Ammonia	15	30	30	30	18,000	4,300
Nitrate	NE	10	--	--	290	290

µg/L - micrograms per liter (equivalent to parts per billion)

Note: Shaded values exceed one or more of the Type 1-4 RRS

*Recent lead testing results were all compliant with Type 1 RRS

Based on the groundwater testing data available to Amec Foster Wheeler and presented herein, groundwater at the property currently complies with Type 1 or 2 residential RRS except for the following regulated substances: ammonia, arsenic, lead, benzene, naphthalene and nitrate. There are no regulated substances detected in groundwater on parcels adjacent to the CSXT property that exceed the Type 1 or Type 2 RRS as of the November 2015 sampling event and retest of PDMW-47 in April and July 2016.

10.0 EXPOSURE PATHWAYS

An examination of potential exposure pathways and receptors was presented in previous reports and, in part, supplemented by recent research. Based on the data collected to date, the potential exposure pathways include:

- Potential exposure to regulated constituents in soil;
- Potential exposure to regulated constituents in groundwater;
- Potential exposure to regulated constituents in surface water;
- Potential exposure to regulated constituents due to vapor intrusion from impacted soil or groundwater beneath occupied buildings.

The CSXT property is zoned heavy industrial and is located across the Savannah River from downtown Savannah, Georgia. The Property is currently undeveloped. Nearby property uses include an office building and a golf course to the north and commercial properties along the river to the south and east. The property to the west was previously occupied by a concrete plant but is currently vacant. Unauthorized access to the property is controlled through a partial enclosure provided by a fence which surrounds the property, although the fence has been damaged in some areas.

In order to eliminate certain exposure pathways, engineering and institutional controls will be implemented on the property in the form of an Environmental Covenant that will (1) restrict the use of groundwater for drinking, (2) restrict residential use of the property without further corrective action (i.e. soil remediation or engineering controls). The covenant will include a provision for annual certification of continued compliance.

10.1 SOIL CRITERIA

No soil impacts have been documented on parcels adjacent to the CSXT property. Based on the industrial use of the property it is considered non-residential and, therefore, potential receptors include industrial workers, construction workers and utility workers. The applicable non-residential RRS for all constituents detected in soil on site are summarized in Table 9-1.

As documented in Section 9.0, only lead and arsenic remain in soil samples above the residential RRS, along with a small amount of visibly impacted petroleum source material surrounding four utility poles. Of the 28 regulated constituents detected in soil, all were at

concentrations below their applicable residential RRS, except for arsenic and lead in the following samples: Arsenic - AS1A-E02-3", AS1A-E03-6", AS1A-N07A-3", AS1A-S01-3" and AS1A-W06-3", Lead - PB3B-E01-6", PB3B-E02-6", PB3B-N04-1', PB4A-E02-6", PB4A-N01-6", PB4A-W01-6", PB4A-W02-6" and PB5C-N02-1'. All arsenic and lead concentrations comply with non-residential RRS. As such, the subject property satisfies non-residential RRS criteria calculated for potential exposure to soil.

10.2 GROUNDWATER

Amec Foster Wheeler compared recent groundwater testing data from the Property to Type 1-4 RRS for the constituents detected in groundwater on the site. Based on the November 2015 groundwater testing data and a retest of PDMW-47 in 2016, the property exceeds groundwater Type 1 or Type 2 RRS for ammonia, nitrate, benzene, naphthalene and arsenic; however, there are no exceedances of Type 1 groundwater RRS on surrounding properties. Groundwater on Hutchinson Island is not used for drinking water and no drinking water wells are known to exist on Hutchinson Island. In addition, owners of property are prevented from using groundwater as a drinking water source due to a Chatham County Ordinance prohibiting the installation of drinking water wells in areas served by municipal water systems. The property will comply with Type 4 RRS with controls upon execution of an Environmental Covenant that restricts groundwater usage. For these reasons, the groundwater exposure pathway for properties comprising the site is incomplete.

As discussed in Section 3.0, the site lies in a hydrogeologic setting where groundwater typically consists of an unconfined surficial aquifer, underlain by an upper confining unit and the Floridan aquifer. Regional hydrogeologic conditions at the property and surrounding areas indicate the first potable water is found in the Upper Floridan aquifer at least 300 feet below the site elevation. This aquifer is separated by an approximately 200 feet thick confining unit of the Floridan aquifer, reinforcing the conclusion that the exposure pathway for human consumption of impacted groundwater is incomplete.

Based on the groundwater data obtained during previous assessments, groundwater concentrations are below the risk reduction standards for construction and utility workers in the event that ground-disturbing activities intercept groundwater in the future. Commercial/industrial workers are not expected to come into contact with groundwater. Therefore, the exposure pathway of any workers is incomplete.

In order to evaluate the risk that regulated constituents in groundwater could impact a potential receptor within 1,000 feet of the downgradient extent of the plume and to estimate the time required to achieve compliance with applicable RRS, Amec Foster Wheeler applied the BIOCHLOR software to the release of ammonia in groundwater on site. BIOCHLOR utilizes a combination of site specific data and literature values to determine the various physical properties of the plume and the migration potential of dissolved constituents. The model was developed to predict the migration pattern of a contaminant plume where no engineering controls have been implemented and monitored natural attenuation (MNA) is the groundwater remedial option. Refer to Appendix D for model output sheets and supporting information.

10.2.1 Nitrification

Ammonia (NH_3) within the subsurface predominately exists in an ionized (protonated) state of ammonium (NH_4^+) under the pH and temperature conditions observed at the site (pH typically between 6 and 7 and groundwater temperatures between approximately 18 and 24 degrees C). These conditions are also optimal for oxidation (nitrification) of ammonium, the primary mechanism for ammonium degradation. Ammonium initially oxidizes to nitrite (NO_2^-) which is catalyzed by Nitrosomonas bacteria. Nitrite is then oxidized by Nitrobacter bacteria resulting in the formation of nitrate (NO_3^+). Nitrate is generally stable in the subsurface environment under aerobic conditions and can persist for long periods of time if it is not removed via plant uptake or discharged to surface water bodies. The very low nitrate concentrations outside of the immediate source area indicate that significant uptake of nitrate is likely in the heavily vegetated marsh located on the SEDA Parcel B. The biodegradation of ammonium and nitrite are typically maximized under aerobic conditions and may be halted under anaerobic conditions. However, anaerobic oxidation of ammonium (anammox) and its byproducts can occur under anoxic conditions via biological denitrification. This process is facilitated by the absence of oxygen and the presence of organic carbon, and reduced sulfur or iron (Buss, S.R., Herbert, A. W., Morgan, P. and Thornton, S.F, 2003). At EPD's request, nitrite analysis has been included in the suite of testing parameters during the last two sampling events to provide additional data regarding ammonia degradation.

10.2.2 Dissolved Oxygen

Review of well purging records indicates concentrations of dissolved oxygen (DO) in the shallow groundwater varies considerably both across the site and seasonally, with the higher DO concentrations observed during the summer sampling events. During the current sampling

event, most wells contained low concentrations DO at the time of sampling. There does appear to be some correlation between DO and nitrite concentrations. Typically, nitrite was not detected in samples exhibiting low DO concentrations (<1.0 mg/L) and the highest nitrite concentrations were detected within wells located in tidal marsh areas. The daily influx of surface water may serve to oxygenate the shallow groundwater in the marsh area. Such conditions would enhance the biodegradation of ammonium within the marsh area. This relationship does not hold in all cases, however, as the highest nitrite concentrations were detected in two wells (PDMW-7P and PDMW-48) which also exhibited low DO. Both of these wells were located in marshy areas which indicates other factors, such as anammox may have locally influenced the formation of nitrite.

10.2.3 Retardation

Subsurface migration of ammonia can also be heavily influenced by retardation effects from aquifer materials. Specifically, the presence of even small amounts (0.1%) of clay can result in retardation factors of 2-3.5 due to cation exchange or adsorption effects. The retardation effects are most pronounced with mixed layer clays such as montmorillonite, which are not expected in this geologic setting. However, double layer clays such as illite and even single layer clays, such as kaolinite (which would be expected on the site) will have a significant retardation effect. As noted in boring logs for site monitoring wells, the aquifer material believed responsible for the bulk of shallow groundwater migration consists primarily of fine to medium grained sand, but minor to moderate amounts of clay are also present throughout the site, particularly in the marshy areas; although the precise mineralogy of these clays has not been determined. The soils within the marshy areas were observed to contain significant amounts of clay generally throughout the depth of the wells in this area. Such conditions represent lower hydraulic conductivities which would be consistent with reduced migration of the ammonia plume across the marsh as is noted with the sharp drop off in observed ammonia and nitrate concentrations between the apparent source area and any wells located within the marsh (MW-3R, PDMW-48, PDMW-49, PDMW-50, PDMW-51 and PDMW-52).

10.2.4 Degradation

The presence of low concentrations of ammonia and nitrate in groundwater and the surface waters of the canal provide evidence that ammonia degradation is occurring on the site. However, much of the nitrate previously detected in the surface water may be attributable to influx from the Savannah River as nitrate concentrations in groundwater were generally below

detection limits except in those wells with the highest ammonia concentrations. As described in previous reports, significant variations in nitrate concentrations in surface water were noted between low tide and high tide which supports the conclusion that the Savannah River has a substantial influence on nitrate concentrations in the surface water in the canal. Unlike the nitrate results, nitrite concentrations in surface water were generally higher in the low tide samples, indicating primary input from groundwater rather than surface water.

10.2.5 Release History

The initial release of ammonia to groundwater was assumed to have occurred approximately 40 years ago. This date was selected as a reasonable starting date based on the use of the property for chemical storage (including liquid fertilizer) by Charter International Oil Company (Charter) beginning in 1973. The storage of ammonia likely ceased when Powell Duffryn took over the site in 1982, but definitely ceased by the early 1990s when Powell-Duffryn vacated the site and the on-site storage tanks were removed. As such, the release was modeled as emanating from a decaying source as all ongoing sources have long since been removed and the ammonia will undergo biotransformation to nitrite and then to nitrate.

10.2.6 Decay Constant

The ammonia decay constant was calculated by preparing a semi-log plot of ammonia concentration vs. time in TMW-1. The slope of the trend line provided the initial model input value. However, the value obtained appeared to be very conservative as it would result in predicted source area concentrations well in excess of what is currently observed. The decay constant valued may have been affected by the previous operation of the remediation system. Therefore, the decay constant was modified somewhat to more closely match observed conditions.

10.2.7 Model Results

Due to the groundwater flow pattern, it was necessary to prepare two models. One model considers the ammonia fate and transport to the north-northwest toward the drainage canal and a second model considers the ammonia fate and transport to the southeast toward the Savannah River.

The northward trending plume model illustrates the migration of ammonia from the source area near TMW-1 toward the drainage canal. An ammonia concentration of 18,000 mg/L was established as an original source area concentration to adjust model input parameters and

establish a decay rate that reasonably matches current field observations. This value represents the highest concentration of ammonia detected on site to date. We note that the exact location and size of the original source area or areas is not known. In addition, the heterogeneity of the aquifer materials (e.g., the hydraulic conductivity measured on site can vary by up to two orders of magnitude) introduces a component of variability as well. For this reason, an average hydraulic conductivity of 7.8×10^{-4} cm/sec, was calculated from 2005 slug test results from TMW-1, TMW-3T and PDMW-22T in the northern portion of the site.

The highest measured ammonia concentration of 18,000 mg/L was utilized as the initial concentration and the model was run over a 120-year time span. The attached output sheets illustrate that after 40 years (i.e. now) the predicted ammonia concentrations generally correspond to those currently observed in TMW-1 and in the area to the north. The northerly plume is modeled between the assumed source area around TMW-1, and PDMW-48 and PDMW-49, the point of demonstration wells located immediately south of the canal. The May 2015 sample result for PDMW-49 was utilized in the current model as this was the most recent data available for this well.

Ammonia concentrations in groundwater predicted by the model were compared to the previously approved risk reduction standard of 30 mg/L. The model output predicts a maximum ammonia concentration in PDMW-49, immediately south of the canal, of approximately 24, mg/L, which should occur approximately 10 years into the future. The predicted maximum ammonia concentration will remain below the RRS of 30 mg/L in the area north of the canal. Although the predicted maximum ammonia concentration of 24 mg/L exceeds the approved ecological criteria for surface water, this does not take into account the significant dilution effects associated with the twice daily influx of fresh surface water from the Savannah River.

The model was also run with the starting concentration of ammonia increased to the point at which the predicted concentration in PDMW-49 would exceed the RRS. As shown on the attached output, an ammonia concentration of 35,000 mg/L would be required for PDMW-49 to exceed the RRS of 30 mg/L. This is more than twice the highest concentration historically detected and more than eight times the highest concentration detected during the VRP monitoring period.

The southward trending plume model run illustrates ammonia migration from the area around EW-1, which is the area of highest observed ammonia concentration located south of the assumed source area around TMW-1. An ammonia concentration of 1,100 mg/L was utilized as

a starting concentration as this was the highest ammonia concentration recorded in this portion of the site. An average hydraulic conductivity of 3×10^{-3} cm/sec was utilized for the southern model. This value was calculated from slug test results obtained from PDMW-10T, PDMW-24T and PDMW-15T which are located in the southern portion of the site. The modeled flow path utilized EW-1 as the source area, and included MW-10R and PDMW-46P to the east-southeast, the direction of groundwater flow in this area as depicted on **Figure 4**, rather than a direct path to the river. We note that the exact flow path is difficult to determine in the area around EW-1 as it is located near the groundwater divide in the central portion of the site and slight variations in the water table configuration can alter the flow direction from EW-1. In order to provide a conservative model, a flow path approximately 1,200 feet long, generally toward the river was assumed. The model output continues to predict that the ammonia concentration reaching the river will remain well below the RRS into the foreseeable future.

The highest concentration of ammonia to reach the river is predicted to be less than 1 mg/L, which are modeled to be occurring now. Ammonia concentrations at the River are predicted to remain at approximately these same levels for the next 15 to 20 years before declining. The source area concentration was increased to evaluate the maximum concentration necessary to result in an exceedance of the RRS at the river. A source area ammonia concentration of 580,000 mg/L was necessary for an exceedance of the RRS at the Savannah River to occur. This concentration is over two orders of magnitude higher than has ever been observed in the area around EW-1.

10.2.8 Model sensitivity

Sensitivity analysis of the BIOCHLOR model input parameters was performed by increasing and decreasing their baseline values for the calibrated model. The results of the analysis are shown in Table A for monitoring well PMW-49 which is the point of demonstration well for the northern plume which represents the most significantly impacted groundwater at the site. This well is adjacent to the drainage canal and therefore is most representative of potential groundwater impacts on the surface water quality.

For modeling purposes, TMW-1 and EW-1 have been assumed to represent the source locations for the northern and southern plume migration, respectively; although, based on the previous testing from EW-1, this may not be the case. In the case of TMW-1, the highest historic concentrations was utilized as the initial ammonia concentration.

The model was developed by inputting a combination of field-measured parameters and literature values into the model which were then adjusted until the constituent distribution curves reasonably matched the groundwater conditions measured at the site as described in previous reports. Those same input parameters were then utilized in longer duration models to predict concentrations of ammonia over time.

10.2.9 Model validation

As illustrated on the attached outputs from the BIOCHLOR model, the model predicts that after approximately 40 years (i.e. now), the ammonia concentrations modeled as emanating from the TMW-1 location is a close match to the conditions currently observed in downgradient wells, including previous results from those wells along the canal and in the marsh, which have been eliminated from the sampling program. Results from the point of demonstration well for the southern plume also provide a relatively close match to the conditions predicted for the southern plume. Modeled concentrations for both nitrate and nitrite, when compared with field conditions indicate that the biotransformation of ammonia to these degradation products is very slow and that the observed downgradient conditions appear to be related to migration with minimal biotransformation. With the exception of the source area well itself, TMW-1, no nitrate concentrations have been observed on site approaching its MCL.

10.2.10 Predictions

The results of the groundwater fate and transport modeling continue to indicate that the migration of ammonia, nitrate and nitrite in either the northerly or southerly directions will not result in exceedences of the RRS in the foreseeable future either at the drainage canal or at the northern hypothetical point of exposure (POE) located 1,000 feet to the north or at the southern hypothetical POE located at the Savannah River boundary. Based on the model, the furthest extent of the plume is approximately 900 feet from the source area which will not occur until approximately 110 years from now. The concentrations predicted at that time are less than 1 mg/L, well below the Type 1 RRS. The furthest extent of ammonia concentrations in excess of the Type 1 RRS is approximately 300 feet downgradient of the source area, which is predicted to occur approximately 10 years from now.

For these reasons, the groundwater exposure pathway is incomplete. Also, the proposed filing of an Environmental Covenant will restrict the use of groundwater on the property where the only exceedances of Type 1 groundwater RRS currently exist.

Based on the information obtained, the groundwater contaminant plume exceeding Type 1/3 RRS for groundwater is limited to the property itself. Fate and transport modeling predicts the plume to be generally stable so that future significant migration will be negligible. Therefore, exposure to contaminated groundwater is considered unlikely in the site vicinity due to the fact that local properties are all connected to municipal water supplies. Groundwater fate and transport modeling have demonstrated the groundwater conditions will not result in exceedances of drinking water standards within 1,000 feet downgradient of the current extent of the plume or Georgia in-stream water quality standards. As such, the properties comprising the site are in compliance with appropriate groundwater criteria under the VRP.

10.3 NO ON-GOING SOURCE

With the demolition of the bulk storage facility in the 1980s and the removal of petroleum source materials and metals-impacted soils in the various corrective actions conducted between 1999 and 2007 the known ongoing contributions to subsurface impacts have been eliminated, as documented in the 2008 Revised CSR. Additionally, no light non-aqueous phase liquid (LNAPL) has been detected on site during numerous groundwater monitoring events. The Property is currently undeveloped. As described in the 2008 Revised CSR, based on previous certification of compliance with RRS for soil, with the exception of small amounts of soil surrounding four utility poles, no additional source materials remain on the Property which would require removal.

10.4 ON-SITE VAPOR INTRUSION

Amec Foster Wheeler evaluated the potential impact of soil gas on future indoor air quality for the Property. The evaluation was completed in accordance with the February 22, 2004 USEPA "User's Guide for Evaluating Subsurface Vapor Intrusion in Buildings". A screening level vapor intrusion risk evaluation was performed for the Property. The results of the evaluation indicate that: (1) the ammonia impacts in the source area (TMW-1) exceed the target groundwater vapor intrusion screening levels for both residential and non-residential properties and (2) benzene and naphthalene concentrations in TMW-1 exceed the residential screening levels but are compliant with the non-residential screening levels.

10.5 SURFACE WATER

The subject site is located on Hutchinson Island, which is surrounded by two channels of the Savannah River. The site is located just north of the southern channel of the river. The

northern channel of the river is located approximately 3,000 feet north of the site. A small drainage canal is located approximately 200 feet north of the site. This canal connects to the southern channel of the river and is subject to significant tidal fluctuations, as is the river in this area. At low tide, the canal is essentially dry.

10.5.1 Ecological Risk Assessment

As requested by EPD in a letter to CSX-RPI dated January 31, 2013, a Screening-Level Ecological Risk Assessment (SLERA), which is provided as the Addendum to this progress report, has been prepared in accordance with Ecological Risk Assessment Guidance for Superfund: Process for Defining and Conducting Ecological Risk Assessments (ERAGS; U.S. Environmental Protection Agency [USEPA], 1997) and the Supplemental Guidance to RAGS: Region 4 Bulletins, Ecological Risk Assessment (USEPA, 2001). The primary purpose of this SLERA is to assess the potential for adverse impacts to ecological receptors in the off-property drainage canal bordering the northern property line. This SLERA evaluated surface water and sediment data collected in December 2013 and January 2014 from the off-property drainage canal. Analyses for chemicals historically associated with the subject property, including dissolved metals, ammonia, nitrate, polycyclic aromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs), were performed on surface water and sediment samples. Reported concentrations were compared to applicable environmental screening values (ESVs) protective of a variety of aquatic organisms to identify constituents of potential concern (COPCs) in surface water and sediment. Both freshwater and marine ESVs were considered in the SLERA due to the brackish nature of the surface water in the canal.

In addition, a biological reconnaissance of the canal and surrounding areas was conducted in January 2014 to assess likely ecological receptors and habitat suitability. The biological reconnaissance noted fiddler crabs in the canal, but no fish were noted. The canal is largely dry at low tide, limiting available habitat for fish populations. The SLERA was focused on risk to benthic macroinvertebrates (e.g., crabs) in the canal because these receptors are directly exposed to surface water and sediment in the canal and form the base of the food chain to other wildlife in the area. Evaluation of higher-trophic level mammals and birds were not included at this step in the ecological risk process.

Based on a comparison to surface water ESVs, no COPCs were identified in surface water. Therefore, surface water in the off-property drainage canal is not anticipated to pose unacceptable ecological risk to aquatic receptors. Sediment constituents with maximum

detected concentrations exceeding their respective sediment ESVs were identified as sediment COPCs and included ammonia, arsenic, lead, nitrate, and zinc. As a next step, concentrations of COPCs in sediments were compared to chemical-specific toxicity benchmarks protective of benthic macroinvertebrates. Because sediment concentrations were less than sediment toxicity benchmarks, exposure within the drainage canal is unlikely to pose significant adverse effects for benthic macroinvertebrates or other aquatic life. The results of the SLERA indicate that no additional ecological risk assessment of the drainage canal is necessary for this property.

Based on the detected concentrations of COCs dissolved in groundwater at the site, the results of the analytical groundwater fate and transport model for the VOCs in question and the results of the testing of the only surface water in the nearby site vicinity, in-stream water quality standards are not exceeded currently, and are not predicted to be exceeded in the future. Therefore, the surface water exposure pathway is incomplete.

10.5.2 Surface water sampling and testing

The drainage canal was sampled on several occasions between 1997 and 2004 by AES. During each sampling event, surface water samples were collected from two locations at the eastern and western portions of the canal nearest the CSXT property at both low and high tide. These samples were generally tested for PAHs, BTEX, metals (filtered and unfiltered) and ammonia. Low concentrations of ammonia have been detected in surface water samples collected from the canal north of the site during previous surface water sampling events conducted by BBL between 1997 and 2004 (see Table 12). Other COCs included in the previous surface water testing program include PAHs, BTEX and metals. Out of a total of 39 surface water samples tested over a seven year period, no PAHs were detected in the surface water samples. Ethylbenzene, toluene and xylenes were detected at very low concentrations in one sample collected in 2002 and were below detection limits in all other events. Lead was detected in three samples and zinc was detected in 24 samples. We note that lead and zinc results appear to have been influenced by suspended sediment as dissolved metals testing, performed on approximately half of the samples, typically exhibited significantly lower metals concentrations, with no detections of lead.

Between 2013 and 2015, Amec Foster Wheeler sampled the canal on four occasions. Surface water samples were collected from four locations within the drainage ditch located on the SEDA property north of the CSXT property. Sample SW-1 was collected where the drainage ditch crosses the road that borders the western portion of the CSXT property. SW-2 and SW-3 were

collected in the area north of the CSXT parcel, downgradient of the two major lobes of the ammonia plume in groundwater. SW-4 was collected where the drainage ditch crosses the road that borders the eastern portion of the CSXT property.

Two rounds of surface water samples were collected during each sampling event, one at high tide and one at low tide. The samples were collected in laboratory supplied containers using a peristaltic pump and Teflon-lined tubing. The following observations are provided based upon an evaluation of the analytical results for surface water samples collected during the May 2015 monitoring event, see Table 15 for a summary of all surface water testing results collected during the VRP monitoring events:

Ammonia concentrations ranged from 0.41 to 0.91 mg/L at high tide and from 0.62 to 1.5 mg/L at low tide. These concentrations are below both the fresh water environmental screening level of 3.206 mg/L and the marine environmental screening level of 1.896 mg/L. May 2015 ammonia concentrations and fluctuations between tidal stages are generally consistent with the results of previous surface water sampling events. Generally, higher ammonia concentrations are observed in surface water samples collected during low tide. After several sampling events, a seasonal pattern to the ammonia concentrations in surface water has become apparent. Ammonia concentrations in summer tend to be significantly higher than those observed in winter. However, even the highest ammonia concentrations remain below applicable ESLs.

Nitrate concentrations ranged from 0.25 to 0.29 mg/L at high tide and from 0.17 to 0.28 mg/L at low tide. May 2015 nitrate concentrations and fluctuations between tidal stages are generally consistent with the results of previous surface water sampling events. Generally, nitrate concentrations are higher at high tide, indicating input from the Savannah River.

Nitrite concentrations ranged from non-detect (less than 0.05 mg/L) to 0.060 mg/L at high tide and from non-detect to 0.094 mg/L at low tide. At the request of the Georgia EPD, surface water samples were analyzed for nitrite for the first time in May 2015.

Alkalinity concentrations ranged from 39 to 100 mg/L at high tide and from 77 to 130 mg/L at low tide. May 2015 alkalinity concentrations are generally consistent with the results of previous surface water sampling events. Generally, higher alkalinity concentrations are observed in surface water samples collected during low tide.

11.0 CONCLUSIONS

Based on the information obtained to date at the property, we offer the following conclusions regarding the CSXT and surrounding properties:

CSXT Property

- The CSXT property is in compliance with Type 3 RRS for soil. Limited areas of soil impacts exceeding Type 2 RRS remain.
- Ammonia, arsenic, benzene, naphthalene and nitrate exceed Type 1/3 RRS for groundwater on the CSXT property. The five VRP sampling events have demonstrated that impacts outside of the source areas are limited in concentration to below applicable RRS and in most areas, site-specific background concentrations, as well. Groundwater impacts within the source areas have been demonstrated to be stable or decreasing in concentration over time and have been laterally and vertically delineated.
- The tidal marsh located adjacent to the CSXT property to the north has been shown to provide an effective barrier to the migration of ammonia and other COCs and appears to facilitate the degradation of ammonia.
- Preliminary vapor intrusion screening indicates the northern corner of the site exceeds residential vapor intrusion screening levels for ammonia, benzene and naphthalene and non-residential screening levels for ammonia.

Spartan Hutchinson Island Investments (west of property)

- Soil impacts have not been identified on the Spartan Hutchinson Island Investments property.
- Groundwater complies with Type 1/3 RRS.

SEDA Parcel B (north of property)

- Soil and groundwater on the SEDA Parcel B are in compliance with Type 3 RRS and the SEDA property has been delisted from the HSI.
- Surface waters within the drainage canal are compliant with ecological risk standards.

Hutchinson Island Ventures (east of property)

- No soil impacts have been identified on the Spartan Hutchinson Island Investments property.
- Groundwater complies with Type 1/3 RRS.

The CSXT property will be eligible for delisting from the HSI because it is in compliance with Type 3 RRS for soil and will be in compliance with Type 4 with controls risk reduction criteria for groundwater upon filing of the Environmental Covenant using institutional controls upon filing of the Environmental Covenant.

References:

Agronomy Solutions, Co. 2002. Bench Study of Ammonium Removal for Soul at Hutchinson Island, Georgia – Powell Duffryn Site.

Applied Engineering & Science, Inc., 2002. Corrective Action Plan: HSI # 10101, Hutchinson Island, Georgia. Prepared for CSX Transportation, Powell Duffryn Terminals, Inc., and Chevron Products Company.

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Blasland, Bouck & Lee, Inc., 2003. Revised Compliance Status Report: Hutchinson Island, Savannah, Georgia. Prepared for CSX Real Property, Powell Duffryn Terminals, Inc., and Chevron Products Company.

Blasland, Bouck & Lee, Inc., 2005. Compliance Status Report Notice of Deficiency Response Letter: Hutchinson Island, Savannah, Georgia. Prepared for CSX Real Property, Powell Duffryn Terminals, Inc., and Chevron Products Company.

Modified Corrective Action Plan, CSXT-Hutchinson Island, prepared by AMEC, dated June 6, 2009;

Response to Notice of Deficiency and Revised Compliance Status Report – Post Soil Corrective Action Report, prepared by AMEC, dated February 29, 2008;

Buss, S.R., Herbert, A.W., Morgan, P., & Thornton, S.F., Review of Ammonium Attenuation in Soil and Groundwater, National Groundwater and Contaminated Land Centre Report NC/02/49, dated July 2003;

Buss, S.R., Rivett, M.O., Morgan, P., & Bemment, C.D., Attenuation of Nitrate in the Subsurface Environment, Environment Agency Science Report SC030155/SR2, dated November 2005;

Bumb, A.C., McKee, C.R., Way, S.C., Drever, J.I and Halepaska, J.C., Ammonia and Nitrate Migration from the Vadose Zone to the Groundwater System; Containment, Recovery and Natural Restoration.

USEPA, 2015. Vapor Intrusion Screening Level (VISL) Calculator, Version 3.4, June 2015 RSLs.

TABLES

Table 1 - Summary of May 2006 Soil Delineation Program Results								
Area	Sample ID	Sample Date	Lead, mg/kg (XRF)	Lead, mg/kg (6010B) Type 3 RRS = 400	Arsenic, mg/kg (XRF)	Arsenic, mg/kg (6010B) Type 3 RRS = 38	PSM Present? (Y/N)	Interval of Petroleum Source Material
Lead Area 2A	LIS-029[0-1']	5/3/2006	244.18	NA	ND	NA	Yes	(0-4') 18-26"
	LIS-029[1-2']	5/3/2006	1300.16	2100	50.78	NA	Yes	(0-4') 18-26"
	LIS-030[0-1']	5/3/2006	65.44	NA	ND	NA	Yes	(0-4') 12-18"
	LIS-030[1-2']	5/3/2006	38.16	NA	ND	NA	Yes	(0-4') 12-18"
	LIS-031[0-1']	5/3/2006	38	NA	ND	NA	No	
	LIS-031[1-2']	5/3/2006	14.82	NA	ND	NA	No	
	LIS-032[0-1']	5/3/2006	364.13	350	ND	NA	No	
	LIS-032[1-2']	5/3/2006	54.24	NA	ND	NA	No	
	LIS-033[0-1']	5/3/2006	174.86	NA	ND	NA	No	
	LIS-033[1-2']	5/3/2006	2049.42	11000	ND	NA	No	
	LIS-034[0-1']	5/3/2006	205.36	NA	ND	NA	Yes	(0-4') 21-27"
	LIS-034[1-2']	5/3/2006	207.33	270	ND	NA	Yes	(0-4') 21-27"
	LIS-035[0-1']	5/3/2006	115.26	120	ND	NA	No	
	LIS-035[1-2']	5/3/2006	70.4	NA	ND	NA	No	
	LIS-036[0-1']	5/3/2006	132.99	110	ND	NA	No	
	LIS-036[1-2']	5/3/2006	47.59	NA	ND	NA	No	
	LIS-037[0-1']	5/3/2006	197.73	430	ND	NA	No	
	LIS-037[1-2']	5/3/2006	275.64	NA	ND	NA	No	
Lead Area 2B	LIS-027[0-1']	5/3/2006	205.97	2700	ND	NA	Yes	(0-4') 26-32"
	LIS-027[1-2']	5/3/2006	70.19	NA	ND	NA	Yes	(0-4') 26-32"
	LIS-028[0-1']	5/3/2006	260.48	270	ND	NA	No	
	LIS-028[1-2']	5/3/2006	64.72	NA	ND	NA	No	
Lead Area 2C	LIS-019[0-1']	5/2/2006	91.19	86	ND	NA	Yes	(0-4') 25-30"
	LIS-019[1-2']	5/2/2006	62.5	NA	ND	NA	Yes	(0-4') 25-30"
	LSI-020[0-1']	5/2/2006	231.63	280	ND	NA	Yes	(0-4') 22-26"
	LIS-020[1-2']	5/2/2006	36.65	NA	ND	NA	Yes	(0-4') 22-26"
	LIS-021[0-1']	5/2/2006	193.93	NA	ND	NA	Yes	(0-4') 29-34"
	LIS-021[1-2']	5/2/2006	118.38	NA	ND	NA	Yes	(0-4') 29-34"
	LIS-021[2-3']	5/2/2006	33.88	NA	ND	NA	Yes	(0-4') 29-34"
	LIS-022[0-1']	5/2/2006	352.52	260	ND	NA	Yes	(0-4') 18-30"
	LIS-022[1-2']	5/2/2006	124.62	NA	ND	NA	Yes	(0-4') 18-30"
	LIS-023[0-1']	5/2/2006	210.27	NA	ND	NA	Yes	(0-4') 20-26"
	LIS-023[1-2']	5/2/2006	109.92	NA	ND	NA	Yes	(0-4') 20-26"
	LIS-024[0-1']	5/2/2006	177.55	NA	ND	NA	Yes	(0-4') 26-29"
	LIS-024[1-2']	5/2/2006	98.87	NA	ND	NA	Yes	(0-4') 26-29"
	LIS-025[0-1']	5/2/2006	186.03	NA	ND	NA	Yes	(0-4') 18-20"
	LIS-025[1-2']	5/2/2006	54.99	NA	ND	NA	Yes	(0-4') 18-20"
	LIS-026[0-1']	5/2/2006	121.53	120	ND	NA	Yes	(0-4') 13-17"
	LIS-026[1-2']	5/2/2006	331.07	NA	ND	NA	Yes	(0-4') 13-17"
Lead Area 3A	LIS-087[0-1']	5/4/2006	43.34	NA	ND	NA	No	
	LIS-088[0-1']	5/4/2006	291.49	NA	20.72	NA	No	
	LIS-088[1-2']	5/4/2006	127.55	NA	13.19	NA	No	

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Area	Sample ID	Sample Date	Lead, mg/kg (XRF)	Lead, mg/kg (6010B) Type 3 RRS = 400	Arsenic, mg/kg (XRF)	Arsenic, mg/kg (6010B) Type 3 RRS = 38	PSM Present? (Y/N)	Interval of Petroleum Source Material
Lead Area 3B	LIS-070[0-1']	5/4/2006	319.25	NA	ND	NA	Yes	(0-4') 9-20"
	LIS-071[0-1']	5/4/2006	381.19	NA	ND	NA	Yes	(0-4') 10-16"
	LIS-072[0-1']	5/4/2006	239.01	420	ND	NA	Yes	(0-4') 10-17"
	LIS-073[0-1']	5/4/2006	992.14	990	ND	NA	Yes	(0-4') 26-27"
	LIS-074[0-1']	5/4/2006	608.07	NA	ND	NA	Yes	(0-4') 15-19"
	LIS-075[0-1']	5/4/2006	167.34	NA	ND	NA	No	
	LIS-075[1-2']	5/4/2006	81.21	NA	ND	NA	No	
	LIS-076[0-1']	5/4/2006	420.86	NA	ND	NA	No	
	LIS-077[0-1']	5/4/2006	656.28	NA	ND	NA	No	
	LIS-078[0-1']	5/4/2006	134.71	NA	ND	NA	No	
	LIS-079[0-1']	5/4/2006	740.84	NA	ND	NA	Yes	(0-4') 9-13"
	LIS-080[0-1']	5/4/2006	720.65	NA	ND	NA	No	
	LIS-081[0-1']	5/4/2006	45.84	NA	ND	NA	No	
	LIS-082[0-1']	5/4/2006	123.43	NA	ND	NA	Yes	(0-4') 13-14" and 19-24"
	LIS-083[0-1']	5/4/2006	148.52	NA	ND	NA	No	
	LIS-084[0-1']	5/4/2006	659.75	1700	ND	NA	No	
	LIS-085[0-1']	5/4/2006	11.74	9.6	ND	NA	No	
	LIS-086[0-1']	5/4/2006	ND	2.5	ND	NA	No	
Lead Area 4A	LIS-135[0-1']	5/6/2006	280.3	NA	ND	NA	No	
	LIS-135[1-2']	5/6/2006	342.08	450	ND	NA	No	
	LIS-136[0-1']	5/6/2006	148.92	NA	15.85	NA	No	
	LIS-137[0-1']	5/6/2006	316.24	430	ND	NA	No	
	LIS-138[0-1']	5/6/2006	259.07	NA	21.02	NA	No	
	LIS-139[0-1']	5/6/2006	123.8	NA	ND	NA	No	
	LIS-140[0-1']	5/6/2006	99.2	95	ND	NA	No	
Lead Area 5A	LIS-140[1-2']	5/6/2006	70.13	NA	ND	NA	No	
	LIS-006[0-1']	5/2/2006	11.11	17	ND	NA	No	
	LIS-006[1-2']	5/2/2006	52.23	150	ND	NA	No	
	LIS-007[0-1']	5/2/2006	92.29	94	ND	NA	No	
	LIS-007[1-2']	5/2/2006	1036.67	620	ND	NA	No	
	LIS-008[0-1']	5/2/2006	270.26	190	ND	NA	No	
	LIS-008[1-2']	5/2/2006	40.9	99	ND	NA	No	
	LIS-009[0-1']	5/2/2006	18.54	14	ND	NA	No	
	LIS-009[1-2']	5/2/2006	ND	5.2	ND	NA	No	
	LIS-010[0-1']	5/2/2006	ND	10	ND	NA	No	
	LIS-010[1-2']	5/2/2006	19.5	21	ND	NA	No	
	LIS-011[0-1']	5/2/2006	71.01	88	ND	NA	No	
	LIS-011[1-2']	5/2/2006	32.8	43	ND	NA	No	
	LIS-012[0-1']	5/2/2006	64.25	63	ND	NA	No	
	LIS-012[1-2']	5/2/2006	93.62	94	ND	NA	No	
	LIS-013[0-1']	5/2/2006	83.79	82	13.87	NA	No	
	LIS-013[1-2']	5/2/2006	75.44	96	ND	NA	No	

Table 1 - Summary of May 2006 Soil Delineation Program Results								
Area	Sample ID	Sample Date	Lead, mg/kg (XRF)	Lead, mg/kg (6010B) Type 3 RRS = 400	Arsenic, mg/kg (XRF)	Arsenic, mg/kg (6010B) Type 3 RRS = 38	PSM Present? (Y/N)	Interval of Petroleum Source Material
Lead Area 5B	LIS-001[0-1']	5/2/2006	58.33	77	ND	NA	No	
	LIS-001[1-2']	5/2/2006	56.15	65	ND	NA	No	
	LIS-002[0-1']	5/2/2006	54.89	59	ND	NA	No	
	LIS-002[1-2']	5/2/2006	50.07	44	ND	NA	No	
	LIS-003[0-1']	5/2/2006	84.34	82	ND	NA	No	
	LIS-003[1-2']	5/2/2006	28.81	32	ND	NA	No	
	LIS-004[0-1']	5/2/2006	70.4	410	ND	NA	No	
	LIS-004[1-2']	5/2/2006	27.14	37	ND	NA	No	
	LIS-005[0-1']	5/2/2006	126.95	130	ND	NA	No	
	LIS-005[1-2']	5/2/2006	62.38	82	ND	NA	No	
	LIS-064[0-1']	5/4/2006	159.48	NA	ND	NA	No	
	LIS-064[1-2']	5/4/2006	253.1	NA	ND	NA	No	
	LIS-065[0-1']	5/4/2006	486.84	610	ND	NA	No	
	LIS-065[1-2']	5/4/2006	31.54	NA	ND	NA	No	
	LIS-066[0-1']	5/4/2006	1028.41	2400	ND	NA	No	
	LIS-066[1-2']	5/4/2006	380.17	NA	ND	NA	No	
	LIS-067[0-1']	5/4/2006	87.72	100	ND	NA	No	
	LIS-067[1-2']	5/4/2006	92.43	NA	ND	NA	No	
	LIS-068[0-1']	5/4/2006	120.95	120	ND	NA	No	
	LIS-068[1-2']	5/4/2006	37.82	NA	ND	NA	No	
	LIS-069[0-1']	5/4/2006	189.77	220	ND	NA	No	
	LIS-069[1-2']	5/4/2006	197.75	NA	ND	NA	No	
Lead Area 5C	LIS-014[0-1']	5/2/2006	122.83	140	ND	NA	No	
	LIS-014[1-2']	5/2/2006	72.35	82	ND	NA	No	
	LIS-015[0-1']	5/2/2006	145.56	130	ND	NA	No	
	LIS-015[1-2']	5/2/2006	303.14	210	ND	NA	No	
	LIS-016[0-1']	5/2/2006	221.89	NA	ND	NA	No	
	LIS-016[1-2']	5/2/2006	206.75	NA	ND	NA	No	
	LIS-017[0-1']	5/2/2006	339.4	460	ND	NA	No	
	LIS-017[1-2']	5/2/2006	305.16	NA	ND	NA	No	
	LIS-018[0-1']	5/2/2006	278.49	NA	ND	NA	No	
	LIS-018[1-2']	5/2/2006	259.8	NA	ND	NA	No	
Former Lead Area 6	LIS-145[0-1']	5/6/2006	43.96	46	ND	NA	No	
	LIS-146[0-1']	5/6/2006	21.66	NA	ND	NA	No	
	LIS-147[0-1']	5/6/2006	52.97	35	ND	NA	No	
	LIS-148[0-1']	5/6/2006	46.38	NA	ND	NA	No	
	LIS-149[0-1']	5/6/2006	40.98	NA	ND	NA	No	

Table 1 - Summary of May 2006 Soil Delineation Program Results

Area	Sample ID	Sample Date	Lead, mg/kg (XRF)	Lead, mg/kg (6010B) Type 3 RRS = 400	Arsenic, mg/kg (XRF)	Arsenic, mg/kg (6010B) Type 3 RRS = 38	PSM Present? (Y/N)	Interval of Petroleum Source Material
PSM AREA 2	LIS-056[0-4']	5/3/2006	NA	NA	NA	NA	No	
	LIS-057[0-4']	5/3/2006	NA	NA	NA	NA	No	
	LIS-058[0-4']	5/3/2006	NA	NA	NA	NA	No	
	LIS-059[0-4']	5/3/2006	NA	NA	NA	NA	Yes	(0-4') 13-17"
	LIS-060[0-4']	5/3/2006	NA	NA	NA	NA	No	
	LIS-061[0-4']	5/3/2006	NA	NA	NA	NA	Yes	(0-4') 18-22"
	LIS-089[0-4']	5/4/2006	NA	NA	NA	NA	Yes	(0-4') 14-33"
	LIS-090[0-4']	5/4/2006	NA	NA	NA	NA	No	
	LIS-091[0-4']	5/4/2006	NA	NA	NA	NA	Yes	(0-4') 20-21"
	LIS-092[0-4']	5/4/2006	NA	NA	NA	NA	Yes	(0-4') 13-21"
	LIS-093[0-4']	5/4/2006	NA	NA	NA	NA	Yes	(0-4') 10-22"
	LIS-107[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 18-34"
	LIS-108[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 18-32"
	LIS-109[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 29-34"
	LIS-110[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 24-29"
	LIS-111[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 29-37"
	LIS-112[0-4']	5/5/2006	NA	NA	NA	NA	No	
	LIS-113[0-4']	5/5/2006	NA	NA	NA	NA	No	
	LIS-114[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 16-18"
	LIS-115[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 23-29"
	LIS-116[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 11-17"
	LIS-117[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 21-24"
	LIS-118[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 38-43"
	LIS-119[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 16-22"
	LIS-120[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 12-17"
	LIS-121[0-4']	5/5/2006	NA	NA	NA	NA	No	
	LIS-122[0-4']	5/5/2006	NA	NA	NA	NA	No	
	LIS-123[0-4']	5/5/2006	NA	NA	NA	NA	No	
	LIS-124[0-4']	5/5/2006	NA	NA	NA	NA	No	
	LIS-125[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 16-28"
	LIS-126[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 23-36"
	LIS-127[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 12-26"
	LIS-128[0-4']	5/5/2006	NA	NA	NA	NA	No	
	LIS-129[0-4']	5/5/2006	NA	NA	NA	NA	No	
	LIS-130[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 10-28"
	LIS-131[0-4']	5/5/2006	NA	NA	NA	NA	No	
	LIS-132[0-4']	5/5/2006	NA	NA	NA	NA	No	
	LIS-133[0-4']	5/5/2006	NA	NA	NA	NA	No	
	LIS-134[0-4']	5/5/2006	NA	NA	NA	NA	No	
PSM AREA 4	LIS-094[0-8']	5/5/2006	NA	NA	NA	NA	No	
	LIS-095[0-8']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 16-25"
	LIS-096[0-8']	5/5/2006	NA	NA	NA	NA	Yes	(4-8') 14-25"
	LIS-097[0-8']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 24-35" (4-8') 0-15"
	LIS-098[0-8']	5/5/2006	NA	NA	NA	NA	No	
	LIS-099[0-8']	5/5/2006	NA	NA	NA	NA	Yes	(4-8') 19-22"
	LIS-100[0-8']	5/5/2006	NA	NA	NA	NA	Yes	(4-8') 18-19"
	LIS-101[0-8']	5/5/2006	NA	NA	NA	NA	Yes	(4-8') 20-21"
	LIS-102[0-8']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 9-32" (4-8') 0-2"
	LIS-103[0-8']	5/5/2006	NA	NA	NA	NA	No	
	LIS-104[0-8']	5/5/2006	NA	NA	NA	NA	No	
	LIS-105[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 12-29"
	LIS-106[0-4']	5/5/2006	NA	NA	NA	NA	Yes	(0-4') 20-36"

ND = less than detection limit of XRF device

NA = Not Analyzed

PSM = Petroleum Source Material

Results shaded and in bold denote exceedence of the EPD Type 3/4 RRS for lead/arsenic, XRF reading greater than 266 mg/kg for lead, or the presence of PSM

All units are in mg/Kg

Table 2 - Summary of 2007 Site Wide Investigation - PSM Boring Observations

Boring ID	PSM Present (Y/N)	Depth to PSM (inches bgs)	PSM thickness (inches)	Comments
3/27/2007				
SWI-001	N	--	--	Gray sand, no odor, no sheen
SWI-002	N	--	--	Gray sand, no sheen, no odor
SWI-003	N	--	--	Gray sand, some clay, no sheen, no odor
SWI-004	N	--	--	Gray sand, no sheen, no odor
SWI-005	N	--	--	Gray sand, no sheen, no odor
SWI-006	N	--	--	Gray sand, no sheen, no odor
SWI-007	N	--	--	Gray sand, trace clay, no sheen, no odor
SWI-008	N	--	--	Gray sand, no sheen, no odor
SWI-009	N	--	--	Gray sand, no sheen, no odor
SWI-010	N	--	--	Gray sand, no sheen, no odor
SWI-011	N	--	--	Gray sand, no sheen, no odor
SWI-012	N	--	--	Gray sand, no sheen, chemical odor, no PSM
SWI-013	N	--	--	Gray sand, no sheen, no PSM, strong chemical odor
SWI-014	N	--	--	Dark gray sand, trace clay, trace coal, no sheen, no PSM, strong chemical odor
SWI-015	N	--	--	Gray sand, no sheen, no odor, no PSM
SWI-016	N	--	--	Gray sand, no sheen, no odor, no PSM
SWI-017	N	--	--	Gray sand, dense, no sheen, no odor, no PSM
SWI-018	N	--	--	Gray sand, some black stains not PSM, mud odor
SWI-019	N	--	--	Gray sand and clay, no sheen, no PSM, minor organic odor
SWI-020	N	--	--	Gray sand and clay, no sheen, no PSM, slight odor
SWI-021	N	--	--	Black stained sand from 2-2.5' not PSM, strong odor
SWI-022	N	--	--	Brown sand, no sheen, no odor, no PSM
SWI-023	N	--	--	Gray sand and clay, no sheen, no odor, no PSM
SWI-024	N	--	--	Gray sand and clay (6') no sheen, no odor, no PSM
SWI-025	N	--	--	Gray sand and clay (6') no sheen, no odor, no PSM
SWI-026	N	--	--	Gray sand and clay, no sheen, no odor, no PSM
SWI-027	N	--	--	Gravel (trench material) no PSM, no sheen, no odor
SWI-028	N	--	--	Gray sand, no PSM, no sheen, no odor
SWI-029	N	--	--	Some black possibly organic staining 1-2" no PSM
SWI-030	N	--	--	No PSM, no odor, no sheen
SWI-031	N	--	--	No PSM, no odor, no sheen
SWI-032	N	--	--	No PSM, no odor, no sheen
SWI-033	Y	10"	8"	Black sticky PSM layer, strong petroleum odor and sheen
SWI-034	N	--	--	Gray sand and clay, no sheen, no odor
SWI-035	N	--	--	Gray sand, no sheen, no odor
SWI-036	N	--	--	No PSM, brown sand, no sheen, no odor
SWI-037	N	--	--	No PSM, no sheen, no odor
SWI-038	N	--	--	No PSM, white gray sand
3/28/2007				
SWI-039	N	--	--	Gray sand, no PSM, no sheen, no odor
SWI-040	N	--	--	Dark gray sand, strong odor, trace PSM at 18"
SWI-041	N	--	--	Dark gray sand, no PSM, strong odor PID = 141ppm
SWI-042	N	--	--	Dark gray sand, no PSM, strong odor PID = 195 ppm, no sheen
SWI-043	N	--	--	Gray sand, no sheen, no odor, no PSM
SWI-044	N	--	--	Gray sand, no sheen, no odor, no PSM
SWI-045	N	--	--	Gray sand, no sheen, no odor, no PSM
SWI-046	N	--	--	Gray sand, no sheen, no odor, no PSM
SWI-047	N	--	--	Dark gray sand, no sheen, no odor, no PSM
SWI-048	N	--	--	Dark gray sand, trace PSM at 18", strong petroleum odor, sheen present, PID = 151ppm
SWI-049	N	--	--	Dark gray to black sand, no sheen, no odor, no PSM
SWI-050	N	--	--	Gray sand, slight odor, no sheen, no odor, no PSM
SWI-051	Y	10 "	~12"	Amber brown to black PSM layer, amber from 10-22", black soft silty clay under PSM layer, strong organic odor
SWI-052	N	--	--	Black soft layer of slight PSM from 10-13", no sheen
SWI-053	N	--	--	No PSM, gray sand, no sheen, no odor
SWI-054	N	--	--	Grayish black sand and clay, slight PSM at 18", no sheen
SWI-055	N	--	--	Dark gray sand, very strong odor, PID=392 ppm, no PSM, no sheen
SWI-056	N	--	--	Gravel (trench material) not much recovery, some black clay, moderate petroleum odor, no PSM, no sheen
SWI-057	N	--	--	Black stained sand (4-6') slight odor, no sheen, no PSM
SWI-058	N	--	--	Dark gray sand and clay, no sheen, no odor, no PSM
SWI-059	N	--	--	Dark gray sand and clay, no sheen, no odor, no PSM
SWI-060	N	--	--	Dark gray sand 0-4.5', strong chemical odor, (PID=428ppm), no PSM, clay below 4-5', no sheen
SWI-061	N	--	--	Dark gray sand 0-4.5', strong chemical odor, (PID=275ppm), no PSM, clay below 4-5', no sheen
SWI-062	N	--	--	Dark gray sand 0-5', clay below, moderate chemical odor, (PID=87), no PSM, no sheen
SWI-063	N	--	--	Dark gray sand 0-5', clay below, moderate chemical odor, (PID=80), trace PSM near surface, no PSM, no sheen
SWI-064	N	--	--	Gray medium sand above clay, no sheen, no odor, no PSM
SWI-065	N	--	--	Gray sand and clay at 6', no sheen, no odor, no PSM
SWI-066	N	--	--	Dark gray sand above clay at 6', no sheen, slight chemical odor, PID=8ppm, no PSM
SWI-067	N	--	--	Dark gray sand above clay at 5', no sheen, slight chemical odor, no PSM
SWI-068	N	--	--	Dark gray sand above clay at 6', no sheen, no odor, no PSM
SWI-069	N	--	--	Grayish brown sand above clay at 6', no sheen, no odor, no PSM

Table 2 - Summary of 2007 Site Wide Investigation - PSM Boring Observations

Boring ID	PSM Present (Y/N)	Depth to PSM (inches bgs)	PSM thickness (inches)	Comments
SWI-070	N	--	--	Gray sand over clay at 5', no sheen, no odor, no PSM
SWI-071	N	--	--	Gray sand over clay at 7', no sheen, no odor, no PSM
SWI-072	N	--	--	Gray sand over clay at 7', no sheen, no odor, no PSM
SWI-073	N	--	--	Gray sand over clay at 6', no sheen, slight chemical odor, no PSM
SWI-074	N	--	--	Gray sand over clay at 7', no sheen, no odor, no PSM
SWI-075	N	--	--	Gray sand over clay at 7.5', no sheen, no odor, no PSM
SWI-076	N	--	--	Brown sand down to 8', no sheen, no odor, no PSM
SWI-077	N	--	--	Gray sand down to 8', no sheen, no odor, no PSM
3/29/2007				
SWI-078	N	--	--	Gray sand to 8', no sheen, no odor, no PSM
SWI-079	N	--	--	Gray sand to 8', no sheen, no odor, no PSM
SWI-080	N	--	--	Gray sand coarse to 8', no sheen, no odor, no PSM
SWI-081	N	--	--	Gray sand coarse to 8', no sheen, no odor, no PSM
SWI-082	N	--	--	Gray sand coarse to 8', no sheen, no odor, no PSM
SWI-083	N	--	--	Gray sand over clay at 7', no sheen, no odor, no PSM
SWI-084	N	--	--	Gray sand to 8', no sheen, no odor, no PSM
SWI-085	N	--	--	Gray sand over clay at 7', no sheen, no odor, no PSM
SWI-086	N	--	--	Dark gray sand, slight petro odor, (PID=11ppm), no sheen, no PSM
SWI-087	N	--	--	Trace PSM at 3', (2") thick layer black, no sheen, mild odor
SWI-088	N	--	--	Gray brown coarse sand to 8', no sheen, no odor, no PSM
SWI-089	N	--	--	Gray sand to 8', no sheen, no odor, no PSM
SWI-090	N	--	--	Gray brown sand to 8', no sheen, no odor, no PSM
SWI-091	N	--	--	Gray sand to 8', no sheen, no odor, no PSM
SWI-092	N	--	--	Brown medium sand to 8', no sheen, no odor, no PSM
SWI-093	N	--	--	Gray sand down to 8', no sheen, no odor, no PSM
SWI-094	N	--	--	Gray sand down to 8', no sheen, no odor, no PSM
SWI-095	N	--	--	Gray sand to 6.5' clay below, black stained sand at 3', no sheen, no odor, no PSM
SWI-096	N	--	--	Gray sand to 8', trace PSM in top 12", no sheen, no odor
SWI-097	N	--	--	Gray sand to 6' clay below, trace PSM at 2-4", no sheen, no odor, no PSM
SWI-098	N	--	--	Gray sand, no sheen, no odor, no PSM, clay not found sand to 8'
SWI-099	N	--	--	Gray sand to 8', no sheen, no odor, no PSM
SWI-100	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-101	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-102	N	--	--	Gray sand to 6' clay below, trace PSM 2-2.5', no sheen, no odor
SWI-103	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-104	N	--	--	Gray sand to 8' no sheen, no odor, no PSM
SWI-105	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-106	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-107	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-108	N	--	--	Brown to gray sand to 7' clay below, no sheen, no odor, no PSM
SWI-109	N	--	--	Gray and brown sand no clay, no sheen, no odor, no PSM
SWI-110	N	--	--	Gray coarse sand no clay, no sheen, no odor, no PSM
3/30/2007				
SWI-111	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-112	N	--	--	Gray sand to 8' no sheen, no odor, no PSM
SWI-113	N	--	--	Gray sand to 7' clay below, no sheen, no odor, no PSM
SWI-114	N	--	--	Gray sand to 7' clay below, black stained 4" layer of sand at 5', no sheen, no odor, no PSM
SWI-115	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-116	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-117	N	--	--	Gray (dark) sand to 8' no clay, slight sheen, slight petroleum odor (PID=33) no PSM
SWI-118	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-119	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-120	N	--	--	Gray brown sand to 8' no clay, no sheen, no odor, no PSM
SWI-121	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-122	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-123	N	--	--	Gray sand to 6.5' clay below, no sheen, no odor, no PSM
SWI-124	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-125	N	--	--	Gray sand to 6.5' clay below, slight sheen, no odor, no PSM
SWI-126	N	--	--	Gray sand to 7' clay below, no sheen, no odor, no PSM
SWI-127	N	--	--	Gray sand above clay at 6', no sheen, no odor, no PSM
SWI-128	N	--	--	Gray sand to 7' clay below, no sheen, no odor, no PSM
SWI-129	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-130	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-131	N	--	--	Gray sand to 7' no clay, no sheen, no odor, no PSM
SWI-132	N	--	--	Tan to light sand down to 8', no sheen, no odor, no PSM
SWI-133	N	--	--	Brown to tan sand down to 6' clay below, no sheen, no odor, no PSM
SWI-134	N	--	--	Gray sand to 6.5' clay below, dark gray stained layer (3") at 2', moderate petroleum odor, no sheen, no PSM (PID=68 at stained layer)
SWI-135	N	--	--	Gray sand to 7' clay below, no sheen, no odor, no PSM
SWI-136	N	--	--	Gray sand to 5' clay below, no sheen, no odor, no PSM
SWI-137	N	--	--	Gray sand to 6' clay below 4" black stained layer at 2' (PID=57) no sheen, no odor, no PSM
SWI-138	N	--	--	Gray sand down to 7' clay below, moderate petroleum odor throughout sand (PID=102), no sheen, no PSM

Table 2 - Summary of 2007 Site Wide Investigation - PSM Boring Observations

Boring ID	PSM Present (Y/N)	Depth to PSM (inches bgs)	PSM thickness (inches)	Comments
SWI-139	N	--	--	Gray sand down to 6' clay below, moderate petroleum odor on all sand
SWI-140	N	--	--	PID=72, no sheen, no PSM Gray sand down to 7' clay below, moderate petroleum odor throughout, 2" black stained layer at 16" PID=72, slight sheen, no PSM
SWI-141	Y	24"	10"	Black to blackish silver PSM layer, strong petroleum odor and sheen
SWI-142	N	--	--	Gray sand to 8' no clay, slight odor, no sheen, no PSM
SWI-143	N	--	--	Dark gray stained sand, slight sheen, moderate petroleum odor, no PSM
SWI-144	N	--	--	Dark gray sand to 6' clay below, black stained layer (2" at 2', no PSM, moderate petroleum odor PID=83, slight sheen, no PSM
SWI-145	N	--	--	Dark gray sand to 6' clay below, black stained layer (2" at 20', no PSM, moderate petroleum odor throughout PID=102, slight sheen
SWI-146	N	--	--	Dark gray sand to 8', appears stained dark, not PSM, moderate petroleum odor PID=456, slight sheen
SWI-147	Y	16"	12"	Black to amber brown PSM layer, strong petroleum odor and sheen, no clay
SWI-148	Y	12"	10"	Black to dark gray PSM layer, strong petroleum odor and sheen, silty clay layer at 7'
SWI-149	N	--	--	Gray sand down to 8', no clay, no sheen, no odor, no PSM
SWI-150	N	--	--	Gray sand to 6' clay beneath trace PSM from 2'-2.5', slight sheen, moderate petroleum odor PSM trace is not associated through 2-2.5' interval but intermittent 4/2/2007
SWI-151	N	--	--	Brown sand to 1.5', trace PSM from 1.5-2.0 feet bgs, stained black and not consistent, no sheen, slight odor
SWI-152	N	--	--	Gray sand down to 7' clay below, no sheen, no odor, no PSM
SWI-153	N	--	--	Gray sand down to 7' clay below, no sheen, no odor, no PSM
SWI-154	Y	18"	24"	Amber brown to black PSM layer, strong petroleum odor and free phase globules noted, very consistent layer
SWI-155	Y	33"	41"	Two PSM layers, amber brown, sticky, sheen, strong petroleum odor 13" top and 18" bottom 10" layer of gray sand between PSM layers, 2" gray sand at bottom of 4-8' boring
SWI-156	Y	20"	10"	Amber brown sticky PSM layer, strong petroleum odor and sheen, no clay
SWI-157	N	--	--	Gray sand down to 8', no PSM, no sheen, slight odor, 3" dark gray stained layer at 3.5'
SWI-158	Y	16"	7"	Amber brown to black, sticky PSM layer, strong petroleum odor and sheen, gray sand below 8'
SWI-159	N	--	--	Gray sand down to 8' no clay, no sheen, no odor, no PSM
SWI-160	N	--	--	Gray sand down to 7' clay below, no sheen, no odor, no PSM
SWI-161	Y	12"	22"	Amber brown to black, sticky PSM layer, strong petroleum odor and sheen, clay at 7.5'
SWI-162	N	--	--	No PSM gray sand to 7.5' clay below, no sheen, no odor, no PSM
SWI-163	N	--	--	Dark gray sand down to 7' clay below, no sheen, no odor, no PSM
SWI-164	N	--	--	Gray sand to 7' clay below, no sheen, no odor, no PSM
SWI-165	N	--	--	Gray sand to 6.5' clay below, no sheen, no odor, no PSM
SWI-166	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-167	Y	28"	3"	Amber brown PSM layer, intermixed with gray sandy clay at 6.5', strong petroleum odor and sheen
SWI-168	N	--	--	Gray sand to 5' clay below, no sheen, no odor, no PSM
SWI-169	N	--	--	Gray sand to 4' refusal at 4' concrete no clay, no PSM, no sheen, no odor
SWI-170	N	--	--	Gray sand to 5' refusal at 5' concrete no clay, no PSM, no sheen, no odor
SWI-171	N	--	--	Gray sand and gravel to 4.5' refusal at 4.5' concrete, slight 2" layer of PSM at 22-24" black stained
SWI-172	Y	12"	10"	Amber brown sticky PSM layer, strong pungent odor, gravel below
SWI-173	N	--	--	Dark brownish gray fine sand, slight to moderate petroleum odor, slight sheen, trace PSM 6-12"
SWI-174	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-175	N	--	--	Grayish brown sand down to 7' clay below, trace PSM 6-12", moderate petroleum odor, no sheen
SWI-176	N	--	--	Yellow till to 3.5' gray sand/clay below, no sheen, no odor, no PSM
SWI-177	N	--	--	Gray sand to 3' refusal at 3' no clay, no sheen, no odor, no PSM
SWI-178	N	--	--	Gray sand to 6' refusal at 6', no PSM, no sheen, no odor, no PSM
SWI-179	N	--	--	Gray sand to 4.5' refusal at 4.5' no clay, no sheen, no odor, no PSM
SWI-180	N	--	--	Gray sand to 3' refusal at 3', slight black staining (2") at 2.5', no PSM, no sheen, slight odor 4/3/2007
SWI-181	N	--	--	Gray brown sand to 8' no clay, no sheen, no odor, no PSM
SWI-182	N	--	--	Gray sand to 6.5' clay below, no sheen, no odor, no PSM
SWI-183	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-184	N	--	--	Gray sand to 7' clay below, no sheen, no odor, no PSM
SWI-185	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-186	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-187	N	--	--	Gray sand to 7.5' clay below, no sheen, no odor, no PSM
SWI-188	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-189	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-190	N	--	--	Gray sand to 3.5' refusal at 3.5', no sheen, no odor, no PSM

Table 2 - Summary of 2007 Site Wide Investigation - PSM Boring Observations

Boring ID	PSM Present (Y/N)	Depth to PSM (inches bgs)	PSM thickness (inches)	Comments
SWI-191	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-192	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-193	N	--	--	Brown sand to 3.5' refusal at 3.5' no clay, no sheen, no odor, no PSM
SWI-194	Y	50"	4"	Amber brown PSM layer, strong petroleum odor and free phase globules noted, no clay
SWI-195	N	--	--	Gray brown sand down to 8' no clay, no sheen, no odor, no PSM
SWI-196	Y	18"	17"	Amber brown sticky PSM layer, strong petroleum odor and sheen, clay at 6.5'
SWI-197	N	--	--	Gray sand to 7.5' clay below, no sheen, no odor, no PSM
SWI-198	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-199	N	--	--	Gray sand down to 7' clay below, no sheen, no odor, no PSM
SWI-200	N	--	--	Gray sand to 6.5' clay below, no sheen, no odor, no PSM
SWI-201	N	--	--	Black organic silty sand, slight sheen, no PSM, no odor
SWI-202	N	--	--	Gray sand down to 8' no clay, no sheen, no odor, no PSM
SWI-203	N	--	--	Gray sand down to 8' no clay, no sheen, no odor, no PSM
SWI-204	N	--	--	Gray sand no clay, no sheen, no odor, no PSM
SWI-205	N	--	--	Gray sand to 6.5' clay below, no sheen, no odor, no PSM
SWI-206	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-207	N	--	--	Brown sand to 2.5' clay below, no sheen, no odor, no PSM
SWI-208	N	--	--	Gray sand to 6.5' clay below, no sheen, no odor, no PSM
SWI-209	N	--	--	Gray brown sand to 4' clay below, no sheen, no odor, no PSM
SWI-210	N	--	--	Gray sand to 7.5' clay below, no sheen, no odor, no PSM
SWI-211	N	--	--	Gray sand to 8' no clay, slight sheen, slight odor, no PSM
SWI-212	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-213	N	--	--	Gray sand to 7.5' clay below, slight sheen, no odor, no PSM
SWI-214	N	--	--	Black stained soil from 2-4' moderate petro odor, no sheen, not PSM clay not found, this black layer is questionable PSM
SWI-215	N	--	--	Gray sand to 6'. Slight 2 inch PSM layer at 6 feet. Not consistent layer. Sheen and odor present but not significant.
SWI-216	N	--	--	Black stained soil layer from 3-3.5', moderate petro odor, not PSM, no sheen, PID=233 in black stained layer
SWI-217	N	--	--	Gray sand down to 6' clay below, no sheen, no odor, no PSM
SWI-218	N	--	--	Gray sand to 7' clay below, no sheen, slight petro odor, no PSM
SWI-219	N	--	--	Gray and brown sand down to 4.5' at refusal, no sheen, no odor, no PSM
SWI-220	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
4/4/2007				
SWI-221	N	--	--	Gray sand to 7.5' clay below, no sheen, no odor, no PSM
SWI-222	Y	22"	19"	Amber brown PSM layer intermixed with gray sand, strong petroleum odor and free phase globules noted
SWI-223	N	--	--	Gray sand to 1' clay below, no sheen, no odor, no PSM
SWI-224	N	--	--	Brown sand to 18". Gray clay with slight PSM from 18"-24" amber brown color within clay on fine sand, not consistent, no sheen, moderate petroleum odor
SWI-225	N	--	--	Gray sand to 6', no sheen, no odor, no PSM, clay from 6' below
SWI-226	N	--	--	Gray sand to 7.5' clay below, no sheen, no odor, no PSM
SWI-227	N	--	--	Gray sand to 8', no sheen, no odor, no PSM, small clay layer 6-6.5'
SWI-228	Y	6"	12"	Black asphalt-like PSM layer, moderate petroleum odor and free phase globules noted, gives off free phase oil when placed in jar with water, no clay
SWI-229	N	--	--	Gray sand down to 8' no sheen, no odor, no PSM
SWI-230	N	--	--	Gray sand to 7' clay below, no sheen, no odor, no PSM
SWI-231	Y	12"	12"	Amber brown PSM layer, strong petroleum odor and free phase globules noted
SWI-232	N	--	--	Gray sand down to 7.5' clay below, no sheen, no odor, no PSM
SWI-233	N	--	--	Gray sand to 8', no sheen, no odor, no PSM
SWI-234	N	--	--	Gray sand to 8', no sheen, no odor, no PSM
SWI-235	N	--	--	Gray sand to 8' no clay, black stained material at 3-3.5' not PSM, no sheen, slight petro odor
SWI-236	Y	20"	24"	Amber brown sticky PSM layer, strong petroleum odor and free phase globules noted, gray sand below
SWI-237	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-238	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-239	N	--	--	Gray sand down to 8' no clay, no sheen, no odor, no PSM
SWI-240	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-241	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-242	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-243	N	--	--	Slight PSM from 8-10" gray to amber brown, slight sheen and odor not significant
SWI-244	N	--	--	Gray sand to 8' no clay, slight 1" PSM layer at 20" not continuous, slight sheen, moderate petro odor
SWI-245	N	--	--	Gray sand to 7' clay below, no sheen, no PSM, slight petroleum odor PID=33
SWI-246	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-247	N	--	--	Gray sand to 5' clay below, no sheen, no odor, no PSM
SWI-248	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-249	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-250	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-251	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-252	N	--	--	Gray sand to 8' no clay, some black and amber brown staining intermittently, no sheen, no odor, no PSM

Table 2 - Summary of 2007 Site Wide Investigation - PSM Boring Observations

Boring ID	PSM Present (Y/N)	Depth to PSM (inches bgs)	PSM thickness (inches)	Comments
SWI-253	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-254	N	--	--	Gray sand to 7' clay below, no sheen, no odor, no PSM
SWI-255	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-256	N	--	--	Gray sand to 8' trace 1/2" layer of inconsistent PSM at 4', no clay
SWI-257	N	--	--	Gray sand to 8' 1/2" layer of inconsistent PSM at 4', no clay
SWI-258	N	--	--	Gray sand to 8', 5" of clay above sand, no PSM
4/5/2007				
SWI-259	N	--	--	Gray sand to 5' clay below, no sheen, no odor, no PSM
SWI-260	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-261	Y	20"	4"	Dark gray to black PSM layer, strong petroleum odor and sheen, not as significant as SWI-141
SWI-262	N	--	--	Dark gray sand moderate petroleum odor, no sheen, no PSM
SWI-263	N	--	--	Dark gray sand no clay, no sheen, no odor, no PSM
SWI-264	N	--	--	Dark gray sand 3" layer at 20" of darker sand not PSM, no clay, no sheen, no odor, no PSM
SWI-265	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-266	N	--	--	Gray sand to 7' clay below, no sheen, no odor, no PSM
SWI-267	Y	18"	15"	Black to amber brown PSM layer, strong petroleum odor and free phase globules noted, no clay
SWI-268	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-269	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-270	N	--	--	Gray sand to 5' refusal at 5' no clay, no sheen, no odor, no PSM
SWI-271	Y	20"	15"	Amber brown to silver gray PSM layer, strong petroleum odor (sweet) and sheen present
SWI-272	N	--	--	Gray sand to 4' refusal at 4' no clay, no sheen, no odor, no PSM
SWI-273	Y	24"	40"	Amber brown to black PSM layer moderate petroleum odor and sheen, no clay
SWI-274	N	--	--	Gray sand down to 8' no clay, no sheen, no odor, no PSM
SWI-275	N	--	--	Gray sand to 8' no clay, slight odor, no sheen, no PSM
SWI-276	Y	20"	8"	Black PSM layer, strong petroleum odor and heavy sheen
SWI-277	Y	12"	12"	Amber brown to silver gray, discontinuous PSM layer, strong sweet odor and moderate sheen
SWI-278	Y	20"	12"	Very dark gray to black PSM layer, strong petroleum odor and sheen present, clay at 7.5'
SWI-279	N	--	--	Brown gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-280	Y	21"	18"	Amber brown to black to silver gray, discontinuous PSM layer, moderate petroleum odor
SWI-281	N	--	--	Gray sand to 7' clay below, no sheen, no odor, no PSM
SWI-282	Y	18"	16"	Black to amber brown PSM layer, strong petroleum odor and sheen
SWI-283	Y	20"	8"	Dark amber brown sticky PSM layer, strong petroleum odor, gray sand below clay at 7'
SWI-284	N	--	--	Gray sand to 7.5' clay below, no sheen, no odor, no PSM
SWI-285	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-286	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-287	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-288	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-289	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-290	N	--	--	Gray sand to 8' no clay, no sheen, no odor, no PSM
SWI-291	N	--	--	Gray sand to 7' clay below, no sheen, no odor, no PSM
SWI-292	Y	12"	19"	Dark amber brown sticky PSM layer, free product saturating entire interval, strong petroleum odor no clay,
SWI-293	Y	68"	3"	Amber brown sticky PSM layer, strong petroleum odor, under clay
SWI-294	Y	30"	34"	Amber brown to black discontinuous PSM layer intermixed with clay
SWI-295	Y	32"	27"	Dark amber brown discontinuous PSM layer, strong petroleum odor and sheen
SWI-296	N	--	--	Gray sand to 1' clay below, no sheen, no odor, no PSM
SWI-297	Y	31"	14"	Amber brown discontinuous PSM layer, moderate petroleum odor
SWI-298	Y	16"	48"	Amber brown to silver gray PSM, free product saturating entire interval, strong petroleum odor, located 10' from river
SWI-299	N	--	--	Brown sand at 18-21" there is slight refusal at 5', PSM not continuous, moderate petroleum odor, no sheen
SWI-300	N	--	--	Gray sand, septic odor, and staining black from 19-21" not PSM, no sheen, refusal at 4"
SWI-301	N	--	--	Brown gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-302	Y	20"	20"	Amber brown to dark blackish gray PSM layer, very strong petroleum odor and sheen present, PSM located right above clay layer at 40"
SWI-303	N	--	--	Brown sand down to 6' at clay, no sheen, no odor, no PSM
SWI-304	N	--	--	Gray brown sand to 6' clay below, no sheen, no odor, no PSM
4/6/2007				
SWI-305	Y	28"	8"	Dark blackish gray PSM layer, strong petroleum odor and heavy sheen resembles free phase product, refusal at 4'
SWI-306	Y	35"	12"	Amber brown to black, sticky PSM layer, strong petroleum odor
SWI-307	Y	20"	35"	Dark amber brown, discontinuous PSM layer, strong petroleum odor and sheen
SWI-308	N	--	--	Dark gray sand some black staining at 7.5', no sheen, no odor, no PSM
SWI-309	N	--	--	Dark gray sand and clay, no staining, no sheen, no odor, no PSM
SWI-310	N	--	--	Gray sand, moderate petroleum odor 2-3', no sheen, no PSM, no clay
SWI-311	N	--	--	Gray sand to 6' clay below, no sheen, no odor, no PSM
SWI-312	N	--	--	Gray sand to 3' clay below, slight PSM at 5', no sheen, mild odor
SWI-313	N	--	--	Gray sand to 5' refusal at 5', no sheen, no odor, no PSM
SWI-314	N	--	--	Gray sand to 5' refusal at 5', no sheen, no odor, no PSM
SWI-315	N	--	--	Brown sand to 3.5' refusal at 3.5', no sheen, no odor, no PSM

Notes:

All borings were advanced from 0-8' bgs. Visual characteristics were noted in each boring. PSM = Petroleum Source Material
ppm = parts per million
Results shaded denote the presence of PSM PID - photoionization detector

Table 3
Monitoring Well Construction Details and Water Level Data

Well ID	Well Diameter (inches)	Ground Surface Elevation (ft above msl)	Top of Casing Elevation (ft above msl)	Well Depth (ft bgs)	Top of Screen Depth (ft bgs)	Bottom of Screen Depth (ft bgs)	Top of Screen Elevation (ft msl)	Bottom of Screen Elevation (ft msl)	May 2015 Depth to Water (ft below TOC)	May 2015 Water Table Elevation (ft msl)
MW-1	2	4.87	7.67	15.0	5.0	15.0	-0.13	-10.13	3.37	4.30
MW-2	2	5.25	7.90	15.0	5.0	15.0	0.25	-9.75	3.05	4.85
MW-3R	2	4.21	5.90	10.0	2.0	10.0	2.21	-5.79	2.05	3.85
PDMW-1T	2	5.21	7.71	8.0	3.0	8.0	2.21	-2.79	2.63	5.08
PDMW-2T	2	4.87	7.37	8.0	3.0	8.0	1.87	-3.13	2.07	5.30
PDMW-3T	2	7.05	9.55	8.0	3.0	8.0	4.05	-0.95	4.85	4.70
PDMW-4T	2	6.85	9.35	8.0	3.0	8.0	3.85	-1.15	4.58	4.77
PDMW-5T	2	5.59	8.09	8.0	3.0	8.0	2.59	-2.41	3.18	4.91
PDMW-6P	2	6.74	9.24	8.0	3.0	8.0	3.74	-1.26	4.55	4.69
PDMW-7P	2	4.74	7.24	8.0	3.0	8.0	1.74	-3.26	2.51	4.73
PDMW-8R	2	6.43	9.08	9.0	1.0	9.0	5.43	-2.57	3.98	5.10
PDMW-9T	2	6.91	9.38	8.0	3.0	8.0	3.91	-1.09	4.31	5.07
PDMW-10R	2	7.03	9.44	9.0	1.0	9.0	6.03	-1.97	4.40	5.04
PDMW-12P	2	6.92	9.42	8.0	3.0	8.0	3.92	-1.08	4.41	5.01
PDMW-13P	2	5.59	8.09	8.0	3.0	8.0	2.59	-2.41	3.13	4.96
PDMW-15T	2	5.94	8.44	8.0	3.0	8.0	2.94	-2.06	3.24	5.20
PDMW-17T	2	6.60	9.10	8.0	3.0	8.0	3.60	-1.40	4.2	4.90
PDMW-19P	2	6.77	9.27	8.0	3.0	8.0	3.77	-1.23	4.45	4.82
PDMW-20T	2	5.14	7.64	8.0	3.0	8.0	2.14	-2.86	2.42	5.22
PDMW-21T	2	4.59	7.09	8.0	3.0	8.0	1.59	-3.41	5	2.09
PDMW-22T	2	6.13	8.63	8.0	3.0	8.0	3.13	-1.87	3.56	5.07
PDMW-23R	2	7.36	10.07	8.0	1.0	8.0	6.36	-0.64	5.11	4.96
PDMW-24T	2	6.69	9.19	7.5	2.5	7.5	4.19	-0.81	4.21	4.98
PDMW-26T	2	4.77	7.27	8.0	3.0	8.0	1.77	-3.23	1.99	5.28
PDMW-27R	2	6.42	8.78	9.5	1.5	9.5	4.92	-3.08	4.00	4.78
PDMW-29D	2	5.58	8.56	49.5	44.5	49.5	-38.92	-43.92	6.95	1.61
PDMW-30P	2	6.63	9.13	8.0	3.0	8.0	3.63	-1.37	4.71	4.42
PDMW-31R2	2	5.47	8.23	8.0	1.0	8.0	4.47	-2.53	3.08	5.15
PDMW-32R	2	7.31	9.40	7.5	2.5	7.5	4.81	-0.19	4.38	5.02
PDMW-33R2	2	5.40	8.48	15.0	10.0	15.0	-4.60	-9.60	3.72	4.76
PDMW-35P	1	5.73	9.53	25.0	15.0	25.0	-9.27	-19.27	5.01	4.52
PDMW-36P	1	6.18	9.92	12.0	2.0	12.0	4.18	-5.82	5.26	4.66
PDMW-37P	1	6.93	9.75	8.0	3.0	8.0	3.93	-1.07	5.05	4.70
PDMW-38P	1	6.47	10.37	12.0	2.0	12.0	4.47	-5.53	5.42	4.95
PDMW-40R	2	6.26	8.06	22.0	15.0	22.0	-8.74	-15.74	4.92	3.14
PDMW-45R	1	6.03	8.59	10.0	2.0	10.0	4.03	-3.97	3.99	4.60
PDMW-46	2	6.34	9.82	10.0	5.0	10.0	1.34	-3.66	5.13	4.69
PDMW-47	2	5.80	8.52	10.0	5.0	10.0	0.80	-4.20	4.48	4.04
PDMW-48	2	3.70	6.45	7.0	2.0	7.0	1.70	-3.30	3.02	3.43
PDMW-49	2	2.85	5.25	7.0	2.0	7.0	0.85	-4.15	2.89	2.36
PDMW-50	2	5.00	7.80	7.0	2.0	7.0	3.00	-2.00	3.67	4.13
PDMW-51	2	4.26	7.46	7.0	2.0	7.0	2.26	-2.74	3.7	3.76
PDMW-52	2	4.97	7.73	7.0	2.0	7.0	2.97	-2.03	4.03	3.70
PDMW-53	2	NA	NA	8.0	3.0	8.0	NA	NA	4.43	NA
TMW-1	2	5.13	8.45	13.0	8.0	13.0	-2.87	-7.87	3.08	5.37
TMW-4R	2	6.47	9.24	9.0	1.0	9.0	5.47	-2.53	4.44	4.80
EW-1	4	6.68	8.45	12.0	2.0	12.0	4.68	-5.32	3.53	4.92
MW-201	4	7.01	10.27	9.5	2.0	9.5	5.01	-2.49	5.03	5.24
MW-202	4	6.35	9.15	8.0	2.0	8.0	4.35	-1.65	4.17	4.98
MW-203	4	6.83	10.00	10.0	2.0	10.0	4.83	-3.17	5.07	4.93
MW-204	2	6.64	9.13	10.0	2.0	10.0	4.64	-3.36	3.63	5.50

Notes:
bgs = below ground surface
msl = mean sea level
ft = feet

Table 4
Historic Water Level Data

WELL ID	Top of Casing Elevation (ft msl)	12/10/2013		6/3/2014		11/6/2014		5/18/2015		11/10/2015	
		Depth to water (ft below TOC)	Water Table Elevation (ft msl)	Depth to water (ft below TOC)	Water Table Elevation (ft msl)	Depth to water (ft below TOC)	Water Table Elevation (ft msl)	Depth to water (ft below TOC)	Water Table Elevation (ft msl)	Depth to water (ft below TOC)	Water Table Elevation (ft msl)
MW-1	7.67	3.71	3.96	3.44	4.23	3.6	4.17	3.37	4.30	3.28	4.39
MW-2	7.90	Not Found	NA	Not Found	NA	3.64	4.26	3.05	4.85	3.08	4.82
MW-3R	5.90	1.12	4.78	2.21	3.69	2.3	3.60	2.05	3.85	2.00	3.90
PDMW-1T	7.71	2.68	5.03	2.72	4.99	2.94	4.77	2.63	5.08	2.44	5.27
PDMW-2T	7.37	2.03	5.34	2.49	4.88	3.28	4.09	2.07	5.30	1.90	5.47
PDMW-3T	9.55	3.96	5.59	4.94	4.61	5.42	4.13	4.85	4.70	3.33	6.22
PDMW-4T	9.35	3.55	5.8	5.07	4.28	5.2	4.15	4.58	4.77	2.69	6.66
PDMW-5T	8.09	2.29	5.8	Damaged	NA	4.05	4.04	3.18	4.91	2.00	6.09
PDMW-6P	9.24	3.47	5.77	4.96	4.28	5.18	4.06	4.55	4.69	2.91	6.33
PDMW-7P	7.24	2.36	4.88	2.86	4.38	2.98	4.26	2.51	4.73	2.30	4.94
PDMW-8R	9.08	3.34	5.74	4.3	4.78	4.85	4.23	3.98	5.10	3.34	5.74
PDMW-9T	9.38	3.83	5.55	4.65	4.73	5.11	4.27	4.31	5.07	3.37	6.01
PDMW-10R	9.44	3.79	5.65	5.02	4.42	5.37	4.07	4.4	5.04	2.75	6.69
PDMW-12P	9.42	4.27	5.15	5.04	4.38	5.02	4.40	4.41	5.01	2.47	6.95
PDMW-13P	8.09	3.07	5.02	3.67	4.42	3.8	4.29	3.13	4.96	2.10	5.99
PDMW-14TR	8.00	Damaged	NA	Destroyed	NA	Destroyed	NA	Destroyed	NA	Destroyed	NA
PDMW-15T	8.44	2.67	5.77	4.03	4.41	4.32	4.12	3.24	5.20	1.92	6.52
PDMW-17T	9.10	3.18	5.92	4.67	4.43	4.97	4.13	4.2	4.90	2.56	6.54
PDMW-19P	9.27	4.38	4.89	5.3	3.97	5.32	3.95	4.45	4.82	2.63	6.64
PDMW-20T	7.64	2.11	5.53	2.68	4.96	3.31	4.33	2.42	5.22	1.87	5.77
PDMW-21T	7.09	4.22	2.87	5.41	1.68	5.71	1.38	5	2.09	3.66	3.43
PDMW-22T	8.63	3.29	5.34	4.11	4.52	4.31	4.32	3.56	5.07	2.41	6.22
PDMW-23R	10.07	4.72	5.35	5.62	4.45	5.86	4.21	5.11	4.96	3.16	6.91
PDMW-24T	9.19	4.25	4.94	4.72	4.47	4.81	4.38	4.21	4.98	2.81	6.38
PDMW-26T	7.27	2.07	5.2	2.26	5.01	2.85	4.42	1.99	5.28	1.81	5.46
PDMW-27R	8.78	2.94	5.84	4.46	4.32	4.82	3.96	4	4.78	2.45	6.33
PDMW-29D	8.56	6.3	2.26	5.88	2.68	7.5	1.06	6.95	1.61	5.12	3.44
PDMW-30P	9.13	6.15	2.98	6.08	3.05	5.96	3.17	4.71	4.42	4.19	4.94
PDMW-31R2	8.23	3.13	5.1	3.92	4.31	4.11	4.12	3.08	5.15	2.92	5.31
PDMW-32R	9.40	4.54	4.86	4.92	4.48	5.12	4.28	4.38	5.02	3.56	5.84
PDMW-33R2	8.48	4.54	3.94	3.98	4.50	4.03	4.45	3.72	4.76	3.31	5.17
PDMW-35P	9.53	5.08	4.45	5.23	4.30	5.02	4.51	5.01	4.52	4.77	4.76
PDMW-36P	9.92	4.99	4.93	5.63	4.29	5.51	4.41	5.26	4.66	5.05	4.87
PDMW-37P	9.75	4.45	5.3	5.82	3.93	5.77	3.98	5.05	4.70	4.21	5.54
PDMW-38P	10.37	4.78	5.59	6.12	4.25	6.07	4.30	5.42	4.95	4.85	5.52
PDMW-40R	8.06	5.21	2.85	5.27	2.79	5.52	2.54	4.92	3.14	4.16	3.90
PDMW-45R	8.59	2.94	5.65	4.92	3.67	4.92	3.67	3.99	4.60	2.68	5.91
PDMW-46	9.82	Not Installed	Not Measured	5.81	4.01	6.46	3.36	5.13	4.69	5.83	3.99
PDMW-47	8.52	Not Installed	Not Measured	4.18	4.34	5.47	3.05	4.48	4.04	3.57	4.95
PDMW-48	6.45	Not Installed	Not Measured	4.51	1.94	3.1	3.35	3.02	3.43	3.09	3.36
PDMW-49	5.25	Not Installed	Not Measured	3.12	2.13	2.55	2.70	2.89	2.39	2.83	2.42
PDMW-50	7.80	Not Installed	Not Measured	4.4	3.40	3.91	3.89	3.67	4.13	3.52	4.28
PDMW-51	7.46	Not Installed	Not Measured	4.16	3.30	4.41	3.05	3.7	3.76	3.75	3.71
PDMW-52	7.73	Not Installed	Not Measured	4.42	3.31	3.58	4.15	4.03	3.70	3.66	4.07
TMW-1	8.45	3.44	1.95	3.44	5.01	4.1	4.35	3.08	5.37	2.88	5.57
TMW-4R	9.24	4.81	3.36	4.81	4.43	5.4	3.84	4.44	4.80	2.81	6.43
EW-1	8.45	2.48	5.97	2.48	5.97	4.36	4.09	3.53	4.92	1.72	6.73
MW-201	10.27	4.98	5.29	4.98	5.29	5.7	4.57	5.03	5.24	3.40	6.87
MW-202	9.15	4.09	5.06	4.09	5.06	4.81	4.34	4.17	4.98	2.53	6.62
MW-203	10.00	4.87	5.13	4.87	5.13	5.7	4.30	5.07	4.93	3.09	6.91
MW-204	9.13	3.48	5.65	3.48	5.65	5.5	3.63	3.63	5.50	2.72	6.41

TOC - Top of Casing
MSL - Mean Sea Level

Table 5
Summary of Groundwater Analytical Results - November 2015/July 2016
HSI Site #10101, Hutchinson Island, GA

Location:						EW-1	MW-3R	PDMW-8R	PDMW-10R	PDMW-13P	PDMW-19P	PDMW-23R	PDMW-26T		PDMW-32R	PDMW-33R2	PDMW-45R	PDMW-46	PDMW-47	PDMW-47	PDMW-48	PDMW-53	TMW-1		TMW-4R
Sample Date:						11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/11/2015	11/12/2015	11/11/2015	11/12/2015	11/12/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	7/25/2016	7/25/2016	11/11/2015	11/11/2015	11/12/2015	11/12/2015	11/12/2015
Sample Type:						Normal	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Normal	Normal	Normal	Normal	Normal	Normal	Duplicate	Normal	Normal	Dup	Normal	Normal
Sample ID:						EW-1_11122015	MW-3R_11122015	PDMW-8R_11122015	PDMW-10R_11122015	PDMW-13P_11122015	PDMW-19P_11122015	PDMW-23R_11122015	DUP-01_11122015	PDMW-26T_11122015	PDMW-32R_11122015	PDMW-33R2_11112015	PDMW-45R_11122015	PDMW-46_11122015	PDMW-47	PDMW-47	PDMW-48_11122015	PDMW-53_11122015	DUP-02_11122015	TMW-1_11122015	TMW-4R_11122015
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PAHs	ACENAPHTHENE	1	2000	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	ACENAPHTHYLENE	1.4	1	510	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	ANTHRACENE	0.2	0.2	5100	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	BENZO(A)ANTHRACENE	0.2	0.1	3.9	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	BENZO(A)PYRENE	0.2	0.2	0.39	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	BENZO(B)FLUORANTHENE	0.2	0.2	0.65	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	BENZO(G,H,I)PERYLENE	--	--	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	BENZO(K)FLUORANTHENE	--	--	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	CHRYSENE	0.2	0.2	65	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	DIBENZO(A,H)ANTHRACENE	--	0.3	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	FLUORANTHENE	0.5	1000	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	FLUORENE	0.5	1000	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	INDENO(1,2,3-CD)PYRENE	--	0.4	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	1-METHYLNAPHTHALENE	--	--	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	9.5 U	NA
	2-METHYLNAPHTHALENE	--	--	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13	9.5 U	NA
	NAPHTHALENE	1	20	20	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	63	32	NA
	PHENANTHRENE	0.22	0.2	510	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	PYRENE	0.5	1000	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.5 U	NA
	TOTAL PAHs	--	--	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87	58	NA
VOCs	BENZENE	1	5	31.2	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	51	52	NA
	ETHYLBENZENE	1	700	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1 U	1 U	NA
	TOLUENE	1	1000	1900	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1 U	1 U	NA
	XYLENES (TOTAL)	2	10000	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	220	220	NA
	TOTAL BTEX	--	--	--	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	271	272	NA
Metals, Total	ARSENIC	0.018	0.018	0.018	mg/l	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA	0.12	0.15	0.02 U
	CHROMIUM	0.013	0.1	--	mg/l	0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.023	0.029	NA
	LEAD	0.007	0.015	0.015	mg/l	0.01 U	0.01	0.01 U	0.01 U	0.011	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA	0.01 U	0.01 U	0.01 U
	NICKEL	0.13	0.1	2	mg/l	0.06	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	NA	0.04 U	NA	0.04 U	NA	NA	NA	NA	NA	0.04 U	0.04 U	NA
	ZINC	0.96	2	31	mg/l	0.17	0.035	NA	NA	0.02 U	NA	NA	NA	NA	120	NA	NA	NA	NA	NA	NA	NA	63	78	NA
Miscellaneous	AMMONIA AS N	15	30	30	mg/l	270	1.7	60	7.9	2.7	4.9	2.8	600	600	1.3	15	0.8	1.1	19	19	28	3.6	3400	3600 F1	3.1
	NITRATE (AS N)	--	10	--	mg/l	0.05 U	0.056	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.17	0.05 U	0.05 U	0.05 U	NA	NA	0.11	0.05 U	230	250 F1	0.05 U
	NITRITE (AS N)	--	--	--	mg/l	0.05 U	0.11	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.073	NA	NA	0.11	0.05 U	10 U	10 U	0.05 U

Notes:

Shaded cell indicates comparison standard used in data evaluation.

Highlighted cell indicates analytical result exceeds comparison criteria.

Bold and italic text indicates analytical result exceeds background value.

- Nitrate comparison standard based on the Maximum Contaminant Level (MCL) established by the USEPA National Primary Drinking Water Regulations.

ND - No constituents detected above the laboratory minimum detection limit.

F1: Indicates MS or MSD recover was outside of specified limits.

U: Incidactes constituent was not detected above value shown.

Table 6
Summary of Last Four Rounds of Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location:					EW-1					MW-1				MW-2		MW-3R					MW-201			MW-202	MW-204	PDMW-7P			PDMW-8R					
Sample Date:					6/4/2014	11/4/2014	5/20/2015	5/20/2015	11/12/2015	6/3/2014		11/3/2014	5/20/2015	11/4/2014	5/19/2015	6/5/2014	11/5/2014		5/19/2015	11/12/2015	6/4/2014	5/20/2015	5/20/2015	11/4/2014	11/5/2014	6/4/2014	11/4/2014	5/19/2015	6/3/2014		11/5/2014	5/20/2015	11/12/2015	
Sample Type:					Normal	Normal	Dup	Normal	Normal	Normal	Dup	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Normal	Normal	Normal	Dup	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Normal	Normal	Normal
Sample ID:					EW-01_06042014	EW-1_11042014	DUP-02_05202015	EW-01_05202015	EW-1_11122015	MW-01_06032014	DUP-01_06032014	MW-1_11032014	MW-1_05202015	MW-2_11042014	MW-2_05192015	MW-3R_06052014	MW-3R_11052014	DUP-2_11052014	MW-3R_05192015	MW-3R_11122015	MW-201_06042014	DUP-03_05202015	MW-201_05202015	MW-202_11042014	MW-204_11052014	PDMW-07P_06042014	PDMW-7P_11042014	PDMW-7P_05192015	PDMW-8R_06032014	DUP-02_06032014	PDMW-8R_11052014	PDMW-8R_05202015	PDMW-8R_11122015	
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
PAHs	ACENAPHTHENE	1	2000	--	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	ACENAPHTHYLENE	1.4	1	510	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U*	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	ANTHRACENE	0.2	0.2	5100	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	BENZO(A)ANTHRACENE	0.2	0.1	3.9	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	BENZO(A)PYRENE	0.2	0.2	0.39	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	BENZO(B)FLUORANTHENE	0.2	0.2	0.65	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	BENZO(G,H,I)PERYLENE	--	--	--	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	BENZO(K)FLUORANTHENE	--	--	--	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	CHRYSENE	0.2	0.2	65	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	DIBENZO(A,H)ANTHRACENE	--	0.3	--	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	FLUORANTHENE	0.5	1000	--	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	FLUORENE	0.5	1000	--	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	INDENO(1,2,3-CD)PYRENE	--	0.4	--	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	1-METHYLNAPHTHALENE	--	--	--	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	2-METHYLNAPHTHALENE	--	--	--	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	NAPHTHALENE	1	20	20	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	PHENANTHRENE	0.22	0.2	510	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	PYRENE	0.5	1000	--	ug/L	10 U	NA	NA	NA	NA	9.5 U	9.6 U	NA	NA	NA	NA	10 U	NA	NA	NA	NA	10 U	NA	NA	10 U	9.9 U	NA	NA	9.9 U	9.9 U	NA	NA	NA	
	TOTAL PAHs	--	--	--	ug/L	ND	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	ND	ND	NA	NA	NA	
VOCs	BENZENE	1	5	31.2	ug/L	1 U	NA	NA	NA	NA	1 U	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	1 U	NA	NA	NA	NA	1 U	NA	NA	1 U	1 U	NA	NA	NA	
	ETHYLBENZENE	1	700	--	ug/L	1 U	NA	NA	NA	NA	1 U	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	1 U	NA	NA	NA	NA	1 U	NA	NA	1 U	1 U	NA	NA	NA	
	METHYLENE CHLORIDE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	TOLUENE	1	1000	1900	ug/L	1 U	NA	NA	NA	NA	1 U	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	1 U	NA	NA	NA	NA	1 U	NA	NA	1 U	1 U	NA	NA	NA	
	XYLENES (TOTAL)	2	10000	--	ug/L	2 U	NA	NA	NA	NA	2 U	2 U	NA	NA	NA	2 U	NA	NA	NA	NA	2 U	NA	NA	NA	NA	2 U	NA	NA	2 U	2 U	NA	NA	NA	
	METHYL TERT BUTYL ETHER	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	TOTAL BTEX	--	--	--	ug/L	ND	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
Metals, Total	ARSENIC	0.018	0.018	0.018	mg/L	0.02 U	0.02	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	0.02 U	0.02 U	0.02 U	0.029	0.028	0.02 U	0.02 U	0.02 U	
	CHROMIUM	0.013	0.1	--	mg/L	0.012	0.013	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	0.01 U	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	0.01 U	NA	NA	0.01 U	0.01 U	NA	NA	NA	
	LEAD	0.007	0.015	0.015	mg/L	0.01	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U		
	NICKEL	0.13	0.1	2	mg/L	0.1	0.1	0.044	0.044	0.06	0.04 U	0.04 U	NA	NA	NA	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	0.04 U	NA	NA	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U		
	ZINC	0.96	2	31	mg/L	0.55	0.47	0.19	0.19	0.17	0.02 U	0.02 U	NA	NA	NA	0.02 U	0.02 U	0.02 U	0.089	0.035	0.02 U	0.02 U	0.02 U	0.02 U	NA	0.02 U	NA	NA	0.02 U	0.02 U	NA	NA	NA	
Metals, Dissolved	LEAD	0.007	0.015	0.015	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Miscellaneous	AMMONIA AS N	15	30	30	mg/L	1100	540	260	320 F1	270	25	18	25	21	23	13	3.9	6.5	2.2	1.9	1.7	15	1.1	1.1	1	340	12	16	16	62	63	94	64	60
	NITRATE (AS N)	--	10	--	mg/L	0.05 U	0.29	0.097	0.063	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.056	0.07	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
	NITRITE (AS N)	--	--	--	mg/l	NA	NA	0.05 U	0.05 U	0.05 U	NA	NA	NA	0.05 U	NA	0.17	NA	NA	NA	0.078	0.11	NA	0.05 U	0.05 U	NA	NA	NA	NA	0.11	NA	NA	NA	0.05	0.05 U
SVOCs	1,4-DICHLOROBENZENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		

Notes:

Shaded cell indicates comparison standard used in data evaluation.

Highlighted cell indicates analytical result exceeds comparison criteria.

Bold and italic text indicates analytical result exceeds background value.

- Nitrate comparison standard based on the Maximum Contaminant Level (MCL) established by the USEPA National Primary Drinking Water Regulations.

ND - No constituents detected above the laboratory minimum detection limit.

F1: Indicates MS or MSD recovery is outside of specified limits

U: Indicates constituent was not detected above value shown.

J: Indicates constituent was detected at an estimated value.

UH: Indicates sample analyzed outside of specified hold time.

UI: Indicates constituent was not detected at an estimated value shown.

Monitoring wells MW-3R, PDMW-8R, PDMW-10R, PDMW-11R, PDMW-14TR, PDMW-23R, PDMW-31R2, PDMW-32R, PDMW-33R, PDMW-39R, PDMW-40R, PDMW-45R, and TMW-4R were installed to replace wells MW-3, PDMW-8T, PDMW-10T, PDMW-11P, PDMW-14T, PDMW-23T, PDMW-30P, PDMW-31R, PDMW-32P, PDMW-33T, PDMW-39, PDMW-40, PDMW-45, and TMW-4 respectively.

Table 6
Summary of Last Four Rounds of Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location:					PDMW-10R				PDMW-13P				PDMW-19P				PDMW-23R			PDMW-23T	PDMW-24T	PDMW-26T						PDMW-29D			PDMW-30P		PDMW-30R	
Sample Date:					6/5/2014	11/5/2014	5/20/2015	11/12/2015	6/5/2014	11/5/2014	5/19/2015	11/11/2015	6/4/2014	11/3/2014	5/20/2015	11/12/2015	11/5/2014	5/19/2015	11/11/2015	6/4/2014	11/5/2014	6/5/2014	11/6/2014		5/21/2015	11/12/2015	11/12/2015	6/3/2014	11/6/2014	5/21/2015	11/3/2014	5/20/2015	6/3/2014	
Sample Type:					Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Normal	Dup	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
Sample ID:					PDMW-10R_06052014	PDMW-10R_11052014	PDMW-10R_05202015	PDMW-10R_11122015	PDMW-13P_06052014	PDMW-13P_11052014	PDMW-13P_05192015	PDMW-13P_11112015	PDMW-19P_06042014	PDMW-19P_11032014	PDMW-19P_05202015	PDMW-19P_11122015	PDMW-23R_11052014	PDMW-23R_05192015	PDMW-23R_11112015	PDMW-23R_06042014	PDMW-24T_11052014	PDMW-26T_06052014	PDMW-26T_11062014	DUP-03_11062014	PDMW-26T_05212015	DUP-01_11122015	PDMW-26T_11122015	PDMW-29D_06032014	PDMW-29D_11062014	PDMW-29D_05212015	PDMW-30P_11032014	PDMW-30P_05202015	PDMW-30R_06032014	
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result		
PAHs	ACENAPHTHENE	1	2000	--	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	ACENAPHTHYLENE	1.4	1	510	ug/L	9.8 U*	NA	NA	NA	9.7 U*	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U*	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	ANTHRACENE	0.2	0.2	5100	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	BENZO(A)ANTHRACENE	0.2	0.1	3.9	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	BENZO(A)PYRENE	0.2	0.2	0.39	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	BENZO(B)FLUORANTHENE	0.2	0.2	0.65	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	BENZO(G,H,I)PERYLENE	--	--	--	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	BENZO(K)FLUORANTHENE	--	--	--	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	CHRYSENE	0.2	0.2	65	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	DIBENZO(A,H)ANTHRACENE	--	0.3	--	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	FLUORANTHENE	0.5	1000	--	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	FLUORENE	0.5	1000	--	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	INDENO(1,2,3-CD)PYRENE	--	0.4	--	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	1-METHYLNAPHTHALENE	--	--	--	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	2-METHYLNAPHTHALENE	--	--	--	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	NAPHTHALENE	1	20	20	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	PHENANTHRENE	0.22	0.2	510	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	PYRENE	0.5	1000	--	ug/L	9.8 U	NA	NA	NA	9.7 U	NA	NA	NA	9.8 U	NA	NA	NA	NA	NA	10 U	NA	9.8 U	NA	NA	NA	NA	9.7 U	NA	NA	NA	NA	9.8 U		
	TOTAL PAHs	--	--	--	ug/L	ND	NA	NA	NA	ND	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND		
VOCs	BENZENE	1	5	31.2	ug/L	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	1 U	NA	1 U	NA	NA	NA	NA	1 U	NA	NA	NA	NA	1 U		
	ETHYLBENZENE	1	700	--	ug/L	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	1 U	NA	1 U	NA	NA	NA	NA	1 U	NA	NA	NA	NA	1 U		
	METHYLENE CHLORIDE	--	--	--	ug/L	5 U	NA	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	TOLUENE	1	1000	1900	ug/L	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	1 U	NA	1 U	NA	NA	NA	NA	1 U	NA	NA	NA	NA	1 U		
	XYLENES (TOTAL)	2	10000	--	ug/L	2 U	NA	NA	NA	2 U	NA	NA	NA	2 U	NA	NA	NA	NA	NA	2 U	NA	2 U	NA	NA	NA	NA	2 U	NA	NA	NA	NA	2 U		
	METHYL TERT BUTYL ETHER	--	--	--	ug/L	10 U	NA	NA	NA	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	TOTAL BTX	--	--	--	ug/L	ND	NA	NA	NA	ND	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND		
Metals, Total	ARSENIC	0.018	0.018	0.018	mg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	0.025	0.02 U	0.02 U	0.025	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U		
	CHROMIUM	0.013	0.1	--	mg/L	0.01 U	NA	NA	NA	0.01 U	NA	NA	NA	0.01 U	NA	NA	NA	NA	NA	0.01 U	NA	0.01 U	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	0.01 U		
	LEAD	0.007	0.015	0.015	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.021	0.033	0.01 U	0.011	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U			
	NICKEL	0.13	0.1	2	mg/L	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	NA	NA	0.04 U	NA	0.04 U	NA	NA	NA	NA	0.04 U	NA	NA	NA	NA	0.04 U		
	ZINC	0.96	2	31	mg/L	0.02 U	NA	NA	NA	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA	NA	0.02 U	NA	0.02 U	NA	NA	NA	NA	0.02 U	NA	NA	NA	NA	0.02 U		
Metals, Dissolved	LEAD	0.007	0.015	0.015	mg/L	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Miscellaneous	AMMONIA AS N	15	30	30	mg/L	13	12	7.3	7.9	1.9	2	2.7	2.7	5.6	4.5	4.7	4.9	2.3	1.5	2.8	3.6	NA	600	470	490	590	600	600	11	10	11	2.2	2	1.6
	NITRATE (AS N)	--	10	--	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.21	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.11	NA	1.1	0.051	0.07	0.26	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		
	NITRITE (AS N)	--	--	--	mg/l	NA	NA	0.05 U	0.05 U	NA	NA	0.05 U	0.05 U	NA	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	NA	NA	0.05 U	0.05 U	0.05 U	NA	NA	0.05 U	NA	0.05 U	NA		
SVOCs	1,4-DICHLOROBENZENE	--	--	--	ug/L	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		

Notes:

Shaded cell indicates comparison standard used in data evaluation.

Highlighted cell indicates analytical result exceeds comparison criteria.

Bold and italic text indicates analytical result exceeds background value.

- Nitrate comparison standard based on the Maximum Contaminant Level (MCL) established by the USEPA National Primary Drinking

ND - No constituents detected above the laboratory minimum detection limit.

F1: Indicates MS or MSD recovery is outside of specified limits

U: Indicates constituent was not detected above value shown.

J: Indicates constituent was detected at an estimated value.

UH: Indicates sample analyzed outside of specified hold time.

UI: Indicates constituent was not detected at an estimated value shown.

Monitoring wells MW-3R, PDMW-8R, PDMW-10R, PDMW-11R, PDMW-14TR, PDMW-23R, PDMW-31R2, PDMW-32R, PDMW-33R, PDMW-34R, PDMW-35R, PDMW-36R, PDMW-37R, PDMW-38R, PDMW-39R, PDMW-40R, PDMW-41R, PDMW-42R, PDMW-43R, PDMW-44R, PDMW-45R, PDMW-46R, PDMW-47R, PDMW-48R, PDMW-49R, PDMW-50R, PDMW-51R, PDMW-52R, PDMW-53R, PDMW-54R, PDMW-55R, PDMW-56R, PDMW-57R, PDMW-58R, PDMW-59R, PDMW-60R, PDMW-61R, PDMW-62R, PDMW-63R, PDMW-64R, PDMW-65R, PDMW-66R, PDMW-67R, PDMW-68R, PDMW-69R, PDMW-70R, PDMW-71R, PDMW-72R, PDMW-73R, PDMW-74R, PDMW-75R, PDMW-76R, PDMW-77R, PDMW-78R, PDMW-79R, PDMW-80R, PDMW-81R, PDMW-82R, PDMW-83R, PDMW-84R, PDMW-85R, PDMW-86R, PDMW-87R, PDMW-88R, PDMW-89R, PDMW-90R, PDMW-91R, PDMW-92R, PDMW-93R, PDMW-94R, PDMW-95R, PDMW-96R, PDMW-97R, PDMW-98R, PDMW-99R, PDMW-100R, PDMW-101R, PDMW-102R, PDMW-103R, PDMW-104R, PDMW-105R, PDMW-106R, PDMW-107R, PDMW-108R, PDMW-109R, PDMW-110R, PDMW-111R, PDMW-112R, PDMW-113R, PDMW-114R, PDMW-115R, PDMW-116R, PDMW-117R, PDMW-118R, PDMW-119R, PDMW-120R, PDMW-121R, PDMW-122R, PDMW-123R, PDMW-124R, PDMW-125R, PDMW-126R, PDMW-127R, PDMW-128R, PDMW-129R, PDMW-130R, PDMW-131R, PDMW-132R, PDMW-133R, PDMW-134R, PDMW-135R, PDMW-136R, PDMW-137R, PDMW-138R, PDMW-139R, PDMW-140R, PDMW-141R, PDMW-142R, PDMW-143R, PDMW-144R, PDMW-145R, PDMW-146R, PDMW-147R, PDMW-148R, PDMW-149R, PDMW-150R, PDMW-151R, PDMW-152R, PDMW-153R, PDMW-154R, PDMW-155R, PDMW-156R, PDMW-157R, PDMW-158R, PDMW-159R, PDMW-160R, PDMW-

Table 6
Summary of Last Four Rounds of Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location:					PDMW-32R				PDMW-33R2				PDMW-40R	PDMW-45R				PDMW-46				PDMW-47								PDMW-48				
Sample Date:					6/4/2014	11/6/2014	5/19/2015	11/11/2015	6/4/2014	11/4/2014	5/20/2015	11/11/2015	11/5/2014	6/3/2014	11/3/2014	5/20/2015	11/11/2015	6/4/2014	11/3/2014	5/20/2015	11/11/2015	6/4/2014	11/4/2014	5/20/2015	11/11/2015	5/25/2016	5/25/2016	7/25/2016	7/25/2016	6/4/2014	11/4/2014	5/19/2015	11/11/2015	
Sample Type:					Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Duplicate	Normal	Duplicate	Normal	Normal	Normal	Normal		
Sample ID:					PDMW-32R_06042014	PDMW-32R_11062014	PDMW-32R_05192015	PDMW-32R_11112015	PDMW-33R2_06042014	PDMW-33R2_11042014	PDMW-33R2_05202015	PDMW-33R2_11112015	PDMW-40R_11052014	PDMW-45R_06032014	PDMW-45R_11032014	PDMW-45R_05202015	PDMW-45R_11112015	PDMW-46_06042014	PDMW-46_11032014	PDMW-46_05202015	PDMW-46_11112015	PDMW-47_06042014	PDMW-47_11042014	PDMW-47_05202015	PDMW-47_11112015	PDMW-47	PDMW-47	PDMW-47	PDMW-47	PDMW-48_06042014	PDMW-48_11042014	PDMW-48_05192015	PDMW-48_11112015	
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result		
PAHs	ACENAPHTHENE	1	2000	--	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	ACENAPHTHYLENE	1.4	1	510	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	ANTHRACENE	0.2	0.2	5100	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	BENZO(A)ANTHRACENE	0.2	0.1	3.9	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	BENZO(A)PYRENE	0.2	0.2	0.39	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	BENZO(B)FLUORANTHENE	0.2	0.2	0.65	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	BENZO(G,H,I)PERYLENE	--	--	--	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	BENZO(K)FLUORANTHENE	--	--	--	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	CHRYSENE	0.2	0.2	65	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	DIBENZO(A,H)ANTHRACENE	--	0.3	--	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	FLUORANTHENE	0.5	1000	--	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	FLUORENE	0.5	1000	--	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	INDENO(1,2,3-CD)PYRENE	--	0.4	--	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	1-METHYLNAPHTHALENE	--	--	--	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	2-METHYLNAPHTHALENE	--	--	--	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	NAPHTHALENE	1	20	20	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	PHENANTHRENE	0.22	0.2	510	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	PYRENE	0.5	1000	--	ug/L	9.9 U	NA	NA	NA	9.7 U	NA	NA	NA	10 U	9.4 UH	NA	NA	NA	9.6 U	NA	NA	NA	9.6 U	NA	NA	NA	NA	NA	NA	NA	9.8 U	NA	NA	
	TOTAL PAHs	--	--	--	ug/L	ND	NA	NA	NA	ND	NA	NA	NA	ND	ND	NA	NA	NA	ND	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	
VOCs	BENZENE	1	5	31.2	ug/L	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	1 U	NA	NA	
	ETHYLBENZENE	1	700	--	ug/L	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	1 U	NA	NA	
	METHYLENE CHLORIDE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	TOLUENE	1	1000	1900	ug/L	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	1 U	NA	NA	
	XYLENES (TOTAL)	2	10000	--	ug/L	2 U	NA	NA	NA	2 U	NA	NA	NA	NA	2 U	NA	NA	NA	2 U	NA	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	2 U	NA	NA	
	METHYL TERT BUTYL ETHER	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	TOTAL BTEX	--	--	--	ug/L	ND	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	ND	NA	NA		
Metals, Total	ARSENIC	0.018	0.018	0.018	mg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA	NA	0.02 U	NA	NA		
	CHROMIUM	0.013	0.1	--	mg/L	0.01 U	NA	NA	NA	0.01 U	NA	NA	NA	NA	0.01 U	NA	NA	NA	0.01 U	NA	NA	NA	0.01 U	NA	NA	NA	NA	NA	NA	NA	0.01 U	NA	NA	
	LEAD	0.007	0.015	0.015	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01	NA	NA	NA	NA	0.01 U	NA	NA		
	NICKEL	0.13	0.1	2	mg/L	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	NA	NA	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	NA	0.04 U	NA	NA	NA	NA	NA	NA	NA	0.04 U	NA	NA	
	ZINC	0.96	2	31	mg/L	0.031	0.21	0.11	0.12	0.02 U	NA	NA	NA	NA	0.02 U	NA	NA	NA	0.4	NA	NA	NA	0.02 U	NA	NA	NA	NA	NA	NA	NA	0.02 U	NA	NA	
Metals, Dissolved	LEAD	0.007	0.015	0.015	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Miscellaneous	AMMONIA AS N	15	30	30	mg/L	11	7	0.7	1.3	16	20	14	15	44	8.6	4.7	3.6	0.8	2.9	2.2	0.6	1.1	72	110	39	39	29	30	19	19	27	22	8.5	28
	NITRATE (AS N)	--	10	--	mg/L	0.05 U	0.05 U	0.05 U	0.17	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA	NA	NA	0.05 U	0.05 U	0.05 U	0.11		
	NITRITE (AS N)	--	--	--	mg/l	NA	NA	0.05 U	0.05 U	NA	NA	0.05 U	0.05 U	NA	NA	NA	0.05 U	0.05 U	NA	NA	0.05 U	0.073	NA	NA	0.052	0.05 U	NA	NA	NA	NA	NA	0.19	0.11	
SVOCs	1,4-DICHLOROBENZENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		

Notes:

Shaded cell indicates comparison standard used in data evaluation.

Highlighted cell indicates analytical result exceeds comparison criteria.

Bold and italic text indicates analytical result exceeds background value.

- Nitrate comparison standard based on the Maximum Contaminant Level (MCL) established by the USEPA National Primary Drinking

ND - No constituents detected above the laboratory minimum detection limit.

F1: Indicates MS or MSD recovery is outside of specified limits

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J: Indicates constituent was detected at an estimated value.

UH: Indicates sample analyzed outside of specified hold time.

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Monitoring wells MW-3R, PDMW-8R, PDMW-10R, PDMW-11R, PDMW-14TR, PDMW-23R, PDMW-31R2, PDMW-32R, PDMW-33R, PDMW-40R, PDMW-45R, PDMW-46R, PDMW-47R, PDMW-48R, PDMW-49R, PDMW-50R, PDMW-51R, PDMW-52R, PDMW-53R, PDMW-54R, PDMW-55R, PDMW-56R, PDMW-57R, PDMW-58R, PDMW-59R, PDMW-60R, PDMW-61R, PDMW-62R, PDMW-63R, PDMW-64R, PDMW-65R, PDMW-66R, PDMW-67R, PDMW-68R, PDMW-69R, PDMW-70R, PDMW-71R, PDMW-72R, PDMW-73R, PDMW-74R, PDMW-75R, PDMW-76R, PDMW-77R, PDMW-78R, PDMW-79R, PDMW-80R, PDMW-81R, PDMW-82R, PDMW-83R, PDMW-84R, PDMW-85R, PDMW-86R, PDMW-87R, PDMW-88R, PDMW-89R, PDMW-90R, PDMW-91R, PDMW-92R, PDMW-93R, PDMW-94R, PDMW-95R, PDMW-96R, PDMW-97R, PDMW-98R, PDMW-99R, PDMW-100R, PDMW-101R, PDMW-102R, PDMW-103R, PDMW-104R, PDMW-105R, PDMW-106R, PDMW-107R, PDMW-108R, PDMW-109R, PDMW-110R, PDMW-111R, PDMW-112R, PDMW-113R, PDMW-114R, PDMW-115R, PDMW-116R, PDMW-117R, PDMW-118R, PDMW-119R, PDMW-120R, PDMW-121R, PDMW-122R, PDMW-123R, PDMW-124R, PDMW-125R, PDMW-126R, PDMW-127R, PDMW-128R, PDMW-129R, PDMW-130R, PDMW-131R, PDMW-132R, PDMW-133R, PDMW-134R, PDMW-135R, PDMW-136R, PDMW-137R, PDMW-138R, PDMW-139R, PDMW-140R, PDMW-141R, PDMW-142R, PDMW-143R, PDMW-144R, PDMW-145R, PDMW-146R, PDMW-147R, PDMW-148R, PDMW-149R, PDMW-150R, PDMW-151R, PDMW-152R, PDMW-153R, PDMW-154R, PDMW-155R, PDMW-156R, PDMW-157R, PDMW-158R, PDMW-159R, PDMW-160R, PDMW-161R, PDMW-162R, PDMW-163R, PDMW-164R, PDMW-165R, PDMW-166R, PDMW-167R, PDMW-168R, PDMW-169R, PDMW-170R, PDMW-171R, PDMW-172R, PDMW-173R, PDMW-174R, PDMW-175R, PDMW-176R, PDMW-177R, PDMW-178R, PDMW-179R, PDMW-180R, PDMW-181R, PDMW-182R, PDMW-183R, PDMW-184R, PDMW-185R, PDMW-186R, PDMW-187R, PDMW-188R, PDMW-189R, PDMW-190R, PDMW-191R, PDMW-192R, PDMW

Table 6
Summary of Last Four Rounds of Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location:					PDMW-49			PDMW-50			PDMW-51			PDMW-52			PDMW-53			TMW-1						TMW-4R				FIELDQC				
Sample Date:					6/6/2014	11/4/2014	5/18/2015	6/4/2014	11/6/2014	5/19/2015	6/6/2014	11/6/2014	5/18/2015	6/5/2014		11/6/2014	5/18/2015	11/4/2014	5/19/2015	11/11/2015	6/5/2014	11/5/2014		5/21/2015	5/21/2015	11/12/2015	11/12/2015	6/3/2014	11/4/2014	5/19/2015	11/12/2015	6/3/2014	11/6/2014	
Sample Type:					Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Dup	Normal	Dup	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Sample ID:					PDMW-49_06062014	PDMW-49_11042014	PDMW-49_05182015	PDMW-50_06042014	PDMW-50_11062014	PDMW-50_05192015	PDMW-51_06062014	PDMW-51_11062014	PDMW-51_05182015	PDMW-52_06052014	DUP-03_06052014	PDMW-52_11062014	PDMW-52_05182015	PDMW-53_11042014	PDMW-53_05192015	PDMW-53_11112015	PDMW-01_06052014	TMW-1_11052014	DUP-1_11052014	DUP_01_05212015	TMW_1_05212015	DUP-02_11122015	TMW-1_11122015	TMW-4R_06032014	TMW-4R_11042014	TMW-4R_05192015	TMW-4R_11122015	FB-01_06032014	FB-01_11062014	
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
PAHs	ACENAPHTHENE	1	2000	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	ACENAPHTHYLENE	1.4	1	510	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U*	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	ANTHRACENE	0.2	0.2	5100	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	BENZO(A)ANTHRACENE	0.2	0.1	3.9	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	BENZO(A)PYRENE	0.2	0.2	0.39	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	BENZO(B)FLUORANTHENE	0.2	0.2	0.65	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	BENZO(G,H,I)PERYLENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	BENZO(K)FLUORANTHENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	CHRYSENE	0.2	0.2	65	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	DIBENZO(A,H)ANTHRACENE	--	0.3	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	FLUORANTHENE	0.5	1000	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	FLUORENE	0.5	1000	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	INDEN(1,2,3-CD)PYRENE	--	0.4	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	1-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	12	12	11	9.7 U	11	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	2-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	16	16	11	9.7 U	13	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	NAPHTHALENE	1	20	20	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	39	44	40	44	40	63	26 F1	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	PHENANTHRENE	0.22	0.2	510	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	PYRENE	0.5	1000	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8 U	9.7 U	9.8 U	9.9 U	9.7 U	9.7 U	9.5 U	9.9 U	NA	NA	NA	9.8 U	9.6 U	
	TOTAL PAHs	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	69	72	68	66	40	87	58	ND	NA	NA	NA	ND	ND	
VOCs	BENZENE	1	5	31.2	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81	80	77	48	47	51	52	1 U	NA	NA	NA	1 U	1 U	
	ETHYLBENZENE	1	700	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2 U	5 U	5 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	1 U	1 U	
	METHYLENE CHLORIDE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	TOLUENE	1	1000	1900	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2 U	5 U	5 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	1 U	1 U	
	XYLENES (TOTAL)	2	10000	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250	420	420	120	110	220	220	2 U	NA	NA	NA	2 U	2 U	
	METHYL TERT BUTYL ETHER	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	TOTAL BTEX	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	331	500	497	168	157	271	272	ND	NA	NA	NA	ND	ND	
Metals, Total	ARSENIC	0.018	0.018	0.018	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.085	0.13	0.15	0.14	0.16 F1	0.12	0.15	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	
	CHROMIUM	0.013	0.1	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.017	0.026	0.03	0.019	0.032	0.023	0.029	0.01 U	NA	NA	NA	0.01 U	0.01 U	
	LEAD	0.007	0.015	0.015	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
	NICKEL	0.13	0.1	2	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.04 U	0.041	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	NA	0.04 U	0.04 U	
	ZINC	0.96	2	31	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.072	0.097	0.094	0.072	0.077	0.063	0.078	0.02 U	NA	NA	NA	0.02 U	0.066	
Metals, Dissolved	LEAD	0.007	0.015	0.015	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Miscellaneous	AMMONIA AS N	15	30	30	mg/L	0.42	1.7	0.63	7.8	7.7	5.9	7	5.7	3	11	8.8	0.9	0.58	5.5	1.6	3.6	2600	3800	3900	3700	4300	3400	3600 F1	6.1	7.8	6.8	3.1	0.054	0.05 U
	NITRATE (AS N)	--	10	--	mg/L	0.05 UH	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UH	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	170	120	100	280	290	230	250 F1	0.05 U	0.05 U	0.05 U	0.05 U	0.17	0.17	
	NITRITE (AS N)	--	--	--	mg/l	NA	NA	0.05 U	NA	NA	0.088	NA	NA	0.05 U	NA	NA	NA	0.05 U	NA	0.089	0.05 U	NA	NA	NA	50 U	50 UF1	10 U	10 U	NA	NA	0.081	0.05 U	NA	NA
SVOCs	1,4-DICHLOROBENZENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:

Shaded cell indicates comparison standard used in data evaluation.

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Monitoring wells MW-3R, PDMW-8R, PDMW-10R, PDMW-11R, PDMW-14TR, PDMW-23R, PDMW-31R2, PDMW-32R, PDMW-33R, PDMW-34R, PDMW-35R, PDMW-36R, PDMW-37R, PDMW-38R, PDMW-39R, PDMW-40R, PDMW-41R, PDMW-42R, PDMW-43R, PDMW-44R, PDMW-45R, PDMW-46R, PDMW-47R, PDMW-48R, PDMW-49R, PDMW-50R, PDMW-51R, PDMW-52R, PDMW-53R, PDMW-54R, PDMW-55R, PDMW-56R, PDMW-57R, PDMW-58R, PDMW-59R, PDMW-60R, PDMW-61R, PDMW-62R, PDMW-63R, PDMW-64R, PDMW-65R, PDMW-66R, PDMW-67R, PDMW-68R, PDMW-69R, PDMW-70R, PDMW-71R, PDMW-72R, PDMW-73R, PDMW-74R, PDMW-75R, PDMW-76R, PDMW-77R, PDMW-78R, PDMW-79R, PDMW-80R, PDMW-81R, PDMW-82R, PDMW-83R, PDMW-84R, PDMW-85R, PDMW-86R, PDMW-87R, PDMW-88R, PDMW-89R, PDMW-90R, PDMW-91R, PDMW-92R, PDMW-93R, PDMW-94R, PDMW-95R, PDMW-96R, PDMW-97R, PDMW-98R, PDMW-99R, PDMW-100R, PDMW-101R, PDMW-102R, PDMW-103R, PDMW-104R, PDMW-105R, PDMW-106R, PDMW-107R, PDMW-108R, PDMW-109R, PDMW-110R, PDMW-111R, PDMW-112R, PDMW-113R, PDMW-114R, PDMW-115R, PDMW-116R, PDMW-117R, PDMW-118R, PDMW-119R, PDMW-120R, PDMW-121R, PDMW-122R, PDMW-123R, PDMW-124R, PDMW-125R, PDMW-126R, PDMW-127R, PDMW-128R, PDMW-129R, PDMW-130R, PDMW-131R, PDMW-132R, PDMW-133R, PDMW-134R, PDMW-135R, PDMW-136R, PDMW-137R, PDMW-138R, PDMW-139R, PDMW-140R, PDMW-141R, PDMW-142R, PDMW-143R, PDMW-144R, PDMW-145R, PDMW-146R, PDMW-147R, PDMW-148R, PDMW-149R, PDMW-150R, PDMW-151R, PDMW-152R, PDMW-153R, PDMW-154R, PDMW-155R, PDMW-156R, PDMW-157R, PDMW-158R, PDMW-159R, PDMW-160R, PDMW-161R, PDMW-162R,

Notes:

- Shaded cell indicates comparison standard used in data evaluation.
- Highlighted cell indicates analytical result exceeds comparison criteria.
- Bold and Italicized** indicates analytical result exceeds background value.

- Nitrate comparison standard based on the Maximum Contaminant Level (MCL) established by the USEPA National Primary Drinking Water Regulations.

ND - No constituents detected above the laboratory minimum detection limit.

U: Indicates constituent was not detected above value shown.

J: Indicates constituent was detected at an estimated value.

UI: Indicates constituent was not detected at an estimated value shown.

Monitoring wells MW-3R, PDMW-8R, PDMW-10R, PDMW-11R, PDMW-147R, PDMW-23R, PDMW-31R2, PDMW-32R, PDMW-33R, PDMW-39R, PDMW-40R, PDMW-45R, and TMW-4R were installed to replace wells MW-3, PDMW-8T, PDMW-10T, PDMW-11T, PDMW-14T, PDMW-23T, PDMW-30T, PDMW-33R, PDMW-32T, PDMW-39T, PDMW-40, PDMW-45, and TMW-4 respectively.

Notes:

Shaded cell indicates comparison standard used in data evaluation.

Highlighted cell indicates analytical result exceeds comparison criteria.

Red and blue text indicates analytical methods exceeded background value.

N: Nitrate comparison standard based on the Maximum Contaminant Level (MCL) established by the US EPA National Primary Drinking Water Regulations (NPDWR).

ND: No constituents detected above the laboratory minimum detection limit.

U: Iodine constituents was not detected above value shown.

Z: Iodine constituents was detected at an estimated value shown.

UI: Iodine constituents was not detected at an estimated value shown.

Monitoring wells MW-3B, PDMW-8B, PDMW-12B, PDMW-13B, PDMW-14B, PDMW-31D, PDMW-33D, PDMW-33R installed to replace wells MW-3B, PDMW-8B, PDMW-12B, PDMW-13B, PDMW-14B, PDMW-31D, PDMW-33R, PDMW-33R, respectively.

Notes:

- shaded cell indicates compound standard used in data evaluation.
- highlighted cell indicates analytical result exceeds compound criteria.
- Bold and Italicized indicates analytical result exceeds background value.

B: Nitrate compound standard based on the Maximum Contaminant Level (MCL) established by the USEPA National Primary Drinking Water Regulations.

ND: No constituents detected above the laboratory minimum detection limit.

U: Inorganic constituent was not detected above value shown.

I: Inorganic constituent was detected at an estimated value.

U: Inorganic constituent was not detected at an estimated value shown.

Resolving wells: MW-3, PDMW-8S, PDMW-10L, PDMW-11, PDMW-12, PDMW-13, PDMW-14, PDMW-15, PDMW-16, PDMW-17, PDMW-18, PDMW-19, PDMW-20, PDMW-21, PDMW-22, PDMW-23, PDMW-24, PDMW-25, PDMW-26, PDMW-27, PDMW-28, PDMW-29, PDMW-30, PDMW-31, PDMW-32, PDMW-33, PDMW-34, PDMW-35, PDMW-36, PDMW-37, PDMW-38, PDMW-39, PDMW-40, PDMW-41, PDMW-42, PDMW-43, PDMW-44, PDMW-45, PDMW-46, PDMW-47, PDMW-48, PDMW-49, PDMW-50, PDMW-51, PDMW-52, PDMW-53, PDMW-54, PDMW-55, PDMW-56, PDMW-57, PDMW-58, PDMW-59, PDMW-60, PDMW-61, PDMW-62, PDMW-63, PDMW-64, PDMW-65, PDMW-66, PDMW-67, PDMW-68, PDMW-69, PDMW-70, PDMW-71, PDMW-72, PDMW-73, PDMW-74, PDMW-75, PDMW-76, PDMW-77, PDMW-78, PDMW-79, PDMW-80, PDMW-81, PDMW-82, PDMW-83, PDMW-84, PDMW-85, PDMW-86, PDMW-87, PDMW-88, PDMW-89, PDMW-90, PDMW-91, PDMW-92, PDMW-93, PDMW-94, PDMW-95, PDMW-96, PDMW-97, PDMW-98, PDMW-99, PDMW-100, PDMW-101, PDMW-102, PDMW-103, PDMW-104, PDMW-105, PDMW-106, PDMW-107, PDMW-108, PDMW-109, PDMW-110, PDMW-111, PDMW-112, PDMW-113, PDMW-114, PDMW-115, PDMW-116, PDMW-117, PDMW-118, PDMW-119, PDMW-120, PDMW-121, PDMW-122, PDMW-123, PDMW-124, PDMW-125, PDMW-126, PDMW-127, PDMW-128, PDMW-129, PDMW-130, PDMW-131, PDMW-132, PDMW-133, PDMW-134, PDMW-135, PDMW-136, PDMW-137, PDMW-138, PDMW-139, PDMW-140, PDMW-141, PDMW-142, PDMW-143, PDMW-144, PDMW-145, PDMW-146, PDMW-147, PDMW-148, PDMW-149, PDMW-150, PDMW-151, PDMW-152, PDMW-153, PDMW-154, PDMW-155, PDMW-156, PDMW-157, PDMW-158, PDMW-159, PDMW-160, PDMW-161, PDMW-162, PDMW-163, PDMW-164, PDMW-165, PDMW-166, PDMW-167, PDMW-168, PDMW-169, PDMW-170, PDMW-171, PDMW-172, PDMW-173, PDMW-174, PDMW-175, PDMW-176, PDMW-177, PDMW-178, PDMW-179, PDMW-180, PDMW-181, PDMW-182, PDMW-183, PDMW-184, PDMW-185, PDMW-186, PDMW-187, PDMW-188, PDMW-189, PDMW-190, PDMW-191, PDMW-192, PDMW-193, PDMW-194, PDMW-195, PDMW-196, PDMW-197, PDMW-198, PDMW-199, PDMW-200, PDMW-201, PDMW-202, PDMW-203, PDMW-204, PDMW-205, PDMW-206, PDMW-207, PDMW-208, PDMW-209, PDMW-210, PDMW-211, PDMW-212, PDMW-213, PDMW-214, PDMW-215, PDMW-216, PDMW-217, PDMW-218, PDMW-219, PDMW-220, PDMW-221, PDMW-222, PDMW-223, PDMW-224, PDMW-225, PDMW-226, PDMW-227, PDMW-228, PDMW-229, PDMW-230, PDMW-231, PDMW-232, PDMW-233, PDMW-234, PDMW-235, PDMW-236, PDMW-237, PDMW-238, PDMW-239, PDMW-240, PDMW-241, PDMW-242, PDMW-243, PDMW-244, PDMW-245, PDMW-246, PDMW-247, PDMW-248, PDMW-249, PDMW-250, PDMW-251, PDMW-252, PDMW-253, PDMW-254, PDMW-255, PDMW-256, PDMW-257, PDMW-258, PDMW-259, PDMW-260, PDMW-261, PDMW-262, PDMW-263, PDMW-264, PDMW-265, PDMW-266, PDMW-267, PDMW-268, PDMW-269, PDMW-270, PDMW-271, PDMW-272, PDMW-273, PDMW-274, PDMW-275, PDMW-276, PDMW-277, PDMW-278, PDMW-279, PDMW-280, PDMW-281, PDMW-282, PDMW-283, PDMW-284, PDMW-285, PDMW-286, PDMW-287, PDMW-288, PDMW-289, PDMW-290, PDMW-291, PDMW-292, PDMW-293, PDMW-294, PDMW-295, PDMW-296, PDMW-297, PDMW-298, PDMW-299, PDMW-300, PDMW-301, PDMW-302, PDMW-303, PDMW-304, PDMW-305, PDMW-306, PDMW-307, PDMW-308, PDMW-309, PDMW-310, PDMW-311, PDMW-312, PDMW-313, PDMW-314, PDMW-315, PDMW-316, PDMW-317, PDMW-318, PDMW-319, PDMW-320, PDMW-321, PDMW-322, PDMW-323, PDMW-324, PDMW-325, PDMW-326, PDMW-327, PDMW-328, PDMW-329, PDMW-330, PDMW-331, PDMW-332, PDMW-333, PDMW-334, PDMW-335, PDMW-336, PDMW-337, PDMW-338, PDMW-339, PDMW-340, PDMW-341, PDMW-342, PDMW-343, PDMW-344, PDMW-345, PDMW-346, PDMW-347, PDMW-348, PDMW-349, PDMW-350, PDMW-351, PDMW-352, PDMW-353, PDMW-354, PDMW-355, PDMW-356, PDMW-357, PDMW-358, PDMW-359, PDMW-360, PDMW-361, PDMW-362, PDMW-363, PDMW-364, PDMW-365, PDMW-366, PDMW-367, PDMW-368, PDMW-369, PDMW-370, PDMW-371, PDMW-372, PDMW-373, PDMW-374, PDMW-375, PDMW-376, PDMW-377, PDMW-378, PDMW-379, PDMW-380, PDMW-381, PDMW-382, PDMW-383, PDMW-384, PDMW-385, PDMW-386, PDMW-387, PDMW-388, PDMW-389, PDMW-390, PDMW-391, PDMW-392, PDMW-393, PDMW-394, PDMW-395, PDMW-396, PDMW-397, PDMW-398, PDMW-399, PDMW-400, PDMW-401, PDMW-402, PDMW-403, PDMW-404, PDMW-405, PDMW-406, PDMW-407, PDMW-408, PDMW-409, PDMW-410, PDMW-411, PDMW-412, PDMW-413, PDMW-414, PDMW-415, PDMW-416, PDMW-417, PDMW-418, PDMW-419, PDMW-420, PDMW-421, PDMW-422, PDMW-423, PDMW-424, PDMW-425, PDMW-426, PDMW-427, PDMW-428, PDMW-429, PDMW-430, PDMW-431, PDMW-432, PDMW-433, PDMW-434, PDMW-435, PDMW-436, PDMW-437, PDMW-438, PDMW-439, PDMW-440, PDMW-441, PDMW-442, PDMW-443, PDMW-444, PDMW-445, PDMW-446, PDMW-447, PDMW-448, PDMW-449, PDMW-450, PDMW-451, PDMW-452, PDMW-453, PDMW-454, PDMW-455, PDMW-456, PDMW-457, PDMW-458, PDMW-459, PDMW-460, PDMW-461, PDMW-462, PDMW-463, PDMW-464, PDMW-465, PDMW-466, PDMW-467, PDMW-468, PDMW-469, PDMW-470, PDMW-471, PDMW-472, PDMW-473, PDMW-474, PDMW-475, PDMW-476, PDMW-477, PDMW-478, PDMW-479, PDMW-480, PDMW-481, PDMW-482, PDMW-483, PDMW-484, PDMW-485, PDMW-486, PDMW-487, PDMW-488, PDMW-489, PDMW-490, PDMW-491, PDMW-492, PDMW-493, PDMW-494, PDMW-495, PDMW-496, PDMW-497, PDMW-498, PDMW-499, PDMW-500, PDMW-501, PDMW-502, PDMW-503, PDMW-504, PDMW-505, PDMW-506, PDMW-507, PDMW-508, PDMW-509, PDMW-510, PDMW-511

Table 7
Summary of Historical Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location						MW-202								MW-203										MW-204															
Sample Date:						3/8/2006	4/1/2008	7/19/2008	10/9/2008	12/1/2009	6/18/2010	11/4/2014	3/8/2006	4/2/2008			7/19/2008	10/8/2008	12/1/2009	6/18/2010		4/3/2008	7/20/2008	10/7/2008		12/1/2009	3/23/2010		6/16/2010		9/14/2010	12/15/2010	6/5/2011	12/6/2011	11/5/2014				
Sample Type:						Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Normal	Normal	Normal	Normal	Dup	Normal	Normal	Normal	Dup	Normal	Normal	Normal	Dup	Normal	Dup	Normal	Normal	Normal	Normal	Normal				
Sample ID:						MW-202_3/8/2006 6	MW-202_4/1/2008 8	MW-202_7/19/2008 08	MW-202_10/9/2008 08	MW-202_12/1/2009 09	MW-202_6/18/2010 10	MW-202_11/4/2014 14	MW-203_3/8/2006 6	MW-203_4/2/2008 8	MW-203_DUP_4/2/2008 8	MW-203_7/19/2008 08	MW-203_10/8/2008 08	MW-203_12/1/2009 09	MW-203_6/18/2010 10	MW-203DUP_6/18/2010 5	MW-204_4/3/2008 8	MW-204_7/20/2008 08	MW-204_10/7/2008 08	MW-204-DUP_10/7/2008 08	MW-204_12/1/2009 09	MW-204_3/23/2010 10	MW-204_6/16/2010 10	MW-204_DUP_6/16/2010 10	MW-204_9/14/2010 10	MW-204_12/15/2010 010	MW-204_6/5/2011 11	MW-204_12/6/2011 11	MW-204_11/5/2014 14						
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result						
PAHs	ACENAPHTHENE	1	2000	--	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.32	0.27	19 U	19 U	0.3	0.42 J	0.24	0.22	0.19 U	0.19	0.2 U	0.24	19 U					
	ACENAPHTHYLENE	1.4	1	510	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.24	19 U	19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	ANTHRACENE	0.2	0.2	5100	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.27	19 U	19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	BENZ[<i>a</i>]ANTHRACENE	0.2	0.1	3.9	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.29	19 U	19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	BENZ[<i>a</i>]PYRENE	0.2	0.2	0.39	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	19 U	19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	BENZ[<i>b</i>]FLUORANTHENE	0.2	0.2	0.65	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.3	19 U	19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	BENZ[<i>b</i>]FLUORANTHENE	--	--	--	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	19 U	19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	BENZ[<i>k</i>]FLUORANTHENE	--	--	--	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	19 U	19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	CHRYSENE	0.2	0.2	65	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.29	19 U	19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	DIBENZ[<i>a,h</i>]ANTHRACENE	--	0.3	--	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	19 U	19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	FLUORANTHENE	0.5	1000	--	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.53	19 U	19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	FLUORENE	6.5	1000	--	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.37	0.42	19 U	19 U	0.19 U	0.42 J	0.28	0.34	0.19 U	0.19 U	0.2 U	0.19 U	19 U				
	INDENO[1,2,3- <i>cd</i>]PYRENE	--	0.4	--	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	19 U	19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	1-METHYLNAPHTHALENE	--	--	--	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.38 U	7.1	1.1	19 U	19 U	1.3	1.6 J	0.67	0.57	0.38 U	0.38 U	0.38 U	19 U				
	2-METHYLNAPHTHALENE	--	--	--	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.39	0.19 U	23	20	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	NAPHTHALENE	1	20	20	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.34	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.37	100	76	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U	19 U					
	PHENANTHRENE	0.22	0.2	510	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.77	32	34	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U					
	PYRENE	0.5	1000	--	ug/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.19 U	0.69	19 U	19 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	19 U						
	TOTAL PAHs	--	--	--	--	ug/L	ND	ND	ND	ND	ND	ND	NA	0.34	ND	ND	ND	ND	ND	ND	ND	ND	8.18	5.54	155	130	1.6	2.44	1.19	1.13	ND	0.19	ND	0.24	ND				
	VOCs	BENZENE	1	5	31.2	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	32	28	8.5	8.9	16	NA	12	34	NA	1 U	1 U	NA	NA					
ETHYLBENZENE		1	700	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA	NA					
<i>m</i> -XYLENE		--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
METHYLENE CHLORIDE		--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
<i>p</i> -XYLENE		--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
TOLUENE		1	1000	1900	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA	NA					
XYLENES (TOTAL)		2	10000	--	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA					
METHYL TERT BUTYL ETHER		--	--	--	ug/L	10 U	10 U	10 U	NA	NA	10 U	NA	10 U	10 U	10 U	10 U	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	NA	NA	NA	10 U	10 U	NA	NA	NA	NA	NA	NA				
TOTAL BTEX		--	--	--	ug/L	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	32	28	9.5	9.9	16	NA	12	14	NA	ND	ND	NA	NA	NA				
ARSENIC		0.018	0.018	0.018	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	NA	0.02 U	0.02 U	NA	NA	NA	NA	NA	NA					
BERYLLIUM	--	0.004	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
BORON	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
CADMIUM	--	0.005	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
CALCIUM METAL	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
CHROMIUM	0.013	0.1	--	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA					
LEAD	0.007	0.015	0.015	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA					
MAGNESIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
MERCURY	--	0.002	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
NICKEL	0.13	0.1	2	mg/L	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	0.04 U	0.04 U	NA	NA	NA	NA	NA					
POTASSIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA				
SODIUM	--																																						

Notes:

- Shaded cell indicates comparison standard used in data evaluation.
- Highlighted cell indicates analysis result needs comparison criteria.

Read the table:

- 1: Analytical result exceeds background value.
- 2: Nitrate constituent detected above the Maximum Contaminant Level (MCL) established by the USEPA National Primary Drinking Water Regulations.
- 3: No constituents detected above the laboratory minimum detection limit.
- 4: I: constituents suspected but not detected above value shown.
- 5: I: constituents suspected but not detected at an estimated value.
- 6: I: constituents suspected but not detected at an estimated value shown.

Monitoring wells MW-3, PW-8, PW-9, PW-10, PW-11, PW-12, PW-13, PW-14, PW-15, PW-16, PW-17, PW-18, PW-19, PW-20, PW-21, PW-22, PW-23, PW-24, PW-25, PW-26, PW-27, PW-28, PW-29, PW-30, PW-31, PW-32, PW-33, PW-34, PW-35, PW-36, PW-37, PW-38, PW-39, PW-40, PW-41, PW-42, PW-43, PW-44, PW-45, PW-46, PW-47, PW-48, PW-49, PW-50, PW-51, PW-52, PW-53, PW-54, PW-55, PW-56, PW-57, PW-58, PW-59, PW-60, PW-61, PW-62, PW-63, PW-64, PW-65, PW-66, PW-67, PW-68, PW-69, PW-70, PW-71, PW-72, PW-73, PW-74, PW-75, PW-76, PW-77, PW-78, PW-79, PW-80, PW-81, PW-82, PW-83, PW-84, PW-85, PW-86, PW-87, PW-88, PW-89, PW-90, PW-91, PW-92, PW-93, PW-94, PW-95, PW-96, PW-97, PW-98, PW-99, PW-100, PW-101, PW-102, PW-103, PW-104, PW-105, PW-106, PW-107, PW-108, PW-109, PW-110, PW-111, PW-112, PW-113, PW-114, PW-115, PW-116, PW-117, PW-118, PW-119, PW-120, PW-121, PW-122, PW-123, PW-124, PW-125, PW-126, PW-127, PW-128, PW-129, PW-130, PW-131, PW-132, PW-133, PW-134, PW-135, PW-136, PW-137, PW-138, PW-139, PW-140, PW-141, PW-142, PW-143, PW-144, PW-145, PW-146, PW-147, PW-148, PW-149, PW-150, PW-151, PW-152, PW-153, PW-154, PW-155, PW-156, PW-157, PW-158, PW-159, PW-160, PW-161, PW-162, PW-163, PW-164, PW-165, PW-166, PW-167, PW-168, PW-169, PW-170, PW-171, PW-172, PW-173, PW-174, PW-175, PW-176, PW-177, PW-178, PW-179, PW-180, PW-181, PW-182, PW-183, PW-184, PW-185, PW-186, PW-187, PW-188, PW-189, PW-190, PW-191, PW-192, PW-193, PW-194, PW-195, PW-196, PW-197, PW-198, PW-199, PW-200, PW-201, PW-202, PW-203, PW-204, PW-205, PW-206, PW-207, PW-208, PW-209, PW-210, PW-211, PW-212, PW-213, PW-214, PW-215, PW-216, PW-217, PW-218, PW-219, PW-220, PW-221, PW-222, PW-223, PW-224, PW-225, PW-226, PW-227, PW-228, PW-229, PW-230, PW-231, PW-232, PW-233, PW-234, PW-235, PW-236, PW-237, PW-238, PW-239, PW-240, PW-241, PW-242, PW-243, PW-244, PW-245, PW-246, PW-247, PW-248, PW-249, PW-250, PW-251, PW-252, PW-253, PW-254, PW-255, PW-256, PW-257, PW-258, PW-259, PW-260, PW-261, PW-262, PW-263, PW-264, PW-265, PW-266, PW-267, PW-268, PW-269, PW-270, PW-271, PW-272, PW-273, PW-274, PW-275, PW-276, PW-277, PW-278, PW-279, PW-280, PW-281, PW-282, PW-283, PW-284, PW-285, PW-286, PW-287, PW-288, PW-289, PW-290, PW-291, PW-292, PW-293, PW-294, PW-295, PW-296, PW-297, PW-298, PW-299, PW-300, PW-301, PW-302, PW-303, PW-304, PW-305, PW-306, PW-307, PW-308, PW-309, PW-310, PW-311, PW-312, PW-313, PW-314, PW-315, PW-316, PW-317, PW-318, PW-319, PW-320, PW-321, PW-322, PW-323, PW-324, PW-325, PW-326, PW-327, PW-328, PW-329, PW-330, PW-331, PW-332, PW-333, PW-334, PW-335, PW-336, PW-337, PW-338, PW-339, PW-340, PW-341, PW-342, PW-343, PW-344, PW-345, PW-346, PW-347, PW-348, PW-349, PW-350, PW-351, PW-352, PW-353, PW-354, PW-355, PW-356, PW-357, PW-358, PW-359, PW-360, PW-361, PW-362, PW-363, PW-364, PW-365, PW-366, PW-367, PW-368, PW-369, PW-370, PW-371, PW-372, PW-373, PW-374, PW-375, PW-376, PW-377, PW-378, PW-379, PW-380, PW-381, PW-382, PW-383, PW-384, PW-385, PW-386, PW-387, PW-388, PW-389, PW-390, PW-391, PW-392, PW-393, PW-394, PW-395, PW-396, PW-397, PW-398, PW-399, PW-400, PW-401, PW-402, PW-403, PW-404, PW-405, PW-406, PW-407, PW-408, PW-409, PW-410, PW-411, PW-412, PW-413, PW-414, PW-415, PW-416, PW-417, PW-418, PW-419, PW-420, PW-421, PW-422, PW-423, PW-424, PW-425, PW-426, PW-427, PW-428, PW-429, PW-430, PW-431, PW-432, PW-433, PW-434, PW-435, PW-436, PW-437, PW-438, PW-439, PW-440, PW-441, PW-442, PW-443, PW-444, PW-445, PW-446, PW-447, PW-448, PW-449, PW-450, PW-451, PW-452, PW-453, PW-454, PW-455, PW-456, PW-457, PW-458, PW-459, PW-460, PW-461, PW-462, PW-463, PW-464, PW-465, PW-466, PW-467, PW-468, PW-469, PW-470, PW-471, PW-472, PW-473, PW-474, PW-475, PW-476, PW-477, PW-478, PW-479, PW-480, PW-481, PW-482, PW-483, PW-484, PW-485, PW-486, PW-487, PW-488, PW-489, PW-490, PW-491, PW-492, PW-493, PW-494, PW-495, PW-496, PW-497, PW-498, PW-499, PW-500, PW-501, PW-502, PW-503, PW-504, PW-505, PW-506, PW-507, PW-508, PW-509, PW-510, PW-511, PW-512, PW-513, PW-514, PW-515, PW-516, PW-517, PW-518, PW-519, PW-520, PW-521, PW-522, PW-523, PW-524, PW-525, PW-526, PW-527, PW-528, PW-529, PW-530, PW-531, PW-532, PW-533, PW-534, PW-535, PW-536, PW-537, PW-538, PW-539, PW-540, PW-541, PW-542, PW-543, PW-544, PW-545, PW-546, PW-547, PW-548, PW-549, PW-550, PW-551, PW-552, PW-553, PW-554, PW-555, PW-556, PW-557, PW-558, PW-559, PW-560, PW-561, PW-562, PW-563, PW-564, PW-565, PW-566, PW-567, PW-568, PW-569, PW-570, PW-571, PW-572, PW-573, PW-574, PW-575, PW-576, PW-577, PW-578, PW-579, PW-580, PW-581, PW-582, PW-583, PW-584, PW-585, PW-586, PW-587, PW-588, PW-589, PW-590, PW-591, PW-592, PW-593, PW-594, PW-595, PW-596, PW-597, PW-598, PW-599, PW-600, PW-601, PW-602, PW-603, PW-604, PW-605, PW-606, PW-607, PW-608, PW-609, PW-610, PW-611, PW-612, PW-613, PW-614, PW-615, PW-616, PW-617, PW-618, PW-619, PW-620, PW-621, PW-622, PW-623, PW-624, PW-625, PW-626, PW-627, PW-628, PW-629, PW-630, PW-631, PW-632, PW-633, PW-634, PW-635, PW-636, PW-637, PW-638, PW-639, PW-640, PW-641, PW-642, PW-643, PW-644, PW-645, PW-646, PW-647, PW-648, PW-649, PW-650, PW-651, PW-652, PW-653, PW-654, PW-655, PW-656, PW-657, PW-658, PW-659, PW-660, PW-661, PW-662, PW-663, PW-664, PW-665, PW-666, PW-667, PW-668, PW-669, PW-670, PW-671, PW-672, PW-673, PW-674, PW-675, PW

Notes:

- Shaded cell indicates comparison standard used in data evaluation.
- Highlighted cell indicates analytical result exceeds comparison criteria.
- Analyst and Referee initials.
- N/A: Not Applicable.
- N: Nitrate comparison standard based on the Maximum Contaminant Level (MCL) established by the US EPA National Primary Drinking Water Regulations.
- ND: No constituents detected above the laboratory minimum detection limit.
- U: Indicates constituent was not detected above value shown.
- U: Indicates constituent was detected at an estimated value.
- U: Indicates constituent was not detected at an estimated value shown.

Monitoring wells MW-38, PMW-8, PMW-127, PMW-131, PMW-147R, PMW-218R, PMW-312R, PMW-332R, PMW-333R installed to replace wells MW-38, PMW-8, PMW-127, PMW-131, PMW-147, PMW-217, PMW-312, PMW-332, PMW-333 respectively.

Summary of Historical Groundwater Analytical Results

Notes:

- Shaded cell indicates comparison standard used in data evaluation.
- Highlighted cell indicates analytical result exceeds comparison criteria.
- Bold and Italic text** indicates analytical result exceeds background value.
- # - Nitrate comparison standard based on the Maximum Contaminant Level (MCL) established by the USEPA National Primary Drinking Water Regulations.
- ND - No constituents detected above the laboratory minimum detection limit.
- U: Indicates constituent was not detected above value shown.
- ≥: Indicates constituent was detected at an estimated value.
- U: Indicates constituent was not detected at an estimated value shown.

Monitoring wells MW-3R, PDMW-3R, PDMW-120R, PDMW-11R, PDMW-147R, PDMW-23R, PDMW-31R2, PDMW-32R, PDMW-33 installed to replace wells MW-3, PDMW-87, PDMW-107, PDMW-11P, PDMW-147, PDMW-23T, PDMW-30P, PDMW-31R, PDMW-33 respectively.

Table 7
Summary of Historical Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location						PDMW-4T																								
Sample Date:						10/23/1997	8/9/1999	11/17/1999	2/24/2000	5/16/2000	8/22/2000	1/10/2001	7/12/2001	2/5/2002	9/11/2002	2/7/2003	6/25/2003	1/29/2004	7/23/2004	3/6/2006	4/3/2008	7/20/2008	10/6/2008	12/4/2009		6/19/2010	12/15/2010	6/16/2011	12/7/2011	
Sample Type:						Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Normal	Normal	Normal	Normal	
Sample ID:						PDMW-4T_10/23/97	PDMW-4T_8/9/1999	PDMW-4T_11/17/99	PDMW-4T_2/24/2000	PDMW-4T_5/16/2000	PDMW-4T_8/22/2000	PDMW-4T_1/10/2001	PDMW-4T_7/12/2001	PDMW-4T_2/5/2002	PDMW-4T_9/11/2002	PDMW-4T_2/7/2003	PDMW-4T_6/25/2003	PDMW-4T_1/29/2004	PDMW-4T_7/23/2004	PDMW-4T_3/6/2006	PDMW-4T_4/3/2008	PDMW-4T_7/20/2008	PDMW-4T_10/6/2008	PDMW-4T_12/4/2009	PDMW-4T-DUP_12/4/09	PDMW-4T_6/19/2010	PDMW-4T_12/15/2010	PDMW-4T_061611	PDMW-4T_12/07/2011	
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
PAHs	ACENAPHTHENE	1	2000	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	ACENAPHTHYLENE	1.4	1	510	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	ANTHRACENE	0.2	0.2	5100	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	BENZO(A)ANTHRACENE	0.2	0.1	3.9	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	BENZO(A)PYRENE	0.2	0.2	0.39	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	BENZO(B)FLUORANTHENE	0.2	0.2	0.65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	BENZO(G,H)PERYLENE	--	--	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	BENZO(K)FLUORANTHENE	--	--	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	CHRYSENE	0.2	0.2	65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	DIBENZO(A,H)ANTHRACENE	--	0.3	--	ug/L	1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	FLUORANTHENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	FLUORENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	INDEN(1,2,3-CD)PYRENE	--	0.4	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	1-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.76 U	0.76 U	0.38 U	0.38 U	NA	
	2-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	NAPHTHALENE	1	20	20	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	PHENANTHRENE	0.22	0.2	510	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	PYRENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.97 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	TOTAL PAHs	--	--	--	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	VOCs	BENZENE	1	5	31.2	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA
ETHYLBENZENE		1	700	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	
m-XYLENE		--	--	--	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
METHYLENE CHLORIDE		--	--	--	ug/L	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
p-XYLENE		--	--	--	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOLUENE		1	1000	1000	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	
XYLENES (TOTAL)		2	10000	--	ug/L	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	
METHYL TERT BUTYL ETHER		--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	NA	10 U	10 U	NA	NA	
TOTAL BTEX		--	--	--	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	
ARSENIC		0.018	0.018	0.018	mg/L	0.01 U	0.017	0.01 U	0.01 U	0.01 U	0.022	0.01 U	0.018	NA	0.01 U	0.01 U	0.014	0.011	0.02	0.022	0.038	0.02	0.032	0.02 U	0.02 U	0.039	0.019	0.027	0.018 U	
Metals, Total	BERYLLIUM	--	0.004	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	BORON	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	CADMIUM	--	0.005	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	CALCIUM METAL	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	CHROMIUM	0.013	0.1	--	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA		
	LEAD	0.007	0.015	0.015	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	NA		
	MAGNESIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	MERCURY	--	0.002	--	mg/L	0.0002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	NICKEL	0.13	0.1	2	mg/L	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA		
	POTASSIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SODIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	ZINC	0.96	2	31	mg/L	0.102	0.14	0.056	0.17	0.11	0.02 U	0.26	0.19	NA	0.24	0.12	0.039	0.096												

Table 7
Summary of Historical Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location:						PMW-ST																											
Sample Date:						10/30/1997	8/9/1999	11/17/1999	2/24/2000	5/16/2000	8/22/2000	1/10/2001	7/12/2001	9/12/2002		2/6/2003	6/27/2003	1/29/2004	7/23/2004	3/6/2006	4/4/2006	7/21/2008	10/6/2008	12/5/2009	6/17/2010	12/16/2010		6/16/2011		12/7/2011			
Sample Type:						Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Normal		Normal			
Sample ID:						PDMW-ST_103019 ST	PDMW-ST_891999	PDMW-ST_111719 99	PDMW-ST_224200 0	PDMW-ST_516200 0	PDMW-ST_822200 0	PDMW-ST_1101200 1	PDMW-ST_712200 1	PDMW-ST_912200 2	PDMW-ST_DUP_912 2002	PDMW-ST_262003	PDMW-ST_627200 3	PDMW-ST_129200 4	PDMW-ST_723200 4	PDMW-ST_362006	PDMW-ST_442006	PDMW-ST_721200 8	PDMW-ST_106200 8	PDMW-ST_125200 9	PDMW-ST_617201 0	PDMW-ST_121620 10	PDMW-STDUP9_12 162010	PDMW-ST_061611	PDMW-ST-061611FF	PDMW-ST_1207201 1			
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result			
PAHs	ACENAPHTHENE	1	2000	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA			
	ACENAPHTHYLENE	1.4	1	510	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA			
	ANTHRACENE	0.2	0.2	5100	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA			
	BENZO[A]ANTHRACENE	0.2	0.1	3.9	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA			
	BENZO[A]PYRENE	0.2	0.2	0.39	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA			
	BENZOF[FLUORANTHENE]	0.2	0.2	0.65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA			
	BENZOGUAIPERYLENE	--	--	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA			
	BENZOK[FLUORANTHENE]	--	--	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA			
	CHRYSENE	0.2	0.2	65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA		
	DIBENZO[A,H]ANTHRACENE	--	0.3	--	ug/L	1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA		
	FLUORANTHENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA		
	FLUORENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA		
	INDENO[1,2,3-CD]PYRENE	--	0.4	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA		
	1-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.78 U	0.38 U	NA	NA	NA	NA			
	2-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA		
	NAPHTHALENE	1	20	20	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA		
	PHENANTHRENE	0.22	0.2	510	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA			
	PYRENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA		
	TOTAL PAHs	--	--	--	--	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	
	VOCS	BENZENE	1	5	31.2	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	
ETHYLBENZENE		1	700	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA		
o,m-XYLENE		--	--	--	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
METHYLENE CHLORIDE		--	--	--	ug/L	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
p-XYLENE		--	--	--	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
TOLUENE		1	1000	1000	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA		
XYLENES (TOTAL)		2	10000	--	ug/L	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA	NA	NA	NA	
METHYL TERT BUTYL ETHER		--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	10 U	NA	NA	NA	NA	NA	NA	NA	
TOTAL BTEX		--	--	--	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
ARSENIC		0.018	0.018	0.018	mg/L	0.01 U	0.098	0.066	0.01 U	0.049	0.082	0.01 U	0.069	0.034	0.028	0.01 U	0.035	0.01 U	0.074	0.01 U	0.01 U	0.01 U	0.01 U	0.019	0.02 U	0.02 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U		
Metals, Total	BERYLLIUM	--	0.004	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	BORON	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	CADMIUM	--	0.005	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	CALCIUM METAL	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	CHROMIUM	0.013	0.1	--	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0															

Highlighted cell indicates analytical result exceeds comparison criteria

ND - No constituents detected above the laboratory minimum detection limit.

UJ: Indicates constituent was not detected at an estimated value shown

Monitoring wells MW-3R, PDMW-8R, PDMW-10R, PDMW-11R, PDMW-14TR, PDMW-23R, PDMW-31R2, PDMW-32R, PDMW-33R installed to replace wells MW-3, PDMW-8T, PDMW-10T, PDMW-11P, PDMW-14T, PDMW-23T, PDMW-30P, PDMW-31R, PDMW-32R respectively.

Table 7
Summary of Historical Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location:						PDMW-6P																							
Sample Date:						10/30/1997	8/11/1999	11/16/1999	2/23/2000	5/15/2000	8/21/2000	1/8/2001	7/12/2001	2/5/2002	9/12/2002	2/7/2003	6/25/2003	1/29/2004	7/23/2004	Dup	3/6/2006	4/3/2008	7/20/2008	10/6/2008	12/3/2009	6/17/2010	12/15/2010	6/16/2011	12/7/2011
Sample Type:						Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Sample ID:						PDMW-6P_10/30/1997	PDMW-6P_8/11/1999	PDMW-6P_11/16/1999	PDMW-6P_2/23/2000	PDMW-6P_5/15/2000	PDMW-6P_8/21/2000	PDMW-6P_1/8/2001	PDMW-6P_7/12/2001	PDMW-6P_2/5/2002	PDMW-6P_9/12/2002	PDMW-6P_2/7/2003	PDMW-6P_6/25/2003	PDMW-6P_1/29/2004	PDMW-6P_7/23/2004	PDMW-6P_7/23/2004 (DUP)	PDMW-6P_3/6/2006	PDMW-6P_4/3/2008	PDMW-6P_7/20/2008	PDMW-6P_10/6/2008	PDMW-6P_12/3/2009	PDMW-6P_6/17/2010	PDMW-6P_12/15/2010	PDMW-6P_06/16/2011	PDMW-6P_12/07/2011
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
PAHs	ACENAPHTHENE	1	2000	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.76	NA	NA	NA	
	ACENAPHTHYLENE	1.4	1	510	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	ANTHRACENE	0.2	0.2	5100	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	BENZO(A)ANTHRACENE	0.2	0.1	3.9	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	BENZO(A)PYRENE	0.2	0.2	0.39	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	BENZO(B)FLUORANTHENE	0.2	0.2	0.65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	BENZO(G,H)PERYLENE	--	--	--	ug/L	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	BENZO(K)FLUORANTHENE	--	--	--	ug/L	0.5 U	NA	0.2 U	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	CHRYSENE	0.2	0.2	65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	DIBENZO(A,H)ANTHRACENE	--	0.3	--	ug/L	1 U	NA	0.2 U	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	FLUORANTHENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	FLUORENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.47	NA	NA	NA	
	INDEN(1,2,3-CD)PYRENE	--	0.4	--	ug/L	0.5 U	NA	0.2 U	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	1-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	1 U	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.76 U	0.4 U	NA	NA	NA	
	2-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	1 U	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	NAPHTHALENE	1	20	20	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.23	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA
	PHENANTHRENE	0.22	0.2	510	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	PYRENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	NA	NA	NA	
	TOTAL PAHs	--	--	--	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	0.23	ND	ND	ND	ND	1.23	NA	NA	NA
	VOCs	BENZENE	1	5	31.2	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA
ETHYLBENZENE		1	700	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA
m-XYLENE		--	--	--	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
METHYLENE CHLORIDE		--	--	--	ug/L	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
p-XYLENE		--	--	--	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOLUENE		1	1000	1000	ug/L	1.1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA
XYLENES (TOTAL)		2	10000	--	ug/L	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA	NA
METHYL TERT BUTYL ETHER		--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	10 U	NA	NA	NA
TOTAL BTEX		--	--	--	ug/L	1.1	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
ARSENIC		0.018	0.018	0.018	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.016	NA	0.017	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014	0.007	0.02 U	0.004	0.042	0.018 U	0.018 U		
Metals, Total	BERYLLIUM	--	0.004	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	BORON	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	CADMIUM	--	0.005	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	CALCIUM METAL	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	CHROMIUM	0.013	0.1	--	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	
	LEAD	0.007	0.015	0.015	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	NA	NA	NA
	MAGNESIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	MERCURY	--	0.002	--	mg/L	0.0002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	NICKEL	0.13	0.1	2	mg/L	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	NA	
	POTASSIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SODIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	ZINC	0.96	2	31	mg/L	0.02 U	0.037	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	0.023	0.034	0.02 U	0.036	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	
Metals, Dissolved	ARSENIC	0.018	0.018	0.018	mg/L	NA	NA	0.01 U	0.01 U	NA	NA	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA	0.018	NA	NA	NA	NA	NA	NA	NA	
	BERYLLIUM	--	0.004	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA													

Notes:

- Shaded cell indicates comparison standard used in data evaluation.
- Highlighted cell indicates analytical result exceeds comparison criteria.

bold and italic indicates analytical result exceeds background value.

1 = Intricate comparison standard based on the Maximum Contaminant Level (MCL) established by the USEPA National Primary Drinking Water Regulations.

ND = No constituents detected above the laboratory minimum detection limit.

UI: Intricate constituent was **not** detected above value shown.

Z: Intricate constituent was **detected** at an estimated value shown.

UI: Intricate constituent was **not** detected at an estimated value shown.

Monitoring wells MW-3R, PDMAW-3R, PDMAW-10D, PDMAW-14R, PDMAW-23R, PDMAW-31D, PDMAW-32R, PDMAW-33R installed to respectively.

Table 7
Summary of Historical Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location:						PDMW-12P																				
Sample Date:						10/28/1997	8/9/1999	11/17/1999	2/23/2000	5/15/2000	8/22/2000	1/9/2001	7/12/2001	2/5/2002	9/12/2002	2/5/2003	6/27/2003	1/29/2004	7/23/2004	3/7/2006	4/1/2008	7/19/2008	10/9/2008	12/3/2009	6/18/2010	6/16/2011
Sample Type:						Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Sample ID:						PDMW-12P_10/28/1997	PDMW-12P_8/9/1999	PDMW-12P_11/17/1999	PDMW-12P_2/23/2000	PDMW-12P_5/15/2000	PDMW-12P_8/22/2000	PDMW-12P_1/9/2001	PDMW-12P_7/12/2001	PDMW-12P_2/5/2002	PDMW-12P_9/12/2002	PDMW-12P_2/5/2003	PDMW-12P_6/27/2003	PDMW-12P_1/29/2004	PDMW-12P_7/23/2004	PDMW-12P_3/7/2006	PDMW-12P_4/1/2008	PDMW-12P_7/19/2008	PDMW-12P_10/9/2008	PDMW-12P_12/3/2009	PDMW-12P_6/18/2010	PDMW-12P_6/16/2011
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
PAHs	ACENAPHTHENE	1	2000	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA
	ACENAPHTHYLENE	1.4	1	510	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.4	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA
	ANTHRACENE	0.2	0.2	5100	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA
	BENZO(A)ANTHRACENE	0.2	0.1	3.9	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	BENZO(A)PYRENE	0.2	0.2	0.39	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	BENZO(B)FLUORANTHENE	0.2	0.2	0.65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	BENZO(G,H)PERYLENE	--	--	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	BENZO(K)FLUORANTHENE	--	--	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	CHRYSENE	0.2	0.2	65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	DIBENZO(A,H)ANTHRACENE	--	0.3	--	ug/L	1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	FLUORANTHENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	FLUORENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	INDENO(1,2,3-CD)PYRENE	--	0.4	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	1-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	2-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	NAPHTHALENE	1	20	20	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	0.2 U	0.2 U	0.2 U	0.24	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA
	PHENANTHRENE	0.22	0.2	510	ug/L	0.22	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	PYRENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	
	TOTAL PAHs	--	--	--	ug/L	0.22	ND	ND	ND	ND	ND	ND	1.4	NA	ND	ND	ND	0.24	ND	ND	ND	ND	ND	ND	ND	NA
	VOCs	BENZENE	1	5	31.2	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ETHYLBENZENE		1	700	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA
p/m-XYLENE		--	--	--	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE		--	--	--	ug/L	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-XYLENE		--	--	--	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE		1	1000	1900	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA
XYLENES (TOTAL)		2	10000	--	ug/L	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA
METHYL TERT BUTYL ETHER		--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	10 U	NA
TOTAL BTEX		--	--	--	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
ARSENIC		0.018	0.018	0.018	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	0.01 U	0.01 U	0.01 U	0.018	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.02 U	NA
Metals, Total	BERYLLIUM	--	0.004	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	BORON	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CADMIUM	--	0.005	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CALCIUM METAL	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CHROMIUM	0.013	0.1	--	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA
	LEAD	0.007	0.015	0.015	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.01 U
	MAGNESIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	MERCURY	--	0.002	--	mg/L	0.0002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	NICKEL	0.13	0.1	2	mg/L	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	
	POTASSIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SODIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	ZINC	0.96	2	31	mg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.059	0.02 U	NA	0.02 U	0.02 U	0.02 U	0.11	0.053	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA
Metals, Dissolved	ARSENIC	0.018	0.018	0.018	mg/L	NA	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	BERYLLIUM	--	0.004	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CADMIUM	--	0.005	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CHROMIUM	0.013	0.1	--	mg/L	NA	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	LEAD	0.007	0.015	0.015	mg/L	NA	NA	0.005 U	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	MERCURY	--	0.002	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	NICKEL	0.13	0.1	2	mg/L	NA	NA	0.04 U	0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	ZINC	0.96	2	31	mg/L	NA	NA	0.02 U	0.02 U	NA	NA	NA	0.065	NA	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 7

Notes:

- Shaded cell indicates comparison standard used in data evaluation.
- Highlighted cell indicates analytical result exceeds background value.
- Solid and Dashed** text: analytical result exceeds background value.
- Solid** text: comparison standard based on the Maximum Contaminant Level (MCL) established by the USEPA National Primary Drinking Water Regulations.
- ND: No constituents detected above the laboratory minimum detection limit.
- I: Indicates constituent was not detected above value shown.
- U: Indicates constituent was detected at an estimated value.
- Z: Indicates constituent was not detected at an estimated value shown.

Monitoring wells MW-38, PMW-88, PMW-108, PMW-118, PMW-147R, PMW-23R, PMW-31R2, PMW-32R, PMW-33 installed respectively.

Monitoring wells MW-39, PMW-89, PMW-109, PMW-119, PMW-147, PMW-147R, PMW-30R, PMW-31R, PMW-33R installed respectively.

Table 7
Summary of Historical Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location:					PDMW-21T																									
Sample Date:					10/29/1997	8/9/1999	11/17/1999	2/24/2000	5/16/2000	8/21/2000	1/9/2001	7/10/2001	2/4/2002	9/11/2002	2/6/2003	6/25/2003	1/27/2004	7/21/2004	3/6/2006	4/1/2008	7/18/2008	10/6/2008	12/4/2009	6/19/2010		12/16/2010	6/16/2011		12/5/2011	
Sample Type:					Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Normal	Normal	Dup	Normal	
Sample ID:					PDMW-21T_10/29/1997	PDMW-21T_8/9/1999	PDMW-21T_11/17/1999	PDMW-21T_2/24/2000	PDMW-21T_5/16/2000	PDMW-21T_8/21/2000	PDMW-21T_1/9/2001	PDMW-21T_7/10/2001	PDMW-21T_2/4/2002	PDMW-21T_9/11/2002	PDMW-21T_2/6/2003	PDMW-21T_6/25/2003	PDMW-21T_1/27/2004	PDMW-21T_7/21/2004	PDMW-21T_3/6/2006	PDMW-21T_4/1/2008	PDMW-21T_7/18/2008	PDMW-21T_10/6/2008	PDMW-21T_12/4/2009	PDMW-21T_6/19/2010	PDMW-21T_12/16/2010	PDMW-21T_06/16/11	DUP-2-06/16/11	PDMW-21T-12/05/2011		
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
PAHs	ACENAPHTHENE	1	2000	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	ACENAPHTHYLENE	1.4	1	510	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	ANTHRACENE	0.2	0.2	5100	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	BENZ[<i>a</i>]ANTHRACENE	0.2	0.1	3.9	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	BENZ[<i>a</i>]PYRENE	0.2	0.2	0.39	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	BENZ[<i>b</i>]FLUORANTHENE	0.2	0.2	0.65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	BENZ[<i>k</i>]FLUORANTHENE	--	--	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	BENZ[<i>k</i>]FLUORANTHENE	--	--	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	CHRYSENE	0.2	0.2	65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	DIBENZ[<i>a,h</i>]ANTHRACENE	--	0.3	--	ug/L	1 U	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	FLUORANTHENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	FLUORENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	INDEN[1,2,3- <i>cd</i>]PYRENE	--	0.4	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	1-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	2-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	NAPHTHALENE	1	20	20	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	PHENANTHRENE	0.22	0.2	510	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	PYRENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.96 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	
	TOTAL PAHs	--	--	--	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
	VOCs	BENZENE	1	5	31.2	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA
ETHYLBENZENE		1	700	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA
<i>p</i> -XYLENE		--	--	--	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE		--	--	--	ug/L	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>m</i> -XYLENE		--	--	--	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE		1	1000	1900	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA
XYLENES (TOTAL)		2	10000	--	ug/L	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA
METHYL TERT BUTYL ETHER		--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	10 U	10 U	10 U	10 U	NA	NA	NA
TOTAL BTEX		--	--	--	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
ARSENIC		0.018	0.018	0.018	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA
Metals, Total	BERYLLIUM	--	0.004	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	BORON	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CADMIUM	--	0.005	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CALCIUM METAL	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CHROMIUM	0.013	0.1	--	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	
	LEAD	0.007	0.015	0.015	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.0075	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	
	MAGNESIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	MERCURY	--	0.002	--	mg/L	0.0002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	NICKEL	0.13	0.1	2	mg/L	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	
	POTASSIUM	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SODIUM	--	--	--	mg/L																									

Table 7
Summary of Historical Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location:						PDMW-2B2																PDMW-30P																PDMW-30R								PDMW-31P		
Sample Date:						11/2/1997	11/8/1997	8/10/1999	11/18/1999	2/23/2000	5/15/2000	8/21/2000	1/9/2001	7/10/2001	9/13/2002	2/4/2003	6/24/2003	1/26/2004	7/21/2004	3/9/2006	11/5/1997	5/16/2000	1/10/2001	9/12/2002	2/6/2003	6/26/2003	1/30/2004	3/8/2006	4/4/2008	7/22/2008	10/9/2008	12/3/2009	12/11/2013	11/3/2014	5/20/2015	6/15/2010	12/14/2010	6/4/2011	12/21/2011		6/3/2014	11/6/1997	8/10/1999	11/18/1999				
Sample Type:						Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	DUP-8/10/1999	Normal	Normal	Normal	Normal				
Sample ID:						PDMW-280_11/2/97	PDMW-280_11/8/97	PDMW-280_8/10/99	PDMW-280_11/18/99	PDMW-280_2/23/00	PDMW-280_5/15/00	PDMW-280_8/21/00	PDMW-280_1/9/01	PDMW-280_7/10/01	PDMW-280_9/13/02	PDMW-280_2/4/03	PDMW-280_1/26/04	PDMW-280_7/21/04	PDMW-280_Filtered_3/9/2006	PDMW-280_Unfiltered_3/9/2006	PDMW-30P_11/5/97	PDMW-30P_5/16/00	PDMW-30P_1/10/01	PDMW-30P_9/12/02	PDMW-30P_2/6/03	PDMW-30P_6/26/03	PDMW-30P_1/30/04	PDMW-30P_3/8/06	PDMW-30P_4/4/08	PDMW-30P_7/22/08	PDMW-30P_10/9/08	PDMW-30P_12/3/09	PDMW-30P_12/11/13	PDMW-30P_11/3/14	PDMW-30P_5/20/15	PDMW-30P_6/15/10	PDMW-30R_12/14/10	PDMW-30R_6/4/11	PDMW-30R_12/21/11	PDMW-30R_6/3/14	PDMW-31P_11/6/97	PDMW-31P_8/10/99	PDMW-31P_11/18/99					
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result					
PAHs	ACENAPHTHENE	1	2000	--	ug/L	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	3.4	0.19 U	0.19 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U				
	ACENAPHTHYLENE	1.4	1	510	ug/L	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.8 U	0.19 U	0.19 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U				
	ANTHRACENE	0.2	0.2	5100	ug/L	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.8 U	0.19 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U			
	BENZ(a)ANTHRACENE	0.2	0.1	3.9	ug/L	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.8 U	0.19 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U				
	BENZ(a)PYRENE	0.2	0.2	0.39	ug/L	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.8 U	0.19 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U				
	BENZ(b)FLUORANTHENE	0.2	0.2	0.65	ug/L	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.8 U	0.19 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U					
	BENZ(g)FLUORANTHENE	--	--	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.8 U	0.19 U	0.19 U	0.5 U	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U				
	CHRYSENE	0.2	0.2	85	ug/L	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.8 U	0.19 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U					
	DIBENZO(a,h)ANTHRACENE	--	0.3	--	ug/L	1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.8 U	0.19 U	0.19 U	1 U	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U				
	FLUORANTHENE	0.5	1000	--	ug/L	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.8 U	0.19 U	0.19 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U				
	FLUORENE	0.5	1000	--	ug/L	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	2	0.19 U	0.19 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U					
	INDENO(1,2,3-cd)PYRENE	--	0.4	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.8 U	0.19 U	0.19 U	0.5 U	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U					
	1-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	2	0.19 U	0.19 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U				
	2-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	3.2	0.19 U	0.19 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U				
	NAPHTHALENE	1	20	20	ug/L	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	35	0.19 U	0.19 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U				
	PHENANTHRENE	0.22	0.2	510	ug/L	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	3.4	0.19 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U					
	PYRENE	0.5	1000	--	ug/L	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.8 U	0.19 U	0.19 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U				
	TOTAL PAHs	--	--	--	--	ug/L	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.89			
	VOCs	BENZENE	1	5	31.2	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U				
		ETHYLBENZENE	1	700	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U				
p-m-XYLENE		--	--	--	ug/L	NA	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
METHYLENE CHLORIDE		--	--	--	ug/L	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA						
o-XYLENE		--	--	--	ug/L	NA	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA						
TOLUENE		1	1000	1900	ug/L	2.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U						
XYLENES (TOTAL)		2	10000	--	ug/L	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	NA	2 U	2 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U						
METHYL TERT BUTYL ETHER		--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U					
TOTAL BTX		--	--	--	ug/L	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND					
Metals, Total		ARSENIC	0.018	0.018	0.018	mg/L	0.01 U	NA	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0131	0.018	0.01 U	0.014	0.011	0.11	0.012	0.01 U	0.01	0.035	0.01 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.018 U	0.018 U	0.018 U	0.018 U	0.02 U	0.111	0.11	0.16					
	BERYLLIUM	--	0.004	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA					
	BORON	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA						
	CADMIUM	--	0.005	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA</																

Notes:

- Shaded cell indicates comparison standard used in data evaluation.
- Highlighted cell indicates analytical result exceeds comparison criteria.
- Red italicized text indicates analytical result exceeds background value.
- N: Nitrate comparison standard based on the Maximum Contaminant Level (MCL) established by the US EPA National Primary Drinking Water Regulations.
- ND: No constituents detected above the laboratory minimum detection limit.
- U: Inorganic constituent was not detected above value shown.
- J: Inorganic constituent was detected at an estimated value.
- U: Inorganic constituent was not detected at an estimated value shown.

Monitoring wells MW-38, PM-38, PM-39, PM-40, PM-41, PM-42, PM-43, PM-44, PM-45, PM-46, PM-47, PM-48, PM-49, PM-50, PM-51, PM-52, PM-53, PM-54, PM-55, PM-56, PM-57, PM-58, PM-59, PM-60, PM-61, PM-62, PM-63, PM-64, PM-65, PM-66, PM-67, PM-68, PM-69, PM-70, PM-71, PM-72, PM-73, PM-74, PM-75, PM-76, PM-77, PM-78, PM-79, PM-80, PM-81, PM-82, PM-83, PM-84, PM-85, PM-86, PM-87, PM-88, PM-89, PM-90, PM-91, PM-92, PM-93, PM-94, PM-95, PM-96, PM-97, PM-98, PM-99, PM-100, PM-101, PM-102, PM-103, PM-104, PM-105, PM-106, PM-107, PM-108, PM-109, PM-110, PM-111, PM-112, PM-113, PM-114, PM-115, PM-116, PM-117, PM-118, PM-119, PM-120, PM-121, PM-122, PM-123, PM-124, PM-125, PM-126, PM-127, PM-128, PM-129, PM-130, PM-131, PM-132, PM-133, PM-134, PM-135, PM-136, PM-137, PM-138, PM-139, PM-140, PM-141, PM-142, PM-143, PM-144, PM-145, PM-146, PM-147, PM-148, PM-149, PM-150, PM-151, PM-152, PM-153, PM-154, PM-155, PM-156, PM-157, PM-158, PM-159, PM-160, PM-161, PM-162, PM-163, PM-164, PM-165, PM-166, PM-167, PM-168, PM-169, PM-170, PM-171, PM-172, PM-173, PM-174, PM-175, PM-176, PM-177, PM-178, PM-179, PM-180, PM-181, PM-182, PM-183, PM-184, PM-185, PM-186, PM-187, PM-188, PM-189, PM-190, PM-191, PM-192, PM-193, PM-194, PM-195, PM-196, PM-197, PM-198, PM-199, PM-200, PM-201, PM-202, PM-203, PM-204, PM-205, PM-206, PM-207, PM-208, PM-209, PM-210, PM-211, PM-212, PM-213, PM-214, PM-215, PM-216, PM-217, PM-218, PM-219, PM-220, PM-221, PM-222, PM-223, PM-224, PM-225, PM-226, PM-227, PM-228, PM-229, PM-230, PM-231, PM-232, PM-233, PM-234, PM-235, PM-236, PM-237, PM-238, PM-239, PM-240, PM-241, PM-242, PM-243, PM-244, PM-245, PM-246, PM-247, PM-248, PM-249, PM-250, PM-251, PM-252, PM-253, PM-254, PM-255, PM-256, PM-257, PM-258, PM-259, PM-260, PM-261, PM-262, PM-263, PM-264, PM-265, PM-266, PM-267, PM-268, PM-269, PM-270, PM-271, PM-272, PM-273, PM-274, PM-275, PM-276, PM-277, PM-278, PM-279, PM-280, PM-281, PM-282, PM-283, PM-284, PM-285, PM-286, PM-287, PM-288, PM-289, PM-290, PM-291, PM-292, PM-293, PM-294, PM-295, PM-296, PM-297, PM-298, PM-299, PM-300, PM-301, PM-302, PM-303, PM-304, PM-305, PM-306, PM-307, PM-308, PM-309, PM-310, PM-311, PM-312, PM-313, PM-314, PM-315, PM-316, PM-317, PM-318, PM-319, PM-320, PM-321, PM-322, PM-323, PM-324, PM-325, PM-326, PM-327, PM-328, PM-329, PM-330, PM-331, PM-332, PM-333, PM-334, PM-335, PM-336, PM-337, PM-338, PM-339, PM-340, PM-341, PM-342, PM-343, PM-344, PM-345, PM-346, PM-347, PM-348, PM-349, PM-350, PM-351, PM-352, PM-353, PM-354, PM-355, PM-356, PM-357, PM-358, PM-359, PM-360, PM-361, PM-362, PM-363, PM-364, PM-365, PM-366, PM-367, PM-368, PM-369, PM-370, PM-371, PM-372, PM-373, PM-374, PM-375, PM-376, PM-377, PM-378, PM-379, PM-380, PM-381, PM-382, PM-383, PM-384, PM-385, PM-386, PM-387, PM-388, PM-389, PM-390, PM-391, PM-392, PM-393, PM-394, PM-395, PM-396, PM-397, PM-398, PM-399, PM-400, PM-401, PM-402, PM-403, PM-404, PM-405, PM-406, PM-407, PM-408, PM-409, PM-410, PM-411, PM-412, PM-413, PM-414, PM-415, PM-416, PM-417, PM-418, PM-419, PM-420, PM-421, PM-422, PM-423, PM-424, PM-425, PM-426, PM-427, PM-428, PM-429, PM-430, PM-431, PM-432, PM-433, PM-434, PM-435, PM-436, PM-437, PM-438, PM-439, PM-440, PM-441, PM-442, PM-443, PM-444, PM-445, PM-446, PM-447, PM-448, PM-449, PM-450, PM-451, PM-452, PM-453, PM-454, PM-455, PM-456, PM-457, PM-458, PM-459, PM-460, PM-461, PM-462, PM-463, PM-464, PM-465, PM-466, PM-467, PM-468, PM-469, PM-470, PM-471, PM-472, PM-473, PM-474, PM-475, PM-476, PM-477, PM-478, PM-479, PM-480, PM-481, PM-482, PM-483, PM-484, PM-485, PM-486, PM-487, PM-488, PM-489, PM-490, PM-491, PM-492, PM-493, PM-494, PM-495, PM-496, PM-497, PM-498, PM-499, PM-500, PM-501, PM-502, PM-503, PM-504, PM-505, PM-506, PM-507, PM-508, PM-509, PM-510, PM-511, PM-512, PM-513, PM-514, PM-515, PM-516, PM-517, PM-518, PM-519, PM-520, PM-521, PM-522, PM-523, PM-524, PM-525, PM-526, PM-527, PM-528, PM-529, PM-530, PM-531, PM-532, PM-533, PM-534, PM-535, PM-536, PM-537, PM-538, PM-539, PM-540, PM-541, PM-542, PM-543, PM-544, PM-545, PM-546, PM-547, PM-548, PM-549, PM-550, PM-551, PM-552, PM-553, PM-554, PM-555, PM-556, PM-557, PM-558, PM-559, PM-560, PM-561, PM-562, PM-563, PM-564, PM-565, PM-566, PM-567, PM-568, PM-569, PM-570, PM-571, PM-572, PM-573, PM-574, PM-575, PM-576, PM-577, PM-578, PM-579, PM-580, PM-581, PM-582, PM-583, PM-584, PM-585, PM-586, PM-587, PM-588, PM-589, PM-590, PM-591, PM-592, PM-593, PM-594, PM-595, PM-596, PM-597, PM-598, PM-599, PM-600, PM-601, PM-602, PM-603, PM-604, PM-605, PM-606, PM-607, PM-608, PM-609, PM-610, PM-611, PM-612, PM-613, PM-614, PM-615, PM-616, PM-617, PM-618, PM-619, PM-620, PM-621, PM-622, PM-623, PM-624, PM-625, PM-626, PM-627, PM-628, PM-629, PM-630, PM-631, PM-632, PM-633, PM-634, PM-635, PM-636, PM-637, PM-638, PM-639, PM-640, PM-641, PM-642, PM-643, PM-644, PM-645, PM-646, PM-647, PM-648, PM-649, PM-650, PM-651, PM-652, PM-653, PM-654, PM-655, PM-656, PM-657, PM-658, PM-659, PM-660, PM-661, PM-662, PM-663, PM-664, PM-665, PM-666, PM-667, PM-668, PM-669, PM-670, PM-671, PM-672, PM-673, PM-674, PM-675, PM-676, PM-677, PM-678, PM-679, PM-680, PM-681, PM-682, PM-683, PM-684, PM-685, PM-686, PM-687, PM-688, PM-689, PM-690, PM-691, PM-692, PM-693, PM-694, PM-695, PM-696, PM-697, PM-698, PM-699, PM-700, PM-701, PM-702, PM-703, PM-7

Table 7
Summary of Historical Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location:						PDMW-31R														PDMW-31R2										PDMW-32P			
Sample Date:						2/23/2000	5/16/2000	8/22/2000	1/10/2001	7/16/2001	2/6/2002	9/12/2002	2/7/2003	6/26/2003	1/29/2004	7/22/2004	3/8/2006		4/2/2008	7/21/2008		10/8/2008	12/4/2009	6/16/2010	12/15/2010	6/15/2011	12/7/2011	11/5/1997	8/9/1999	11/18/1999			
Sample Type:						Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal		Normal	Normal	Dup	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal			
Sample ID:						PDMW-31R, 2/23/2000	PDMW-31R, 5/16/2000	PDMW-31R, 8/22/2000	PDMW-31R, 1/10/2001	PDMW-31R, 7/16/2001	PDMW-31R, 2/6/2002	PDMW-31R, 9/12/2002	PDMW-31R, 2/7/2003	PDMW-31R, 6/26/2003	PDMW-31R, 1/29/2004	PDMW-31R, 7/22/2004	PDMW-31R, Filtered, 3/8/2006	PDMW-31R, Unfiltered, 3/8/2006	PDMW-31R2, 4/2/2008	PDMW-31R2, 7/21/2008	PDMW-31R2, DUP, 7/21/2008	PDMW-31R2, 10/8/2008	PDMW-31R2, 12/4/2009	PDMW-31R2, 6/16/2010	PDMW-31R2, 12/15/2010	PDMW-31R2, 6/15/2011	PDMW-31R2, 12/7/2011	PDMW-31R2, 12072, 11/5/1997	PDMW-32P, 8/9/1999	PDMW-32P, 11/18/1999			
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result			
PAHs	ACENAPHTHENE	1	2000	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	1 U	1 U	1 U	
	ACENAPHTHYLENE	1.4	1	510	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	1 U	1 U	1 U	
	ANTHRACENE	0.2	0.2	5100	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	
	BENZ[O]ANTHRACENE	0.2	0.1	3.9	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	
	BENZ[O]APRYRENE	0.2	0.2	0.39	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	
	BENZ[O]B[FLUORANTHENE	0.2	0.2	0.65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	
	BENZ[O]G,H,IPERYLENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	0.5 U	NA	NA	
	BENZ[O]K[FLUORANTHENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	0.5 U	NA	NA	
	CHRYSENE	0.2	0.2	65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	
	DIBENZ[O]A,HANTHRACENE	--	0.3	--	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	1 U	NA	NA	
	FLUORANTHENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	
	FLUORENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	
	INDENO[1,2,3-CD]PYRENE	--	0.4	--	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	0.5 U	NA	NA	
	1-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA	NA	NA	
	2-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	NA	NA	NA	
	NAPHTHALENE	1	20	20	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	1 U	1 U	1 U	
	PHENANTHRENE	0.22	0.2	510	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	
	PYRENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	
	TOTAL PAHs	--	--	--	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	ND	ND	ND
	VOCs	BENZENE	1	5	31.2	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	1 U	1 U
ETHYLBENZENE		1	700	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	1 U	1 U	1 U
m-XYLENE		--	--	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1 U	1 U	
METHYLENE CHLORIDE		--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5 U	NA	NA
p-XYLENE		--	--	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1 U	1 U	
TOLUENE		1	1000	1900	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	1 U	1 U	1 U
XYLENES (TOTAL)		2	10000	--	ug/L	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA	NA	2 U	1 U	1 U
METHYL TERT BUTYL ETHER		--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U	10 U	NA	NA	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL BTEX		--	--	--	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	ND	ND	ND
ARSENIC		0.018	0.018	0.018	mg/L	0.15	0.18	0.25	0.14	0.23	0.12	0.17	0.19	0.2	0.081	0.12	0.072	0.072	0.012	0.019	0.019	0.01 U	0.02 U	0.02 U	0.036 U	0.018 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Metals, Total	BERYLLIUM	--	0.004	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	
	BORON	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	CADMIUM	--	0.005	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA
	CALCIUM METAL	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CHROMIUM	0.013	0.1	--	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	0.01 U	0.01 U	0.01 U	
	LEAD	0.007	0.015	0.015	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	NA	NA	NA	NA	NA	0.005 U	0.005 U	0.0067 U	
	MAGNESIUM	--	--	--	mg/L																												

Table 7
Summary of Historical Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location					PDMW-32R																								PDMW-33R												PDMW-33R2												PDMW-33T
Sample Date:					2/23/2000	5/16/2000	8/22/2000	1/9/2001	7/16/2001	2/5/2002	9/12/2002	2/6/2003	6/26/2003	1/30/2004	7/22/2004	3/8/2006	4/4/2008	7/22/2008	10/9/2008	12/7/2009	6/19/2010	6/16/2011	12/12/2013	6/4/2014	11/6/2014	5/19/2015	11/11/2015	9/10/2022	2/4/2003	6/25/2003	1/29/2004	7/22/2004	3/8/2006	4/4/2008	7/21/2008	10/9/2008	12/5/2009	6/17/2010	6/14/2011		12/11/2013	6/4/2014	11/4/2014	5/20/2015	11/11/2015	11/5/1997							
Sample Type:					Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Normal	Normal	Normal	Normal	Normal	Normal								
Sample ID:					PDMW-32R_2/23/2000	PDMW-32R_5/16/2000	PDMW-32R_8/22/2000	PDMW-32R_1/9/2001	PDMW-32R_7/16/2001	PDMW-32R_2/5/2002	PDMW-32R_9/12/2002	PDMW-32R_2/6/2003	PDMW-32R_6/26/2003	PDMW-32R_1/30/2004	PDMW-32R_7/22/2004	PDMW-32R_3/8/2006	PDMW-32R_4/4/2008	PDMW-32R_7/22/2008	PDMW-32R_10/9/2008	PDMW-32R_12/7/2009	PDMW-32R_6/19/2010	PDMW-32R_6/16/2011	PDMW-32R_12/12/2013	PDMW-32R_6/4/2014	PDMW-32R_11/6/2014	PDMW-32R_5/19/2015	PDMW-32R_11/11/2015	PDMW-32R_9/10/2022	PDMW-33R_2/4/2003	PDMW-33R_6/25/2003	PDMW-33R_1/29/2004	PDMW-33R_7/22/2004	PDMW-33R_3/8/2006	PDMW-33R2_4/4/2008	PDMW-33R2_7/21/2008	PDMW-33R2_10/9/2008	PDMW-33R2_12/5/2009	PDMW-33R2_6/17/2010	PDMW-33R2_6/14/2011	PDMW-33R2_12/11/2013	PDMW-33R2_6/4/2014	PDMW-33R2_11/4/2014	PDMW-33R2_5/20/2015	PDMW-33R2_11/11/2015	PDMW-33T_11/5/1997								
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result									
PAHs	ACENAPHTHENE	1	2000	--	ug/L	1 U	1 U	1 U	1 U	1 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.26	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	1 U							
	ACENAPHTHYLENE	1.4	1	510	ug/L	1 U	1 U	1 U	1 U	1 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	1 U							
	ANTHRACENE	0.2	0.2	5100	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	0.2 U							
	BENZO[A]ANTHRACENE	0.2	0.1	3.9	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	0.2 U							
	BENZO[A]PYRENE	0.2	0.2	0.39	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	0.2 U							
	BENZO[B]FLUORANTHENE	0.2	0.2	0.65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	0.2 U							
	BENZO[G,H]PERYLENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	0.5 U							
	BENZO[K]FLUORANTHENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	0.5 U							
	CHRYSENE	0.2	0.2	65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	0.2 U							
	DIBENZO[A,H]ANTHRACENE	--	0.3	--	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	1 U							
	FLUORANTHENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	0.5 U							
	FLUORENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	0.5 U							
	INDENO[1,2,3-CD]PYRENE	--	0.4	--	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	0.5 U							
	1-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.76 U	0.38 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.76 U	0.38 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	NA							
	2-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	NA							
	NAPHTHALENE	1	20	20	ug/L	1 U	1 U	1 U	1 U	1 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	1 U							
	PHENANTHRENE	0.22	0.2	510	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	NA	9.5 U	9.7 U	NA	NA	NA	0.2 U							
	PYRENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.19 U	0.19 U	0.19 U	NA	9.8 U	9.9 U	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U																					

Table 7
Summary of Historical Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location					PDMW-34T																PDMW-35P															
Sample Date:					11/6/1997	8/9/1999	11/17/1999	2/22/2000	5/15/2000	8/22/2000	1/10/2001	7/11/2001	2/6/2002	9/12/2002	10/9/2002	2/3/2003	6/27/2003	1/29/2004	7/23/2004	9/11/2002	2/6/2003	6/26/2003	1/30/2004	7/21/2004	3/9/2006		4/3/2008	7/19/2008	10/7/2008	12/7/2009	6/19/2010	6/15/2011				
Sample Type:					Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal				
Sample ID:					PDMW-34T_11/6/1997	PDMW-34T_8/9/1999	PDMW-34T_11/17/1999	PDMW-34T_2/22/2000	PDMW-34T_5/15/2000	PDMW-34T_8/22/2000	PDMW-34T_1/10/2001	PDMW-34T_7/11/2001	PDMW-34T_2/6/2002	PDMW-34T_9/12/2002	PDMW-34T_10/9/2002	PDMW-34T_2/3/2003	PDMW-34T_6/27/03	PDMW-34T_1/29/04	PDMW-34T_7/23/04	PDMW-35P_9/11/02	PDMW-35P_2/6/2003	PDMW-35P_6/26/03	PDMW-35P_1/30/04	PDMW-35P_7/21/04	PDMW-35P_Filtered_3/9/2006	PDMW-35P_Unfiltered_3/9/2006	PDMW-35P_4/3/2008	PDMW-35P_7/19/08	PDMW-35P_10/7/08	PDMW-35P_12/7/09	PDMW-35P_6/19/10	PDMW-35P_061511				
Method Group	Analyte	Background	Type 3 RRS	Type 4 RRS	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result					
PAHs	ACENAPHTHENE	1	2000	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA				
	ACENAPHTHYLENE	1.4	1	510	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA				
	ANTHRACENE	0.2	0.2	5100	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA			
	BENZO(A)ANTHRACENE	0.2	0.1	3.9	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA			
	BENZO(A)PYRENE	0.2	0.2	0.39	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA			
	BENZO(B)FLUORANTHENE	0.2	0.2	0.65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA			
	BENZO(G,H,I)PERYLENE	--	--	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA			
	BENZO(K)FLUORANTHENE	--	--	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA			
	CHRYSENE	0.2	0.2	65	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA		
	DIBENZO(A,H)ANTHRACENE	--	0.3	--	ug/L	1 U	NA	NA	NA	NA	NA	NA	NA	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA		
	FLUORANTHENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA		
	FLUORENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA		
	INDENO(1,2,3-CD)PYRENE	--	0.4	--	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA		
	1-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA		
	2-METHYLNAPHTHALENE	--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA		
	NAPHTHALENE	1	20	20	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA		
	PHENANTHRENE	0.22	0.2	510	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA		
	PYRENE	0.5	1000	--	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA		
	TOTAL PAHs	--	--	--	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	
	VOCs	BENZENE	1	5	31.2	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	1 U	1 U	NA		
ETHYLBENZENE		1	700	--	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	1 U	1 U	1 U	NA			
p,m-XYLENE		--	--	--	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
METHYLENE CHLORIDE		--	--	--	ug/L	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
o-XYLENE		--	--	--	ug/L	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
TOLUENE		1	1000	1000	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA	1 U	1.5 U	1 U	1 U	1 U	1 U	NA			
XYLENES (TOTAL)		2	10000	--	ug/L	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA		
METHYL TERT BUTYL ETHER		--	--	--	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U	NA	NA	10 U	NA			
TOTAL BTEX		--	--	--	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA		
ARSENIC		0.018	0.018	0.018	mg/L	0.01 U	0.029	0.017 U	0.019	0.021	0.031	0.02	0.037	0.028	0.038	0.01 U	0.022	0.037	0.028	0.049	NA	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.02 U	NA		
Metals, Total	BERYLLIUM	--	0.004	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
	BORON	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
	CADMIUM	--	0.005	--	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
	CALCIUM METAL	--	--	--	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
	CHROMIUM	0.010	0.1	--	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.018	0.01 U	0.01 U	NA	0.01 U	0.01 U</																			

Table 7
Summary of Historical Groundwater Analytical Results
HSI Site #10101, Hutchinson Island, GA

Location:					PDMW-36P																				PDMW-37P																				PDMW-38P																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Sample Date:					9/12/2002		10/9/2002		2/5/2003		6/24/2003		1/27/2004		7/21/2004		3/8/2006		4/2/2008		7/22/2008		10/7/2008		12/3/2009		6/15/2010		12/14/2010		6/14/2011		12/8/2011		9/13/2012		10/9/2012		2/5/2003		6/26/2003		1/29/2004		7/22/2004		3/8/2006		4/2/2008		7/22/2008		10/7/2008		12/2/2009		6/16/2010		6/14/2011		9/12/2002		2/5/2003		6/24/2003		1/27/2004		7/21/2004		3/8/2006		4/4/2008		7/22/2008		10/7/2008		12/2/2009																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Sample Type:					Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Dup	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal

Note:

- Shaded cell indicates comparison standard used in data evaluation.
- Highlighted cell indicates analysis result exceeds comparison criteria.

Red and dark teal: indicates analysis result exceeds background value.

Nitrate comparison standard based on the Maximum Contaminant Limit (MCL) established by the US EPA National Primary Drinking Water Regulations (NPDWR).

ND : No constituents detected above the laboratory minimum detection limit.

I: Indicates constituent was not detected above a value shown.

J: Indicates constituent was detected at an estimated value shown.

K: Indicates constituent was not detected at an estimated value shown.

Respective wells MW-38, PMW-8, PMW-10P, PMW-11P, PMW-147R, PMW-23R, PMW-31P, PMW-32P, PMW-23R, PMW-33R installed to replace wells MW-38, PMW-8, PMW-10P, PMW-11P, PMW-147R, PMW-23R, PMW-31P, PMW-32P, PMW-33R respectively.

Notes:

Shaded cell indicates comparison standard used in data evaluation.

Highlighted cell indicates analytical result exceeds comparison criteria.

Red shaded cell indicates analytical result exceeds background value.

- Nitrate comparison standard based on the Maximum Contaminant Level (MCL) established by the USEPA National Primary Drinking Water Regulations.

ND - No constituents detected above the laboratory minimum detection limit.

U: Indicates constituent was not detected above value shown.

J: Indicates constituent was detected at an estimated value.

UI: Indicates constituent was not detected at an estimated value shown.

Monitoring wells MW-3R, POMW-8R, POMW-10R, POMW-11R, POMW-147R, POMW-23R, POMW-31R2, POMW-32R, POMW-33R installed to replace wells MW-3, POMW-8T, POMW-10T, POMW-11T, POMW-14T, POMW-23T, POMW-30P, POMW-31R, POMW-32P respectively.

Notes:

-  Shaded cell indicates comparison standard used in data evaluation.
-  Highlighted cell indicates analytical result exceeds comparison criteria.
- ND and NDLCF** indicates analytical result exceeds background value.
- #** Nitrate comparison standard based on the Maximum Contaminant Level (MCL) established by the USEPA National Primary I
- ND** - No constituents detected above the laboratory minimum detection limit.
- I** indicates constituent was not detected above value shown.
- J** indicates constituent was detected at an estimated value.
- UJ** indicates constituent was not detected at an estimated value shown.

Monitoring wells MW-3R, PDMW-8R, PDMW-10R, PDMW-11R, PDMW-14TR, PDMW-23R, PDMW-31R2, PDMW-32R, PDMW-33 installed to replace wells MW-3, PDMW-8T, PDMW-10T, PDMW-11P, PDMW-14T, PDMW-23T, PDMW-30P, PDMW-31R, PDMW respectively.

Table 8 - XRF and Laboratory Results Generated During Metal-Impacted Soil Excavation Program

Area	Sample ID	Sample Date	Lead (XRF)	Lead (6010B) Type 3 RRS= 400 mg/kg	Arsenic (XRF)	Arsenic (6010B) Type 3 RRS= 38 mg/kg	Comment
Arsenic Area 1	As1A-E01-3"	15-Nov-06	59.9	53	21.3	44	Excavated
	AS1A-E02-3"	20-Nov-06	67.23	91	ND	25	Confirmed to Meet Type 3 RRS
	AS1A-E03-6"	29-Nov-06	81.8	110	14.12	20	Confirmed to Meet Type 3 RRS
	AS1A-E04-3"	7-Dec-06	NA	85	15	33	Confirmed to Meet Type 3 RRS
	AS1A-N01-3"	15-Nov-06	42.43	36	ND	11	Confirmed to Meet Type 3 RRS
	AS1A-N02-6"	29-Nov-06	108.95	250	16.95	110	Excavated
	AS1A-N05-6"	1-Dec-06	NA	170	13	47	Excavated
	AS1A-N06-3"	6-Dec-06	NA	420	52	97	Excavated
	AS1A-N07-3"	7-Dec-06	NA	180	17	39	Excavated
	AS1A-N07A-3"	13-Dec-06	NA	190	NA	33	Confirmed to Meet Type 3 RRS
	As1A-S01-3"	15-Nov-06	108.18	190	19.26	23	Confirmed to Meet Type 3 RRS
	AS1A-S02-1'	29-Nov-06	33.39	49	ND	5.1	Confirmed to Meet Type 3 RRS
	As1A-W01-3"	15-Nov-06	20.52	25	ND	5.3	Confirmed to Meet Type 3 RRS
	AS1A-W02-6"	29-Nov-06	16.88	21	ND	10	Confirmed to Meet Type 3 RRS
	AS1A-W03-3"	7-Dec-06	NA	100	41	41	Excavated
Lead Area 1A	AS1A-W04-3"	7-Dec-06	NA	31	ND	6	Confirmed to Meet Type 3 RRS
	AS1A-W06-3"	7-Dec-06	NA	73	35	32	Confirmed to Meet Type 3 RRS
	PB1A-E01-1'	16-Nov-06	ND	24	ND	NA	Confirmed to Meet Type 3 RRS
	PB1A-FL01-2'	16-Nov-06	ND	4.6	ND	NA	Confirmed to Meet Type 3 RRS
	PB1A-N01-1'	16-Nov-06	14.14	8.8	ND	NA	Confirmed to Meet Type 3 RRS
Lead Area 1B	PB1A-S01-1'	16-Nov-06	41.85	21	ND	NA	Confirmed to Meet Type 3 RRS
	PB1A-W01-1'	16-Nov-06	30.13	17	ND	NA	Confirmed to Meet Type 3 RRS
	PB1B-E01-1'	17-Nov-06	24.05	20	ND	<1.0	Confirmed to Meet Type 3 RRS
	PB1B-E02-1'	17-Nov-06	150.98	110	ND	2.6	Confirmed to Meet Type 3 RRS
	PB1B-FL01-2'	16-Nov-06	15.97	13	ND	<1.1	Confirmed to Meet Type 3 RRS
	PB1B-FL02-2'	17-Nov-06	19.83	6.1	ND	<1.0	Confirmed to Meet Type 3 RRS
	PB1B-FL03-2'	17-Nov-06	156.94	220	ND	12	Confirmed to Meet Type 3 RRS
	PB1B-FL04-2'	17-Nov-06	ND	6.1	ND	<1.0	Confirmed to Meet Type 3 RRS
	PB1B-FL05-2'	17-Nov-06	16.9	5	ND	<1.1	Confirmed to Meet Type 3 RRS
	PB1B-FL06-2'	17-Nov-06	36.2	37	ND	3.9	Confirmed to Meet Type 3 RRS
	PB1B-N01-1'	17-Nov-06	28.25	17	ND	1.5	Confirmed to Meet Type 3 RRS
	PB1B-N02-1'	17-Nov-06	14.58	29	ND	4	Confirmed to Meet Type 3 RRS
	PB1B-N03-1'	17-Nov-06	15.42	7.9	ND	<1.1	Confirmed to Meet Type 3 RRS
	PB1B-S01-1'	16-Nov-06	23.79	21	ND	<1.1	Confirmed to Meet Type 3 RRS
	PB1B-S02-1'	17-Nov-06	ND	5.9	ND	<0.95	Confirmed to Meet Type 3 RRS
	PB1B-S03-1'	17-Nov-06	109.75	190	ND	<0.95	Confirmed to Meet Type 3 RRS
	PB1B-W01-1'	16-Nov-06	7.69	4.5	ND	<1.0	Confirmed to Meet Type 3 RRS
	PB1B-W02-1'	17-Nov-06	9.25	3.8	ND	<0.89	Confirmed to Meet Type 3 RRS

Table 8 - XRF and Laboratory Results Generated During Metal-Impacted Soil Excavation Program

Area	Sample ID	Sample Date	Lead (XRF)	Lead (6010B) Type 3 RRS= 400 mg/kg	Arsenic (XRF)	Arsenic (6010B) Type 3 RRS= 38 mg/kg	Comment
Lead Area 2A	PB2A-E01-1'	16-Nov-06	18.61	32	ND	<0.91	Confirmed to Meet Type 3 RRS
	PB2A-E02-1'	16-Nov-06	42.98	44	ND	<1.0	Confirmed to Meet Type 3 RRS
	PB2A-FL01-2'	16-Nov-06	15.47	32	ND	<0.99	Confirmed to Meet Type 3 RRS
	PB2A-FL02-2'	16-Nov-06	15.13	13	ND	<1.0	Confirmed to Meet Type 3 RRS
	PB2A-N01-1'	16-Nov-06	70.78	99	ND	4.2	Confirmed to Meet Type 3 RRS
	PB2A-S01-1'	16-Nov-06	17.75	4	ND	1.2	Confirmed to Meet Type 3 RRS
	PB2A-W01-1'	16-Nov-06	45.12	110	ND	3.2	Confirmed to Meet Type 3 RRS
Lead Area 2B	PB2A-W02-1'	16-Nov-06	31.42	24	ND	<1.1	Confirmed to Meet Type 3 RRS
	PB2B-E01-1'	16-Nov-06	26.37	25	ND	NA	Confirmed to Meet Type 3 RRS
	PB2B-FL01-2'	16-Nov-06	26.92	61	ND	NA	Confirmed to Meet Type 3 RRS
	PB2B-N01-1'	16-Nov-06	13.55	25	ND	NA	Confirmed to Meet Type 3 RRS
	PB2B-S01-1'	16-Nov-06	69.06	60	ND	NA	Confirmed to Meet Type 3 RRS
Lead Area 2C	PB2B-W01-1'	16-Nov-06	87.55	110	ND	NA	Confirmed to Meet Type 3 RRS
	PB2C-E01-1'	16-Nov-06	27.02	7.9	ND	NA	Confirmed to Meet Type 3 RRS
	PB2C-FL01-2'	16-Nov-06	76.15	63	ND	NA	Confirmed to Meet Type 3 RRS
	PB2C-W01-1'	16-Nov-06	65.89	41	ND	NA	Confirmed to Meet Type 3 RRS
	PB2C-N01-1'	16-Nov-06	191.97	190	ND	NA	Confirmed to Meet Type 3 RRS
Lead Area 3A	PB2C-S01-1'	16-Nov-06	161.9	250	ND	NA	Confirmed to Meet Type 3 RRS
	PB3A-E01-6"	17-Nov-06	232.4	220	ND	NA	Confirmed to Meet Type 3 RRS
	PB3A-FL01-1'	17-Nov-06	223.38	98	ND	NA	Confirmed to Meet Type 3 RRS
	PB3A-N01-6"	17-Nov-06	546.11	NA	ND	NA	Excavated
	PB3A-N02-6"	20-Nov-06	57.27	120	ND	NA	Confirmed to Meet Type 3 RRS
	PB3A-S01-6"	17-Nov-06	208.18	270	ND	NA	Confirmed to Meet Type 3 RRS
	PB3A-W01-6"	17-Nov-06	1030.91	NA	ND	NA	Excavated
	PB3A-W02-6"	20-Nov-06	799.78	NA	ND	NA	Excavated
	PB3A-W03-6"	20-Nov-06	10.3	8.6	ND	<.97	Confirmed to Meet Type 3 RRS

Table 8 - XRF and Laboratory Results Generated During Metal-Impacted Soil Excavation Program

Area	Sample ID	Sample Date	Lead (XRF)	Lead (6010B) Type 3 RRS= 400 mg/kg	Arsenic (XRF)	Arsenic (6010B) Type 3 RRS= 38 mg/kg	Comment
Lead Area 3B	PB3B-E01-6"	20-Nov-06	173.05	380	ND	4	Confirmed to Meet Type 3 RRS
	PB3B-E02-6"	20-Nov-06	181.38	350	ND	1.5	Confirmed to Meet Type 3 RRS
	PB3B-FL01-1'	20-Nov-06	2714.07	NA	81.47	NA	Excavated
	PB3B-FL02-1'	20-Nov-06	33.92	130	ND	<0.98	Confirmed to Meet Type 3 RRS
	PB3B-FL03-1'	20-Nov-06	257.85	NA	ND	NA	Excavated
	PB3B-FL04-1'	20-Nov-06	84.64	440	ND	NA	Excavated
	PB3B-FL05-1'	20-Nov-06	202.01	240	ND	2.3	Confirmed to Meet Type 3 RRS
	PB3B-FL-06-1'	20-Nov-06	28.7	6.4	ND	<1	Confirmed to Meet Type 3 RRS
	PB3B-FL07-2'	28-Nov-06	8.22	4.9	ND	<1.3	Confirmed to Meet Type 3 RRS
	PB3B-FL08-2'	28-Nov-06	ND	1.2	ND	<1.1	Confirmed to Meet Type 3 RRS
	PB3B-FL09-2'	28-Nov-06	7.36	2.3	ND	<1.2	Confirmed to Meet Type 3 RRS
	PB3B-N01-6"	20-Nov-06	414.1	NA	ND	NA	Excavated
	PB3B-N02-6"	20-Nov-06	868.5	NA	ND	NA	Excavated
	PB3B-N03-3"	20-Nov-06	321.16	NA	ND	NA	Excavated
	PB3B-N04-1'	28-Nov-06	226.07	300	ND	7.4	Confirmed to Meet Type 3 RRS
	PB3B-N05-1'	28-Nov-06	309.4	NA	19.57	NA	Excavated
	PB3B-N06-1'	28-Nov-06	8.78	7.7	ND	2.1	Confirmed to Meet Type 3 RRS
	PB3B-N07-1'	28-Nov-06	18.56	18	ND	<0.94	Confirmed to Meet Type 3 RRS
	PB3B-S01-6"	20-Nov-06	1347.13	NA	44.13	NA	Excavated
	PB3B-S02-6"	20-Nov-06	528.24	NA	ND	NA	Excavated
	PB3B-S03-6"	20-Nov-06	191.99	270	ND	1.3	Confirmed to Meet Type 3 RRS
	PB3B-S04-1'	28-Nov-06	ND	9.3	ND	<0.99	Confirmed to Meet Type 3 RRS
	PB3B-S05-1'	28-Nov-06	9.64	19	ND	<1.0	Confirmed to Meet Type 3 RRS
	PB3B-W01-6"	20-Nov-06	18.55	5.6	ND	<0.97	Confirmed to Meet Type 3 RRS
	PB3B-W02-6"	20-Nov-06	523.44	NA	28.9	NA	Excavated
	PB3B-W03-1'	28-Nov-06	16.02	22	ND	<1.1	Confirmed to Meet Type 3 RRS
Lead Area 4A	PB4A-E01-6"	16-Nov-06	341.91	NA	20.61	NA	Excavated
	PB4A-E02-6"	16-Nov-06	202.99	280	ND	9.5	Confirmed to Meet Type 3 RRS
	PB4A-E03-6"	28-Nov-06	149.31	200	ND	7.3	Confirmed to Meet Type 3 RRS
	PB4A-FL01-1'	16-Nov-06	66.6	220	ND	7.1	Confirmed to Meet Type 3 RRS
	PB4A-N01-6"	16-Nov-06	130.76	390	ND	14	Confirmed to Meet Type 3 RRS
	PB4A-S01-6"	16-Nov-06	288.71	NA	ND	NA	Excavated
	PB4A-S02-6"	16-Nov-06	383.85	NA	46.34	NA	Excavated
	PB4A-S03-6"	16-Nov-06	199.09	580	ND	NA	Excavated
	PB4A-S04-6"	27-Nov-06	486.83	NA	29.38	NA	Excavated
	PB4A-S05-6"	27-Nov-06	828.18	NA	35.9	NA	Excavated
	PB4A-S06-6"	27-Nov-06	252.27	270	ND	6.5	Confirmed to Meet Type 3 RRS
	PB4A-W01-6"	16-Nov-06	207.49	330	ND	5.3	Confirmed to Meet Type 3 RRS
	PB4A-W02-6"	28-Nov-06	236.89	320	35.64	22	Confirmed to Meet Type 3 RRS

Table 8 - XRF and Laboratory Results Generated During Metal-Impacted Soil Excavation Program

Area	Sample ID	Sample Date	Lead (XRF)	Lead (6010B) Type 3 RRS= 400 mg/kg	Arsenic (XRF)	Arsenic (6010B) Type 3 RRS= 38 mg/kg	Comment
Lead Area 5A	PB5A-E01-6"	14-Nov-06	54.7	49	ND	NA	Confirmed to Meet Type 3 RRS
	PB5A-FL01-1'	14-Nov-06	59.82	70	ND	NA	Excavated
	PB5A-FL02-2'	5-Feb-08	NA	74	NA	NA	Confirmed to Meet Type 3 RRS
	PB5A-N01-6"	14-Nov-06	22.68	28	ND	NA	Confirmed to Meet Type 3 RRS
	PB5A-S01-6"	14-Nov-06	85.21	62	ND	NA	Confirmed to Meet Type 3 RRS
	PB5A-W01-6"	14-Nov-06	50.37	37	ND	NA	Confirmed to Meet Type 3 RRS
Lead Area 5B	PB5B-E01-6"	15-Nov-06	61.68	85	ND	NA	Confirmed to Meet Type 3 RRS
	PB5B-FL01-1'	15-Nov-06	299.72	NA	ND	NA	Excavated
	PB5B-FL02-2'	15-Nov-06	14.51	26	ND	NA	Confirmed to Meet Type 3 RRS
	PB5B-N01-6"	15-Nov-06	13.56	10	ND	NA	Confirmed to Meet Type 3 RRS
	PB5B-S01-6"	15-Nov-06	28.59	120	ND	NA	Confirmed to Meet Type 3 RRS
	PB5B-W01-6"	15-Nov-06	464.96	NA	ND	NA	Excavated
	PB5B-W02-1'	15-Nov-06	262.01	240	19.03	NA	Confirmed to Meet Type 3 RRS
Lead Area 5C	PB5C-E01-6"	15-Nov-06	311.63	NA	ND	NA	Excavated
	PB5C-E02-1'	15-Nov-06	87.73	100	ND	4.5	Confirmed to Meet Type 3 RRS
	PB5C-FL01-1'	15-Nov-06	300.21	NA	ND	NA	Excavated
	PB5C-FL02-2'	15-Nov-06	ND	13	ND	1.2	Confirmed to Meet Type 3 RRS
	PB5C-N01-6"	15-Nov-06	438.93	NA	28.94	NA	Excavated
	PB5C-N02-1'	15-Nov-06	130.1	300	ND	11	Confirmed to Meet Type 3 RRS
	PB5C-S01-6"	15-Nov-06	218.38	210	ND	4.9	Confirmed to Meet Type 3 RRS
	PB5C-W01-6"	15-Nov-06	255.68	1400	23.6	NA	Excavated
	PB5C-W02-1'	27-Nov-06	18.29	14	ND	<0.96	Confirmed to Meet Type 3 RRS

Notes: ND = less than detection limit of XRF device
 NA = Not Analyzed
 XRF = x-ray fluorescence mg/kg = milligram/kilogram
 RRS = Risk Reduction Standard
 All units are in mg/Kg

Table 9 - Metals-Impacted Soil Excavation Confirmation Analytical Results

Area	Sample ID	Date	Arsenic (6010B) Type 3 RRS=38 mg/kg	Lead (6010B) Type 3 RRS=400 mg/kg
Arsenic Area 1	AS1A-E02-3"	20-Nov-06	25	91
	AS1A-E03-6"	29-Nov-06	20	110
	AS1A-E04-3"	7-Dec-06	18	71
	AS1A-N01-3"	15-Nov-06	11	36
	AS1A-N07A-3"	13-Dec-08	33	190
	AS1A-S01-3"	15-Nov-06	23	190
	AS1A-S02-1'	29-Nov-06	5.1	49
	AS1A-W01-3"	15-Nov-06	5.3	25
	AS1A-W02-6"	29-Nov-06	10	21
	AS1A-W04-3"	7-Dec-06	6	31
	AS1A-W06-3"	7-Dec-06	32	73
Lead Area 1A	PB1A-E01-1'	16-Nov-06	NA	24
	PB1A-FL01-2'	16-Nov-06	NA	4.6
	PB1A-N01-1'	16-Nov-06	NA	8.8
	PB1A-S01-1'	16-Nov-06	NA	21
	PB1A-W01-1'	16-Nov-06	NA	17
Lead Area 1B	PB1B-E01-1'	17-Nov-06	<1.0	20
	PB1B-E02-1'	17-Nov-06	2.6	110
	PB1B-FL01-1'	16-Nov-06	<1.1	13
	PB1B-FL02-2'	17-Nov-06	<1.0	6.1
	PB1B-FL03-2'	17-Nov-06	12	220
	PB1B-FL04-2'	17-Nov-06	<1.0	6.1
	PB1B-FL05-2'	17-Nov-06	<1.1	5
	PB1B-FL06-2'	17-Nov-06	3.9	37
	PB1B-N01-1'	17-Nov-06	1.5	17
	PB1B-N02-1'	17-Nov-06	4	29
	PB1B-N03-1'	17-Nov-06	<1.1	7.9
	PB1B-S01-1'	16-Nov-06	<1.1	21
	PB1B-S02-1'	17-Nov-06	<0.95	5.9
	PB1B-S03-1'	17-Nov-06	<0.95	190
	PB1B-W01-1	16-Nov-06	<1.0	4.5
	PB1B-W02-1'	17-Nov-06	<0.89	3.8
Lead Area 2A	PB2A-E01-1'	16-Nov-06	<0.91	32
	PB2A-E02-1'	16-Nov-06	<1.0	44
	PB2A-FL01-2'	16-Nov-06	<0.99	32
	PB2A-FL02-2'	16-Nov-06	<1.0	13
	PB2A-N01-1'	16-Nov-06	4.2	99
	PB2A-S01-1'	16-Nov-06	1.2	4
	PB2A-W01-1'	16-Nov-06	3.2	110
	PB2A-W02-1'	16-Nov-06	<1.1	24

Table 9 - Metals-Impacted Soil Excavation Confirmation Analytical Results

Area	Sample ID	Date	Arsenic (6010B) Type 3 RRS=38 mg/kg	Lead (6010B) Type 3 RRS=400 mg/kg
Lead Area 2B	PB2B-E01-1'	16-Nov-06	NA	25
	PB2B-FL01-2'	16-Nov-06	NA	61
	PB2B-N01-1'	16-Nov-06	NA	25
	PB2B-S01-1'	16-Nov-06	NA	60
	PB2B-W01-1'	16-Nov-06	NA	110
Lead Area 2C	PB2C-E01-1'	16-Nov-06	NA	7.9
	PB2C-FL01-2'	16-Nov-06	NA	63
	PB2C-W01-1'	16-Nov-06	NA	41
	PB2C-N01-1'	16-Nov-06	NA	190
	PB2C-S01-1'	16-Nov-06	NA	250
Lead Area 3A	PB3A-E01-6"	17-Nov-06	NA	220
	PB3A-FL01-1'	17-Nov-06	NA	98
	PB3A-N02-6"	20-Nov-06	NA	120
	PB3A-S01-6"	17-Nov-06	NA	270
	PB3A-W03-6"	20-Nov-06	<.97	8.6
Lead Area 3B	PB3B-E01-6"	20-Nov-06	4	380
	PB3B-E02-6"	20-Nov-06	1.5	350
	PB3B-FL02-1'	20-Nov-06	<0.98	130
	PB3B-FL05-1'	20-Nov-06	2.3	240
	PB3B-FL-06-1'	20-Nov-06	<1	6.4
	PB3B-FL07-2'	28-Nov-06	<1.3	4.9
	PB3B-FL08-2'	28-Nov-06	<1.1	1.2
	PB3B-FL09-2'	28-Nov-06	<1.2	2.3
	PB3B-N04-1'	28-Nov-06	7.4	300
	PB3B-N06-1'	28-Nov-06	2.1	7.7
	PB3B-N07-1'	28-Nov-06	<0.94	18
	PB3B-S03-6"	20-Nov-06	1.3	270
	PB3B-S04-1'	28-Nov-06	<0.99	9.3
	PB3B-S05-1'	28-Nov-06	<1.0	19
	PB3B-W01-6"	20-Nov-06	<0.97	5.6
	PB3B-W03-1'	28-Nov-06	<1.1	22
Lead Area 4A	PB4A-E02-6"	16-Nov-06	9.5	280
	PB4A-E03-6"	28-Nov-06	7.3	200
	PB4A-FL01-1'	16-Nov-06	7.1	220
	PB4A-N01-6"	16-Nov-06	14	390
	PB4A-S06-6"	27-Nov-06	6.5	270
	PB4A-W01-6"	16-Nov-06	5.3	330
	PB4A-W02-6"	28-Nov-06	22	320

Table 9 - Metals-Impacted Soil Excavation Confirmation Analytical Results

Area	Sample ID	Date	Arsenic (6010B) Type 3 RRS=38 mg/kg	Lead (6010B) Type 3 RRS=400 mg/kg
Lead Area 5A	PB5A-E01-6"	14-Nov-06	NA	49
	PB5A-FL02-(18-24")	5-Feb-08	NA	74
	PB5A-N01-6"	14-Nov-06	NA	28
	PB5A-S01-6"	14-Nov-06	NA	62
	PB5A-W01-6"	14-Nov-06	NA	37
Lead Area 5B	PB5B-E01-6"	15-Nov-06	NA	85
	PB5B-FL02-2'	15-Nov-06	NA	26
	PB5B-N01-6"	15-Nov-06	NA	10
	PB5B-S01-6"	15-Nov-06	NA	120
	PB5B-W02-1'	15-Nov-06	NA	240
Lead Area 5C	PB5C-E02-1'	15-Nov-06	4.5	100
	PB5C-FL02-2'	15-Nov-06	1.2	13
	PB5C-N02-1'	15-Nov-06	11	300
	PB5C-S01-6"	15-Nov-06	4.9	210
	PB5C-W02-1'	27-Nov-06	<0.96	14

Notes: ND = less than detection limit of XRF device
 NA = Not Analyzed
 All units are in mg/Kg

Table 10 - Summary of PAH Soil Confirmation Testing Results

Compound	Type 1/3 RRS	PDMW-14T North Wall A-1 (1 FT BGS)	PDMW-14T North Wall B-1 (1 FT BGS)	PDMW-14T East Wall A-1 (1 Ft BGS)	PDMW-14T East Wall B-1 (1 FT BGS)	PDMW-14T South Wall A-1 (1 FT BGS)	PDMW-14T South Wall B-1 (1 FT BGS)	PDMW-14T West Wall A-1 (1 FT BGS)	PDMW-14T West Wall B-1 (1 FT BGS)
Date		3/5/2007	3/5/2007	3/5/2007	3/5/2007	3/5/2007	3/5/2007	2/21/2007	2/22/2007
Acenaphthene	300	0.075 U	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.0078 U	0.074 U
Acenaphthylene	130	0.075 U	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.0078 U	0.074 U
Anthracene	500	4.3	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.67	0.074 U
Benzo[a]anthracene	5	0.075 U	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.0078 U	0.074 U
Benzo[a]pyrene	1.6	0.075 U	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.0078 U	0.074 U
Benzo[b]fluoranthene	5	0.075 U	0.085 U	0.0076 U	0.830 UM	1.100 U	0.850 U	0.0078 U	0.074 U
Benzo[g,h,i]perylene	500	0.083	0.1	0.0076 U	0.830 U	1.100 U	0.850 U	0.0078 U	0.074 U
Benzo[k]fluoranthene	5	0.075 U	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.0078 U	0.074 U
Chrysene	5	0.11	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.023	0.074 U
Dibenz(a,h)anthracene	5	0.075 U	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.0078 U	0.074 U
Fluoranthene	500	0.15	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.026	0.074 U
Fluorene	360	0.23	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.057	0.074 U
Indeno[1,2,3-cd]pyrene	5	0.075 U	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.0078 U	0.074 U
2-Methylnaphthalene	--	0.087	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.0078 U	0.074 U
1-Methylnaphthalene	--	0.075 U	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.016	0.074 U
Naphthalene	100	0.11	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.018	0.074 U
Phenanthrene	110	0.38	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.075	0.074 U
Pyrene	500	0.15	0.085 U	0.0076 U	0.830 U	1.100 U	0.850 U	0.037	0.074 U

Notes:

All values in mg/Kg

U = Indicates the analyte was analyzed for but not detected. M = Manual integrated compound.

Table 11 - Excavation Area Summary

Excavation Area Name	Excavation Depth Range (feet bgs)	Area (Ft ²)
Petroleum Source Material Areas		
PSM Area 2	2-4	123,750
PSM Area 3	2-4	52,708
PSM Area 4	3-5	33,342
PSM Area 5	2-4	5,625
PSM Area 6	0-4	62,383
PSM Area 7	4-6	2,178
PSM Area 8	2-3	460
PSM Area 9	2-3	1,350
PSM Area 10	1-4	21,276
PSM Area 11	2-5	7,740
PSM Area 12	2-8	10,339
PSM Area 13	2-5	7,913
Metals Impacted Areas		
Arsenic Area 1A	0-4	2,750
Lead Area 1A-B	0-3	2,394
Lead Area 2A-C	0-2	969
Lead Area 3A-B	0-1.5	2,372
Lead Area 4A	0-1	750
Lead Area 5A-C	0-1	1,257

Table 12
Summary of Historical Surface Water Testing Results

Sample ID: Date Collected: Tide Stage:	Units	Samples Collected from Location Upstream SW																			
		Canal - Up 11/07/97 Low	SW1 Up 11/17/99 Low	SW1 Up-High 11/17/99 High	SW1-High 02/25/00 High	SW1-Low 02/25/00 Low	SW1-HIGH 05/16/00 High	SW1-LOW 05/16/00 Low	SW1-HIGH 08/22/00 High	SW1-LOW 08/22/00 Low	SW1-HIGH 01/09/01 High	SW1-LOW 01/09/01 Low	SW1-HIGH 07/16/01 High	SW1-Low 07/16/01 Low	SW1-High 02/04/02 High	SW1-Low 02/05/02 Low	SW UPSTREAM 09/12/02 High	SW-UPSTREAM 02/07/03 Low	SW-UPSTREAM 06/26/03 Low	SW Upstream 01/27/04 High	SW-UPSTREAM 07/23/04 High
PAHs																					
1-Methylnaphthalene	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
2-Methylnaphthalene	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Acenaphthene	ug/L	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Acenaphthylene	ug/L	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Anthracene	ug/L	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Benzo(a)anthracene	ug/L	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Benzo(a)pyrene	ug/L	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Benzo(b)fluoranthene	ug/L	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Benzo(g,h,i)perylene	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Benzo(k)fluoranthene	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Chrysene	ug/L	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Dibenz(a,h)anthracene	ug/L	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Fluoranthene	ug/L	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2
Fluorene	ug/L	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Indeno(1,2,3-cd)pyrene	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Naphthalene	ug/L	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.2 U
Phenanthrene	ug/L	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.63
Pyrene	ug/L	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U [0.2 U]	0.21
Total PAHs	ug/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	NA	ND	ND [ND]	ND	ND [ND]	1.04
Volatile Organic Compounds																					
Benzene	ug/L	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U [1 U]	1 U	1 U [1 U]	1 U
Ethylbenzene	ug/L	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U [1 U]	1 U	1 U [1 U]	1 U
m&p-Xylene	ug/L	NA	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	1 U	NA	1 U	NA	NA	NA	NA	NA	NA	
o-Xylene	ug/L	NA	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	1 U	NA	1 U	NA	NA	NA	NA	NA	NA	
Toluene	ug/L	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U [1 U]	1 U	1 U [1 U]	1 U
Xylenes (total)	ug/L	2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U [2 U]	2 U	2 U [2 U]	2 U
Total BTEX	ug/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND	ND	NA	ND	ND [ND]	ND	ND [ND]	ND
Metals																					
Arsenic	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U [0.01 U]	0.01 U	0.01 U [0.01 U]	0.01 U
Beryllium	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Cadmium	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U [0.01 U]	0.01 U	0.02 [0.01 U]	0.01 U
Lead	mg/L	0.005 U	0.005 U	0.005 U	0.0073 U	0.005 U	0.005 U	0.01	0.015 U	0.015 U	0.005 U	0.005 U	0.005 U	0.005 U	0.023	0.005 U	0.005 U	0.005 U [0.0057]	0.0064	0.02 [0.005 U]	0.005 U
Mercury	mg/L	0.0002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nickel	mg/L	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U [0.04 U]	0.04 U	0.04 U [0.04 U]	0.04 U
Zinc	mg/L	0.02 U	0.02 U	0.02 U	0.11	0.093	0.02 U	0.081	0.072	0.14	0.07	0.02 U	0.11	0.05	0.12	0.06	0.026	0.044 [0.043]	0.044	0.15 [0.082]	0.02 U
Metals-Filtered																					
Arsenic	mg/L	NA	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium	mg/L	NA	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Lead	mg/L	NA	0.005 U	0.005 U	0.005 U	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	NA	
Nickel	mg/L	NA	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc	mg/L	NA	0.02 U	0.02 U	0.049	0.071	NA	0.047	NA	0.03	0.039	NA	0.028	0.024	0.028	0.02 U	NA	NA	NA	NA	
Miscellaneous																					
Ammonia-N	mg/L	0.36	0.84	0.42	4.1	2.6	0.36	1.3	0.26	1.4	1.8	0.76	0.21	1.8	0.94	NA	0.14	2.6 [2.7]	0.92	3.5 [3.9]	0.33

- Notes:**
- 1) NA = Analyte was not analyzed.
 - 2) ND = Not Detected
 - 3) U = Indicates result value is below the laboratory quantitation limit.
 - 4) Total BTEX and Total PAHs were calculated as the sum of detected results where at least one of the analytes was detected, and reported as Not Detected (ND) in cases where all analytes were below their respective laboratory quantitation limits.
 - 5) [value] indicates results of field duplicate sample

Table 12
Summary of Historical Surface Water Testing Results

Sample ID: Date Collected: Tide Stage:	Units	Samples Collected from Location Downstream SW													
		Canal - Down 11/08/97 Low	SW1 Down 11/17/99 Low	SW1 Down-High 11/17/99 High	SW2-High 02/25/00 High	SW2-Low 02/25/00 Low	SW2-HIGH 05/16/00 High	SW2-LOW 05/16/00 Low	SW2-HIGH 08/22/00 High	SW2-LOW 08/22/00 Low	SW2-HIGH 01/09/01 High	SW2-LOW 01/09/01 Low	SW2-HIGH 07/16/01 High	SW2-Low 07/16/01 Low	SW2-High 02/04/02 High
PAHs															
1-Methylnaphthalene	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	ug/L	1 U	1 U	1 U	NA	1 U	NA	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
Acenaphthylene	ug/L	1 U	1 U	1 U	NA	1 U	NA	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
Anthracene	ug/L	0.2 U	0.2 U	0.2 U	NA	0.2 U	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(a)anthracene	ug/L	0.2 U	0.2 U	0.2 U	NA	0.2 U	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(a)pyrene	ug/L	0.2 U	0.2 U	0.2 U	NA	0.2 U	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(b)fluoranthene	ug/L	0.2 U	0.2 U	0.2 U	NA	0.2 U	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(g,h,i)perylene	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	ug/L	0.2 U	0.2 U	0.2 U	NA	0.2 U	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibenz(a,h)anthracene	ug/L	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	ug/L	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fluorene	ug/L	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Indeno(1,2,3-cd)pyrene	ug/L	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	ug/L	1 U	1 U	1 U	NA	1 U	NA	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
Phenanthrene	ug/L	0.2 U	0.2 U	0.2 U	NA	0.2 U	NA	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Pyrene	ug/L	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Total PAHs	ug/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
Volatile Organic Compounds															
Benzene	ug/L	1 U	1 U	1 U	NA	1 U	NA	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/L	1 U	1 U	1 U	NA	1 U	NA	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
m&p-Xylene	ug/L	NA	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	1 U	1 U	1 U	NA
o-Xylene	ug/L	NA	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	1 U	1 U	1 U	NA
Toluene	ug/L	1 U	1 U	1 U	NA	1 U	NA	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	ug/L	2 U	NA	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	NA	2 U
Total BTEX	ug/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
Metals															
Arsenic	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Beryllium	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/L	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Lead	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.015 U	0.0087	0.005 U	0.005 U	0.005 U	0.0069	0.005 U
Mercury	mg/L	0.0002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	mg/L	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Zinc	mg/L	0.052	0.02 U	0.02 U	0.022	0.02 U	0.02 U	0.025	0.072	0.025	0.024	0.02 U	0.027	0.038	0.02 U
Metals-Filtered															
Arsenic	mg/L	NA	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/L	NA	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/L	NA	0.005 U	0.005 U	0.005 U	0.005 U	NA	NA	NA	0.005 U	NA	NA	NA	0.005 U	NA
Nickel	mg/L	NA	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/L	NA	0.02 U	0.02 U	0.02 U	0.02 U	NA	0.02 U	NA	0.02 U	0.032	NA	0.053	0.02	NA
Miscellaneous															
Ammonia-N	mg/L	0.93	6.2	0.48	0.64	5.2	0.64	1.8	0.18	2.2	0.17	2.8	0.82	4.3	0.12

- Notes:**
- 1) NA = Analyte was not analyzed.
 - 2) ND = Not Detected
 - 3) U = Indicates result value is below
 - 4) Total BTEX and Total PAHs were where at least one of the analytes \ (ND) in cases where all analytes we quantitation limits.
 - 5) [value] indicates results of field dup

Table 12
Summary of Historical Surface Water Testing Results

Sample ID: Date Collected: Tide Stage:	Units	Samples Collected from Location Downstream SW				
		SW DOWNSTREAM 09/12/02 High	SW-DOWNSTREAM 02/07/03 Low	SW DOWNSTREAM 06/25/03 Low	SW Downstream 01/27/04 High	SW-Downstream 07/22/04 High
PAHs						
1-Methylnaphthalene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
2-Methylnaphthalene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Acenaphthene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Acenaphthylene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Anthracene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Benzo(a)anthracene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Benzo(a)pyrene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Benzo(b)fluoranthene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Benzo(g,h,i)perylene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Benzo(k)fluoranthene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Chrysene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Dibenz(a,h)anthracene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Fluoranthene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Fluorene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Indeno(1,2,3-cd)pyrene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Naphthalene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Phenanthrene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Pyrene	ug/L	0.2 U	0.2 U	0.2 U [0.2 U]	0.2 U	0.2 U
Total PAHs	ug/L	ND	ND	ND [ND]	ND	ND
Volatile Organic Compounds						
Benzene	ug/L	1 U	1 U	1 U [1 U]	1 U	1 U
Ethylbenzene	ug/L	1.3	1 U	1 U [1 U]	1 U	1 U
m&p-Xylene	ug/L	NA	NA	NA	NA	NA
o-Xylene	ug/L	NA	NA	NA	NA	NA
Toluene	ug/L	2	1 U	1 U [1 U]	1 U	1 U
Xylenes (total)	ug/L	7.2	2 U	2 U [2 U]	2 U	2 U
Total BTEX	ug/L	10.5	ND	ND [ND]	ND	ND
Metals						
Arsenic	mg/L	0.01 U	0.01 U	0.01 U [0.01 U]	0.01 U	0.01 U
Beryllium	mg/L	NA	NA	NA	NA	NA
Cadmium	mg/L	NA	NA	NA	NA	NA
Chromium	mg/L	0.01 U	0.01 U	0.01 U [0.01 U]	0.01 U	0.01 U
Lead	mg/L	0.005 U	0.005 U	0.0075 [0.0083]	0.005 U	0.005 U
Mercury	mg/L	NA	NA	NA	NA	NA
Nickel	mg/L	0.04 U	0.04 U	0.04 U [0.04 U]	0.04 U	0.04 U
Zinc	mg/L	0.02 U	0.02 U	0.032 [0.027]	0.13	0.02 U
Metals-Filtered						
Arsenic	mg/L	NA	NA	NA	NA	NA
Chromium	mg/L	NA	NA	NA	NA	NA
Lead	mg/L	NA	NA	NA	NA	NA
Nickel	mg/L	NA	NA	NA	NA	NA
Zinc	mg/L	NA	NA	NA	NA	NA
Miscellaneous						
Ammonia-N	mg/L	0.57	5.6	3 [3]	1.1	0.32

- Notes:
- 1) NA = Analyte was not analyzed.
 - 2) ND = Not Detected
 - 3) U = Indicates result value is below
 - 4) Total BTEX and Total PAHs were where at least one of the analytes (ND) in cases where all analytes were quantitation limits.
 - 5) [value] indicates results of field duplicate

Table 13 - Summary of 2013-2015 Surface Water Analytical Results

Sample ID:		SW-1								SW-2							
Date Collected:		12/13/13		06/05/14		11/06/14		05/21/15		12/13/13		06/05/14		11/06/14		05/21/15	
Tide Stage:	Units	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
Polycyclic Aromatic Hydrocarbons																	
1-Methylnaphthalene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
2-Methylnaphthalene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Acenaphthene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Acenaphthylene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Anthracene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Benzo(a)anthracene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Benzo(a)pyrene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Benzo(b)fluoranthene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Benzo(g,h,i)perylene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Chrysene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Dibenz(a,h)anthracene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Fluoranthene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Fluorene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Naphthalene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Phenanthrene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Pyrene	ug/L	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA	9.5 U	NA	9.7 U	9.5 U	NA	NA	NA	NA
Total PAHs	ug/L	ND	ND	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	NA	NA	NA	NA
Volatile Organic Compounds																	
Benzene	ug/L	1 U	1 U	1 U	1 U	NA	NA	NA	NA	1 U	NA	1 U	1 U	NA	NA	NA	NA
Ethylbenzene	ug/L	1 U	1 U	1 U	1 U	NA	NA	NA	NA	1 U	NA	1 U	1 U	NA	NA	NA	NA
Toluene	ug/L	1 U	1 U	1 U	1 U	NA	NA	NA	NA	1 U	NA	1 U	1 U	NA	NA	NA	NA
Xylenes (total)	ug/L	2 U	2 U	2 U	2 U	NA	NA	NA	NA	2 U	NA	2 U	2 U	NA	NA	NA	NA
Total BTEX	ug/L	ND	ND	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	NA	NA	NA	NA
Dissolved Metals																	
Arsenic	mg/L	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA
Chromium	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA
Lead	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA
Nickel	mg/L	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	NA	NA	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	NA	NA
Zinc	mg/L	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA
Miscellaneous																	
Alkalinity	mg/L	NA	NA	NA	NA	88	62	77	39	NA	NA	NA	NA	87	62	130	39
Ammonia-N	mg/L	0.30	0.25	1.4	0.44	0.29	0.16	0.62	0.41	0.29	0.053	1.6	0.12	0.40	0.20	1.5	0.52
Nitrite	mg/L	NA	NA	NA	NA	NA	NA	0.050 U	0.050 U	NA	NA	NA	NA	NA	NA	0.085	0.050 U
Nitrate	mg/L	0.21	0.4	0.32	0.34	0.12	0.25	0.27	0.28	0.18	NA	0.22	0.37	0.085	0.24	0.28	0.29

Notes:

U = Indicates the analyte was not detected above the minimum laboratory reporting limit

NA = Analyte was not analyzed.

ND = None of the constituents were detected above the minimum laboratory reporting limit

mg/L = milligrams per liter

ug/L = micrograms per liter

Table 13 - Summary of 2013-2015 Surface Water Analytical Results

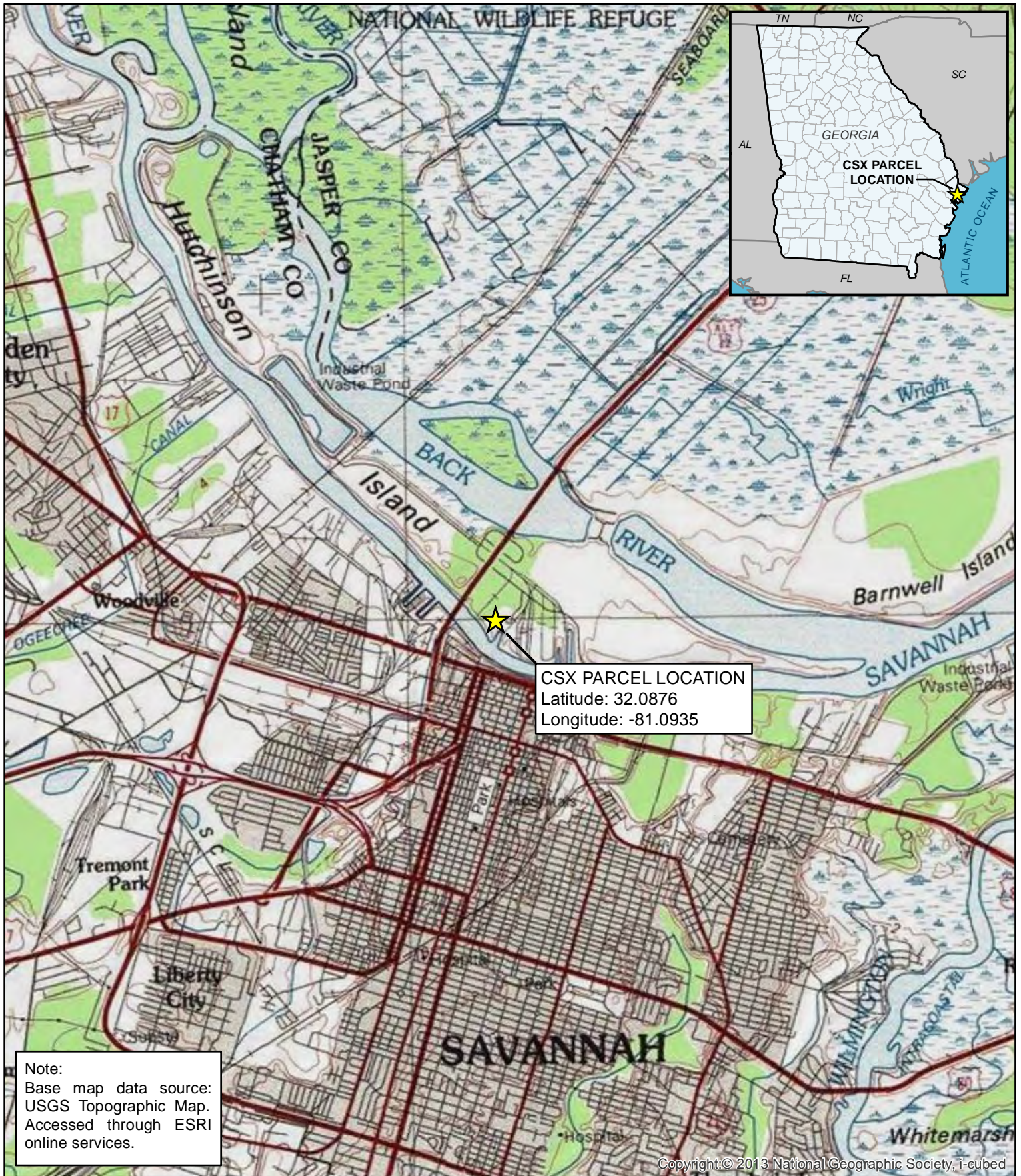
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Tide Stage:	Units	LOW	HIGH	LOW	HGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
Polycyclic Aromatic Hydrocarbons																	
1-Methylnaphthalene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
2-Methylnaphthalene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Acenaphthene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Acenaphthylene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Anthracene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Benzo(a)anthracene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Benzo(a)pyrene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Benzo(b)fluoranthene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Benzo(g,h,i)perylene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Chrysene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Dibenz(a,h)anthracene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Fluoranthene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Fluorene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Naphthalene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Phenanthrene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Pyrene	ug/L	9.5 U	9.5 U	9.6 U	9.7 U	NA	NA	NA	NA	9.5 U	9.5 U	10 U	10 U	NA	NA	NA	NA
Total PAHs	ug/L	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	10 U	ND	NA	NA	NA	NA
Volatile Organic Compounds																	
Benzene	ug/L	1 U	1 U	1 U	1 U	NA	NA	NA	NA	1 U	1 U	1 U	1 U	NA	NA	NA	NA
Ethylbenzene	ug/L	1 U	1 U	1 U	1 U	NA	NA	NA	NA	1 U	1 U	1 U	1 U	NA	NA	NA	NA
Toluene	ug/L	1 U	1 U	1 U	1 U	NA	NA	NA	NA	1 U	1 U	1 U	1 U	NA	NA	NA	NA
Xylenes (total)	ug/L	2 U	2 U	2 U	2 U	NA	NA	NA	NA	2 U	2 U	2 U	2 U	NA	NA	NA	NA
Total BTEX	ug/L	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
Dissolved Metals																	
Arsenic	mg/L	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA
Chromium	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA
Lead	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA
Nickel	mg/L	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	NA	NA	0.04 U	0.04 U	0.04 U	0.04 U	NA	NA	NA	NA
Zinc	mg/L	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA
Miscellaneous																	
Alkalinity	mg/L	NA	NA	NA	NA	100	60	120	71	NA	NA	NA	NA	84	58	120	100
Ammonia-N	mg/L	0.27	0.092	1.7	0.31	0.19	0.22	0.80	0.91	0.17	0.33	1.9	0.39	0.13	0.16	1.5	0.83
Nitrite	mg/L	NA	NA	NA	NA	NA	NA	0.050 U	0.050 U	NA	NA	NA	NA	NA	NA	0.094	0.060
Nitrate	mg/L	0.18	0.42	0.26	0.36	0.083	0.25	0.21	0.27	0.41	0.24	0.28	0.39	0.078	0.24	0.17	0.25




Notes:
U = Indicates the analyte was not detected above the minimum laboratory reporting limit

NA = Analyte was not analyzed.
ND = None of the constituents were detected above the minimum laboratory reporting limit

mg/L = milligrams per liter
ug/L = micrograms per liter

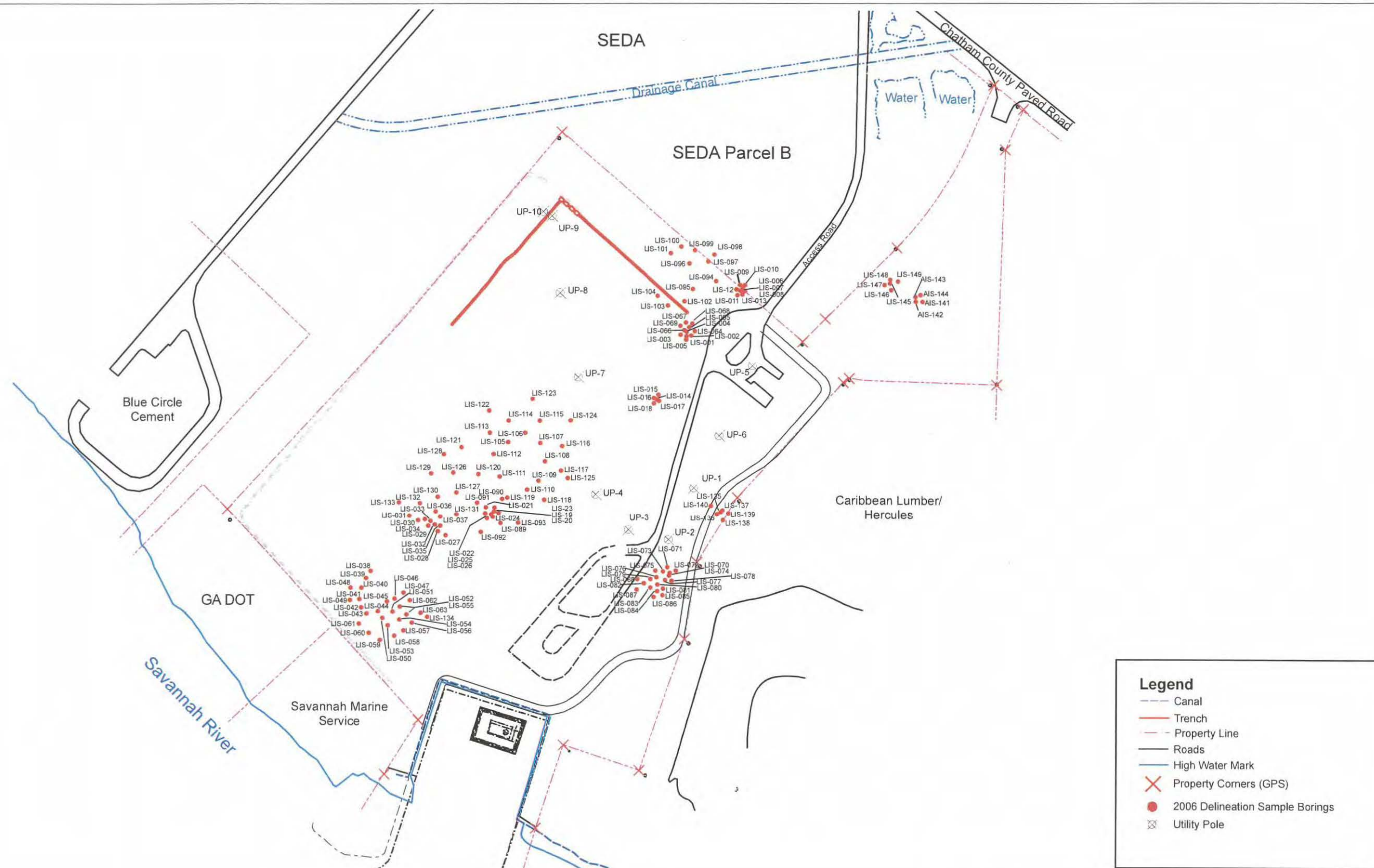
FIGURES



Amec Foster Wheeler Environment & Infrastructure 3800 Ezell Road Suite 100 Nashville, Tennessee 37211			 CSX Transportation, Inc.	FIGURE 1 CSX Parcel Location HUTCHINSON ISLAND SAVANNAH, GEORGIA		
<div> <div>00.5123</div> <div>Miles</div> </div>				07/21/2015 REV:	Drawn: JNR CHK: JJ	FILE: CSXT_Hutch_Is_Site_Loc_Topo_Map.mxd PROJ: 6-4300-5245



Amec Foster Wheeler Environment & Infrastructure 2677 Buford Highway Atlanta, GA 30324				CSX Transportation, Inc.	FIGURE 2 Site Vicinity Map Hutchinson Island HSI - 10101 - Savannah, Georgia		
					07/20/2016	REV:	File: P:\ENV\643005246-CSX Hutchinson Island\GIS\2016\VRP\CSXT_Hutch_Site_Vicinity_07202016
					Drawn: TDN	PROJ: 6-4300-5247	Aerial data source: Obtained through ESRI online services, 2015 Parcel Data Source: Savannah Area GIS (SAGIS)



**Amec Foster Wheeler
Environment & Infrastructure, Inc.**

2677 Buford Highway
Atlanta, Georgia 30324



CSX Transportation, Inc.

**Figure 3
2006 Delineation Program Sample
Locations**

0 150 300 450
Feet

7/14/16

Project: 6-4300-5247

REV:

Drawn: JBO

File:CSXT:_Hutch_Site_Vicinity_VRP_Plan.mxd



Amec Foster Wheeler
Environment & Infrastructure, Inc.
 2677 Buford Highway
 Atlanta, Georgia 30324



Figure 4
April 2007 Site-Wide PSM
Investigation Boring Locations

0 150 300
 Feet

7/14/16
 Project: 6-4300-5247

REV:
 Drawn: JBO

File:CSXT:_Hutch_Site_Vicinity_VRP_Plan.mxd



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CSX Transportation, Inc.

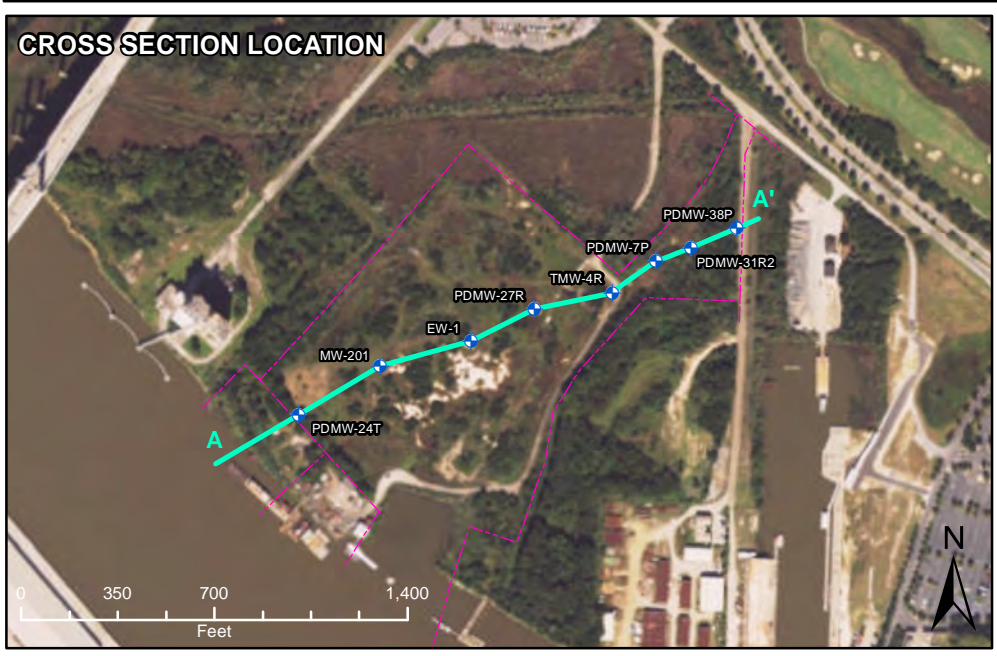
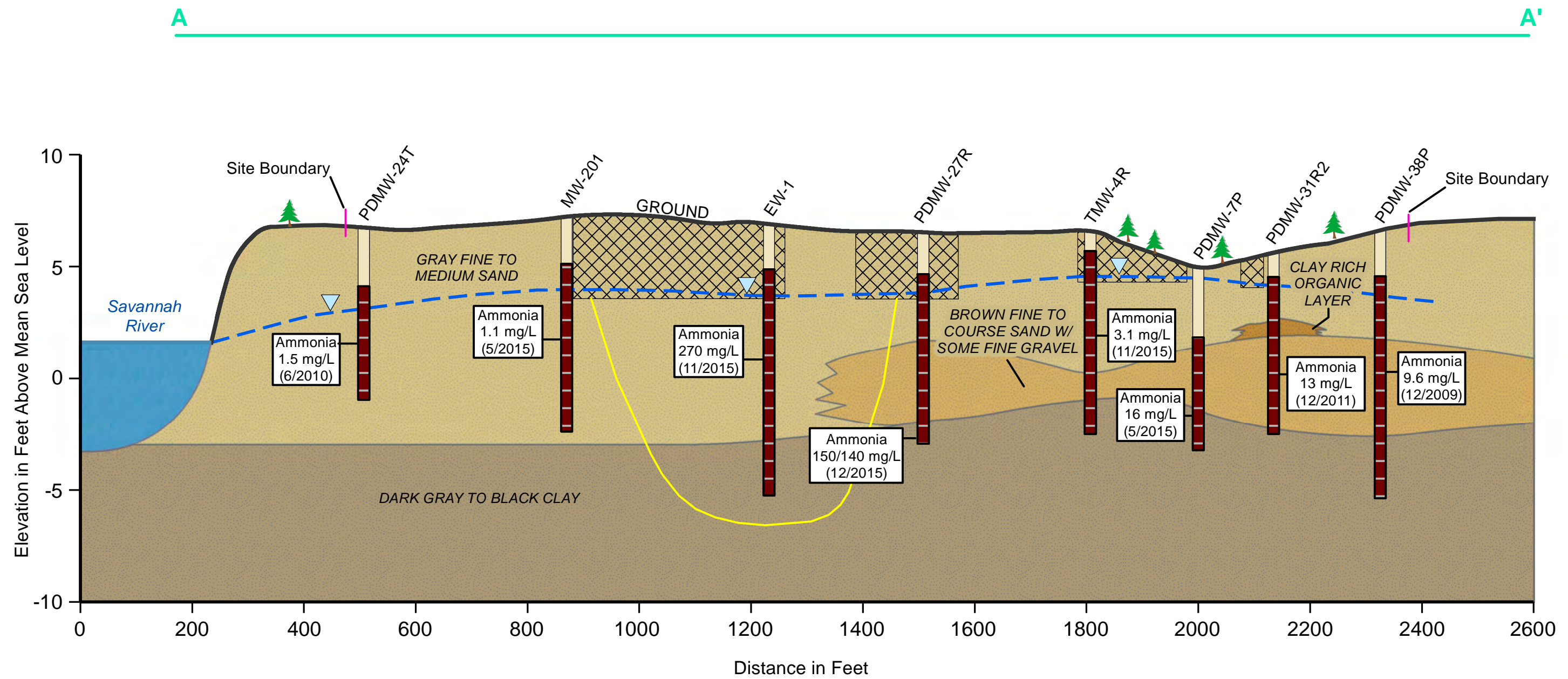
02004008001,2001,600Feet

07/20/2016
Drawn: TDN

FIGURE 5
Summary of Groundwater Analytical Results-
November 2015
Hutchinson Island HSE - 10101- Savannah, Georgia

REV:
PROJ: 6-4300-5247

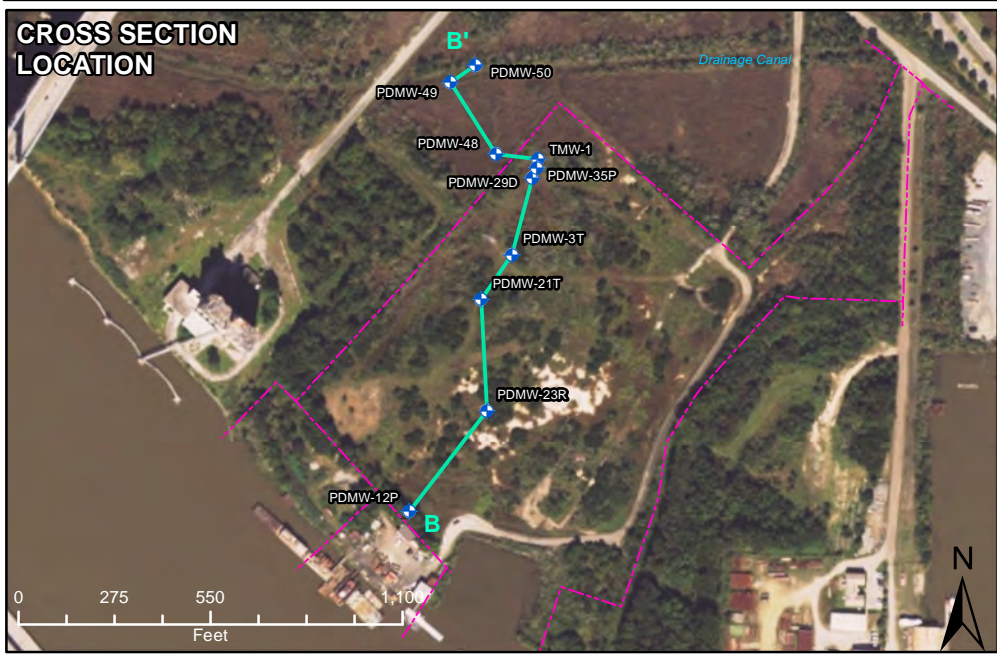
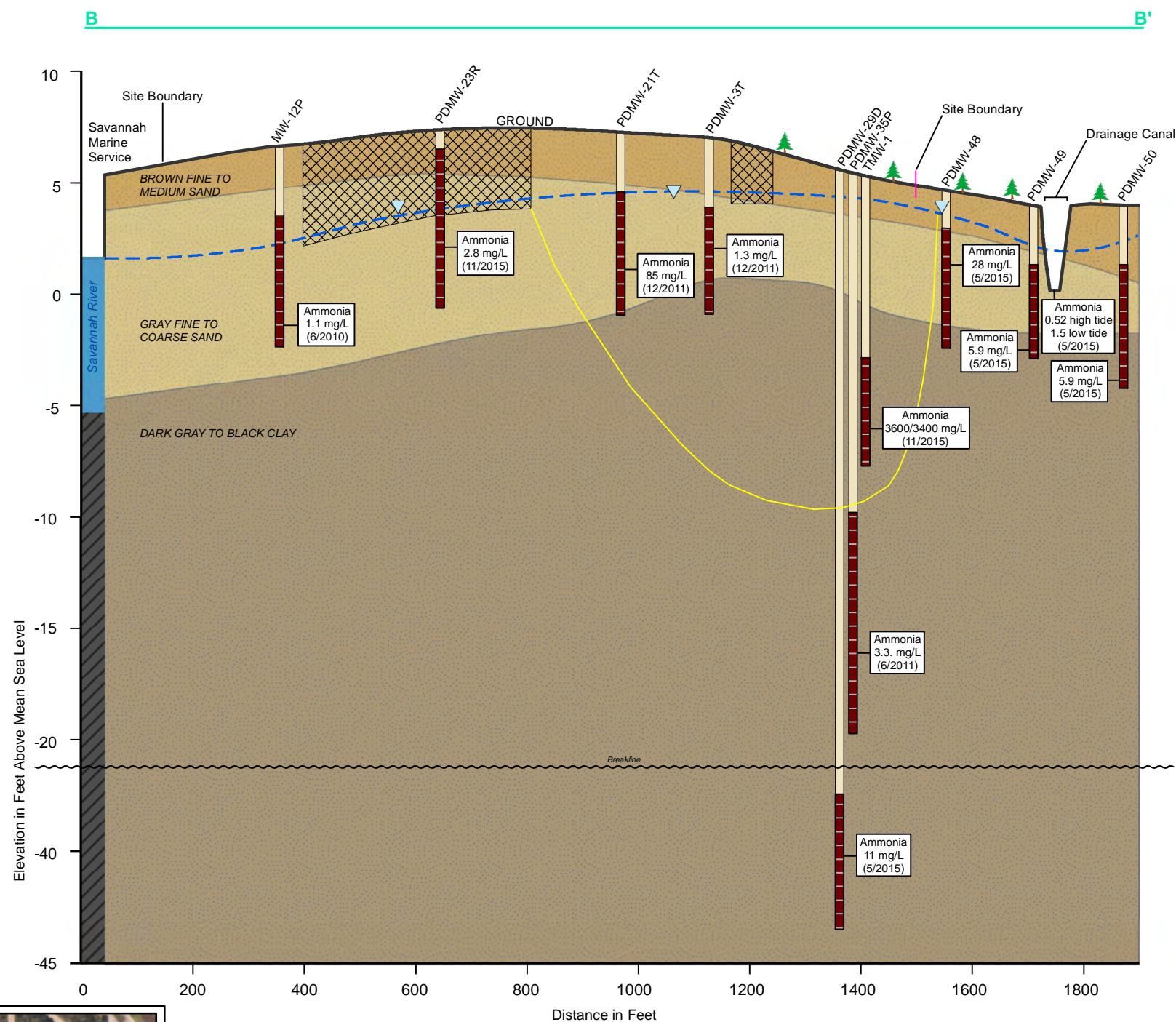
File: P:\ENV\643005246-CSX Hutchinson Island\GIS
2016VRP\GW_SW_Results
_07202016
Aerial data source: Obtained through
ESRI online services, 2015
Parcel Data Source: Savannah Area GIS (SAGIS)



NOTES:
 -Ammonia in groundwater data depicted is the most recent collected
 -mg/L = milligrams per liter

SYMBOL KEY	
	Well Shaft
	Well Screen
	Excavated Soil
	Ammonia Delineation Isopleth
	Monitoring Well
	Cross Section Line
	Property Line
	Water Table

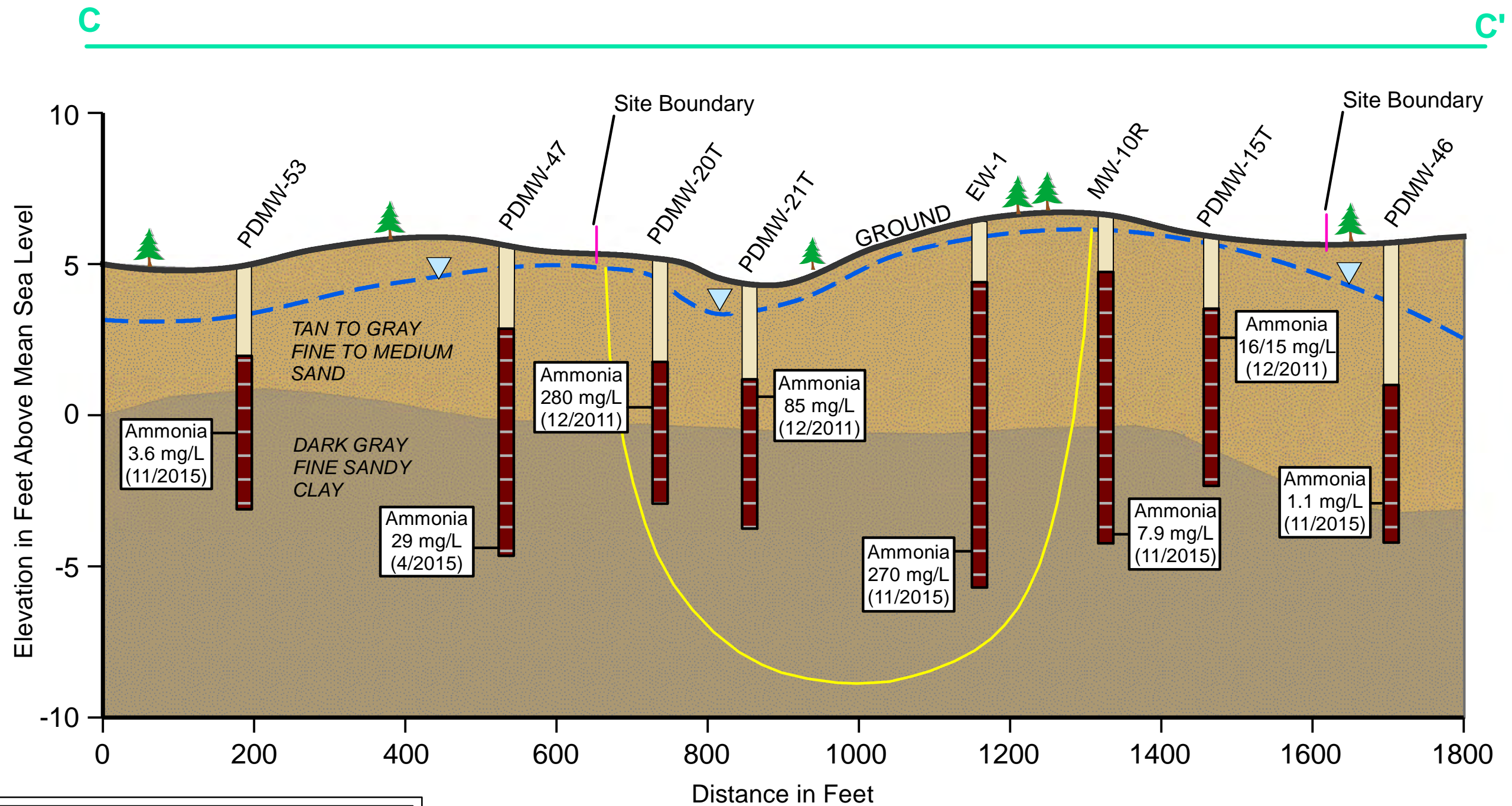
CSX Transportation, Inc.		FIGURE 6 Cross Section A-A' - Hutchinson Island HSI - 10101 Savannah, Georgia	
		Drawn: TDN Date: 07/12/2016 PROJ: 643005247	
-SCALE AS SHOWN-		Document Path: P:\ENV\643005246 - CSX Hutchinson Island\GIS\2016CSR\CSXT_Hutch_Soil_Profile_A-A'_VRP_Plan_07122016.mxd	



NOTES:
-Ammonia in groundwater data depicted is the most recent collected
-mg/L = milligrams per liter

SYMBOL KEY			
	Well Shaft		Monitoring Well
	Well Screen		Cross Section Line
	Excavated Soil		Property Line
	Ammonia Delineation Isopleth		Water Table

CSX Transportation, Inc.	FIGURE 7 Cross Section B-B' - Hutchinson Island HSI - 10101 Savannah, Georgia
-SCALE AS SHOWN-	Drawn: TDN Date: 07/08/2016 PROJ: 643005247
	Document Path: P:\ENV\643005246 - CSX Hutchinson Island\GIS\2016CSR\CSXT_Hutch_Soil_Profile_B-B'_VRP_Plan_07082016.mxd



NOTES:
 -Ammonia in groundwater data depicted is the most recent collected
 -mg/L = milligrams per liter

SYMBOL KEY	
	Well Shaft
	Well Screen
	Excavated Soil
	Ammonia Delineation Isopleth
	Monitoring Well
	Cross Section Line
	Property Line
	Water Table



CSX Transportation, Inc.

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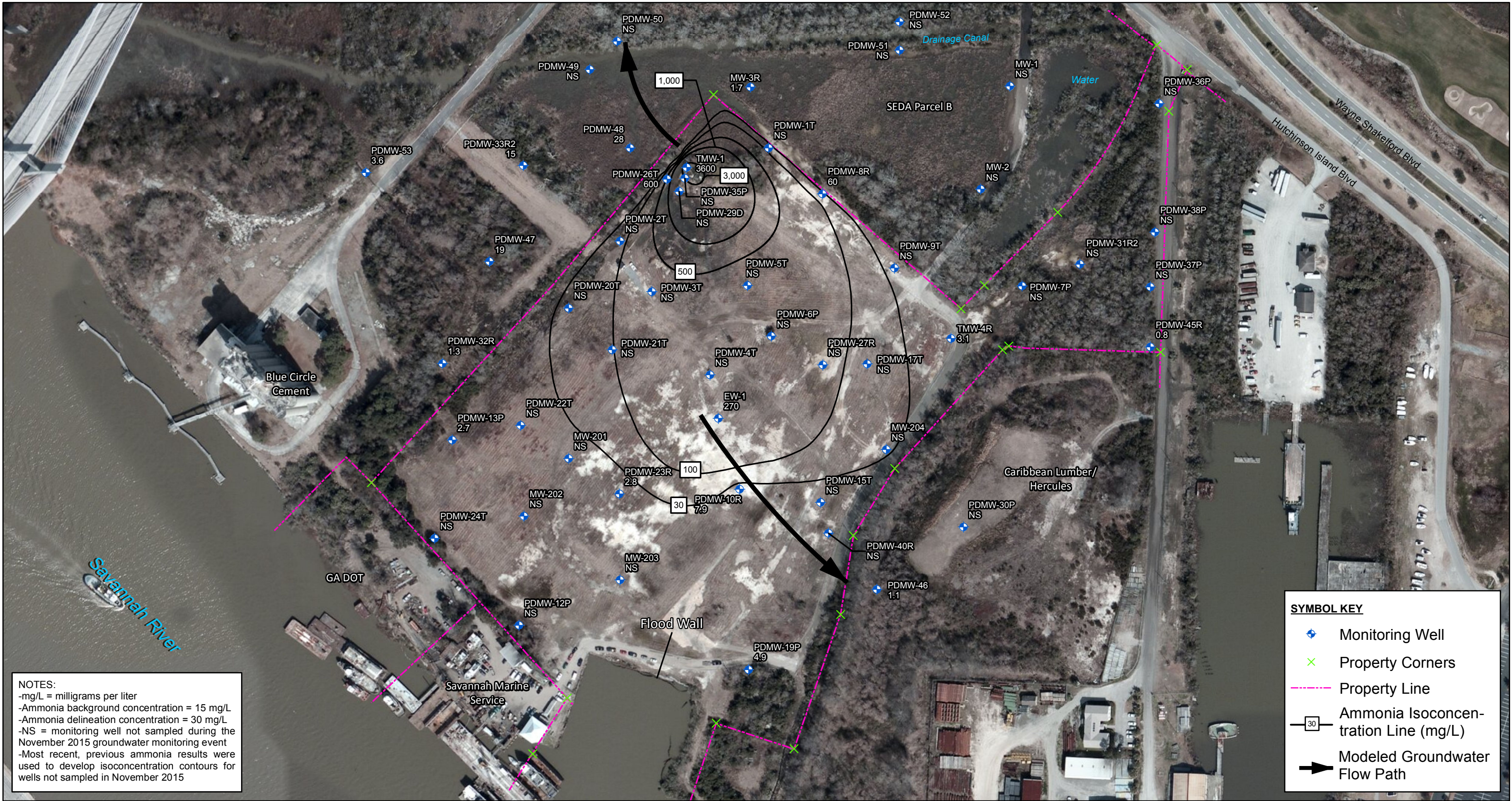
-SCALE AS SHOWN-

FIGURE 8

Cross Section C-C' - Hutchinson Island HSI - 10101
 Savannah, Georgia

Drawn: TDN Date: 07/12/2016 PROJ: 643005247

Document Path: P:\ENV\643005246 - CSX Hutchinson Island\GIS\2016CSR\CSXT_Hutch_Soil_Profile_C-C'_VRP_Plan_07122016.mxd





Amec Foster Wheeler Environment & Infrastructure 2677 Buford Highway Atlanta, Georgia 30324				CSX Transportation, Inc.	FIGURE 10 Lead Isoconcentration Map - November 2015 Hutchinson Island HSI - 10101 - Savannah, Georgia		
					07/20/2016	REV:	File: P:\ENV\643005246-CSX Hutchinson Island\GIS\2016VRP\CSXT_Hutch_IS_Lead_Conc_Nov2015.mxd
					Drawn: TDN	PROJ: 6-4300-5267	Aerial data source: Obtained through ESRI online services, 2015 Parcel Data Source: Savannah Area GIS (SAGIS)

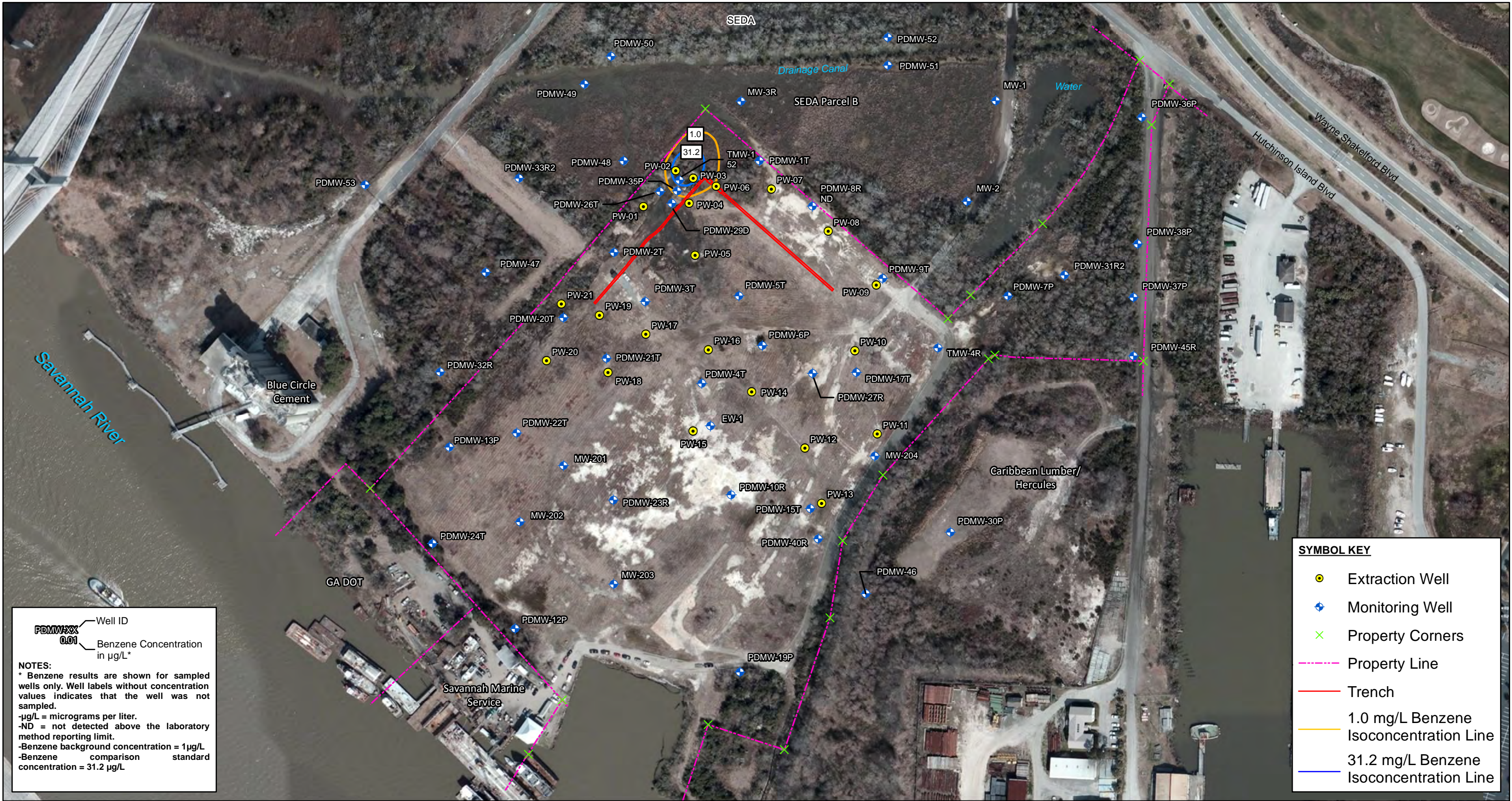


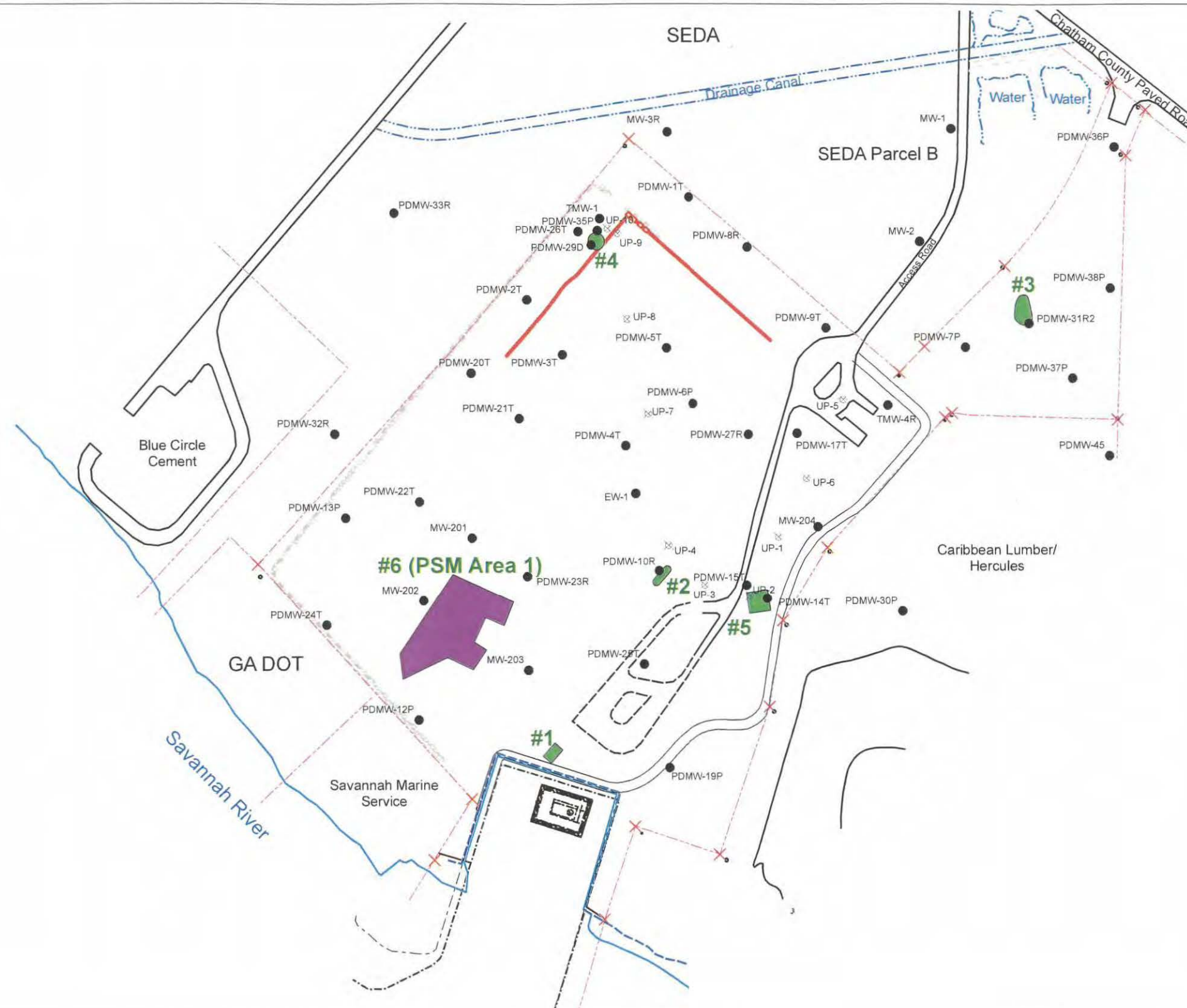
NOTES:
-mg/L = milligrams per liter
-Arsenic background concentration = 0.018 mg/L
-Arsenic comparison standard concentration = 0.018 mg/L

SYMBOL KEY

- Monitoring Well
- Property Corners
- Property Line
- Arsenic Isoconcentration Line (mg/L)







Previous Excavation Areas

#1 Approximately 40'x25'x5' - 92.5 tons: Petroleum Impacted Soil - November 1999 by AES

#2 Approximately 30'x10'x1.5' - 9.6 tons: Petroleum Impacted Soil - November 1999 by AES

#3 Approximately 30'x15'x2' - 11 tons: Arsenic Impacted Soil - November 1999 by AES

#4 Dimensions Unknown - 26 Sq. Yds: Petroleum Impacted Soil - September 2001 by AES

#5 Approximately 40'x40'x5' - 447 tons: Petroleum Impacted Soil - May 2004 by BBL

#6 Dimensions Approximately as Shown - 2200 tons of Petroleum Source Material - August 2005 by AMEC

Previous Excavation Areas 1-5 are according to BBL 2005a, Figure 23

Legend

- Canal
- Trench
- Property Line
- Roads
- High Water Mark
- Utility Pole
- Property Corners (GPS)
- Monitoring Wells

Previously Excavated Areas

- Previously Excavated Petroleum Source Material Area - Approximately 24,415 Sq. Ft. - August 2005 by AMEC
- Previously Excavated Area by AES and BBL

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2677 Buford Highway
Atlanta, Georgia 30324



**Figure 14
Location of Previous Soil Corrective
Actions**



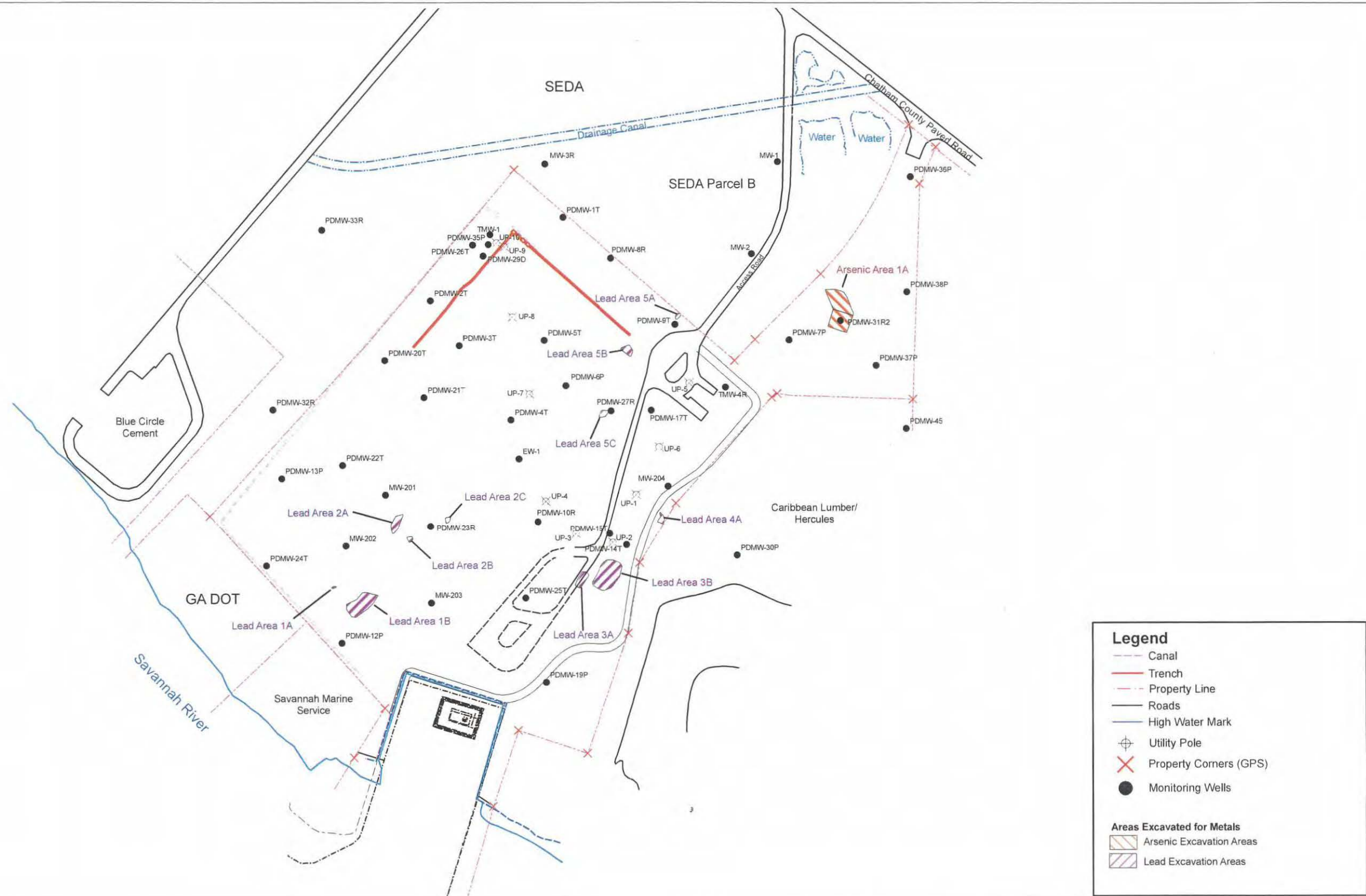
7/14/16

REV:

File:CSXT:_Hutch_Site_Vicinity_VRP_Plan.mxd

Project: 6-4300-5247

Drawn: JBO



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 Atlanta, Georgia 30324

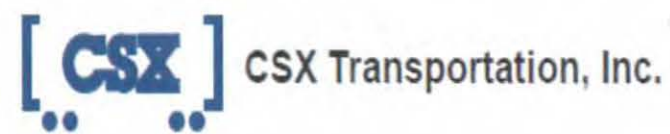


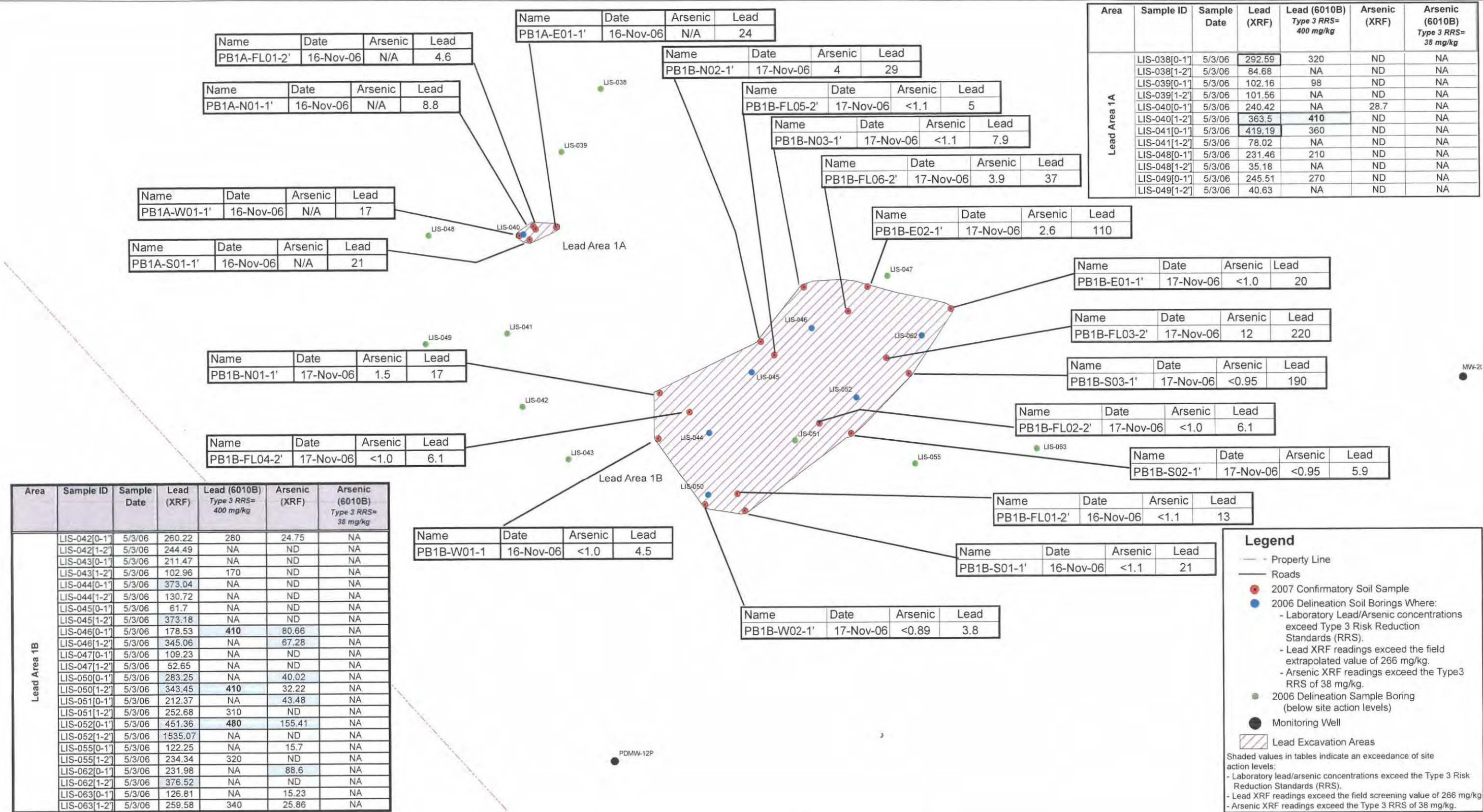
Figure 16
Overall Metals Excavation Boundaries

0 100 200 300 400
 Feet

7/14/16
 Project: 6-4300-5247

REV:
 Drawn: JBO

File:CSXT:_Hutch_Site_Vicinity_VRP_Plan.mxd



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Atlanta, Georgia 30324



Figure 17
Lead Area 1 – Excavation Limits

0 10 20 30 40 50 60 Feet

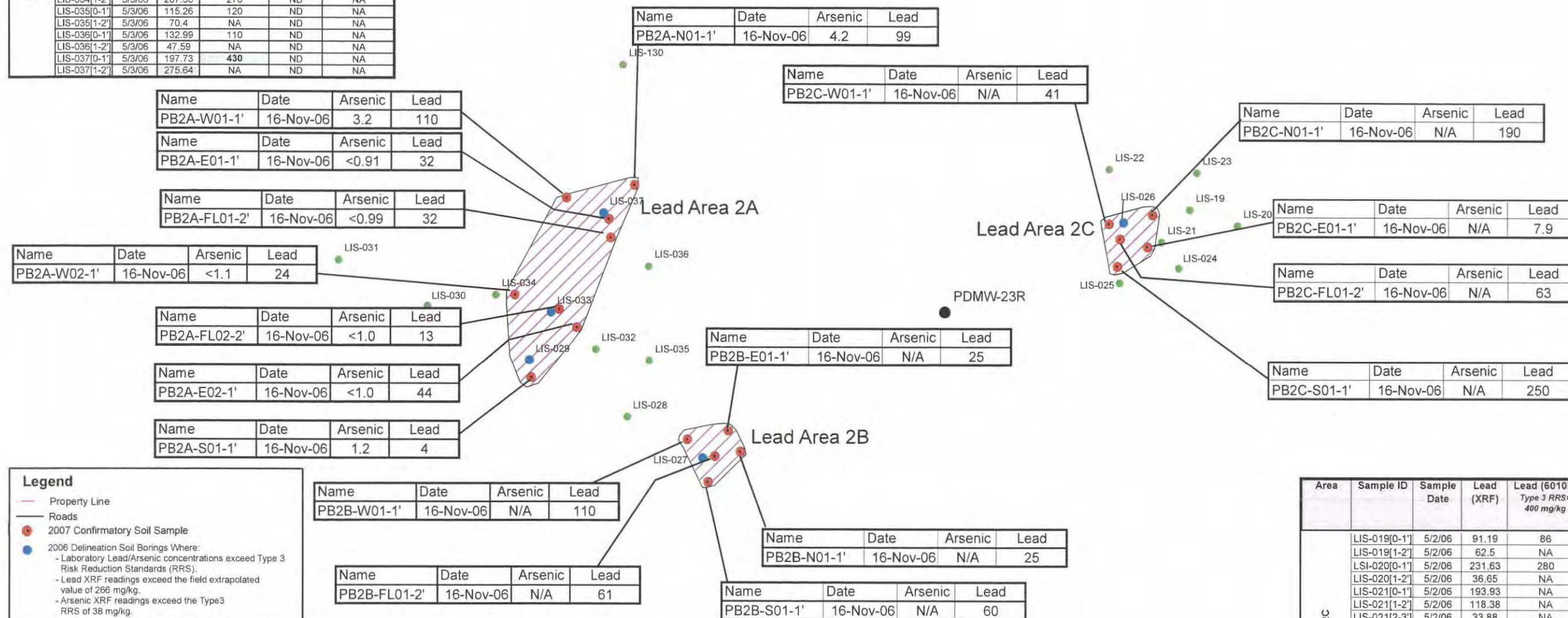
7/14/16
Project: 6-4300-5247

REV:
Drawn: JBO

File:CSXT:_Hutch_Site_Vicinity_VRP_Plan.mxd

Area	Sample ID	Sample Date	Lead (XRF)	Lead (6010B) Type 3 RRS= 400 mg/kg	Arsenic (XRF)	Arsenic (6010B) Type 3 RRS= 38 mg/kg
Lead Area 2A	LIS-029[0-1']	5/3/06	244.18	NA	ND	NA
	LIS-029[1-2']	5/3/06	1300.16	2100	50.78	NA
	LIS-030[0-1']	5/3/06	65.44	NA	ND	NA
	LIS-030[1-2']	5/3/06	38.16	NA	ND	NA
	LIS-031[0-1']	5/3/06	38	NA	ND	NA
	LIS-031[1-2']	5/3/06	14.82	NA	ND	NA
	LIS-032[0-1']	5/3/06	364.13	350	ND	NA
	LIS-032[1-2']	5/3/06	54.24	NA	ND	NA
	LIS-033[0-1']	5/3/06	174.86	NA	ND	NA
	LIS-033[1-2']	5/3/06	2049.42	11000	ND	NA
	LIS-034[0-1']	5/3/06	205.36	NA	ND	NA
	LIS-034[1-2']	5/3/06	207.33	270	ND	NA
	LIS-035[0-1']	5/3/06	115.26	120	ND	NA
	LIS-035[1-2']	5/3/06	70.4	NA	ND	NA
	LIS-036[0-1']	5/3/06	132.99	110	ND	NA
	LIS-036[1-2']	5/3/06	47.59	NA	ND	NA
	LIS-037[0-1']	5/3/06	197.73	430	ND	NA
	LIS-037[1-2']	5/3/06	275.64	NA	ND	NA

Area	Sample ID	Sample Date	Lead (XRF)	Lead (6010B) Type 3 RRS= 400 mg/kg	Arsenic (XRF)	Arsenic (6010B) Type 3 RRS= 38 mg/kg
Lead Area 2B	LIS-027[0-1']	5/3/06	205.97	2700	ND	NA
	LIS-027[1-2']	5/3/06	70.19	NA	ND	NA
	LIS-028[0-1']	5/3/06	260.48	270	ND	NA
	LIS-028[1-2']	5/3/06	64.72	NA	ND	NA



Legend

- Property Line
- Roads
- 2007 Confirmatory Soil Sample
- 2006 Delineation Soil Borings Where:
 - Laboratory Lead/Arsenic concentrations exceed Type 3 Risk Reduction Standards (RRS).
 - Lead XRF readings exceed the field extrapolated value of 266 mg/kg.
 - Arsenic XRF readings exceed the Type 3 RRS of 38 mg/kg.
- 2006 Delineation Soil Boring (below site action levels)
- Monitoring Wells
- Lead Excavation Areas

Shaded values in tables indicate an exceedance of site action levels:

- Laboratory lead/arsenic concentrations exceed the Type 3 Risk Reduction Standards (RRS).
- Lead XRF readings exceed the field screening value of 266 mg/kg.
- Arsenic XRF readings exceed the Type 3 RRS of 38 mg/kg.

Area	Sample ID	Sample Date	Lead (XRF)	Lead (6010B) Type 3 RRS= 400 mg/kg	Arsenic (XRF)	Arsenic (6010B) Type 3 RRS= 38 mg/kg
Lead Area 2C	LIS-019[0-1']	5/2/06	91.19	86	ND	NA
	LIS-019[1-2']	5/2/06	62.5	NA	ND	NA
	LSI-020[0-1']	5/2/06	231.63	280	ND	NA
	LIS-020[1-2']	5/2/06	36.65	NA	ND	NA
	LIS-021[0-1']	5/2/06	193.93	NA	ND	NA
	LIS-021[1-2']	5/2/06	118.38	NA	ND	NA
	LIS-021[2-3']	5/2/06	33.88	NA	ND	NA
	LIS-022[0-1']	5/2/06	352.52	260	ND	NA
	LIS-022[1-2']	5/2/06	124.62	NA	ND	NA
	LIS-023[0-1']	5/2/06	210.27	NA	ND	NA
	LIS-023[1-2']	5/2/06	109.92	NA	ND	NA
	LIS-024[0-1']	5/2/06	177.55	NA	ND	NA
	LIS-024[1-2']	5/2/06	98.87	NA	ND	NA
	LIS-025[0-1']	5/2/06	186.03	NA	ND	NA
	LIS-025[1-2']	5/2/06	54.99	NA	ND	NA
	LIS-026[0-1']	5/2/06	121.53	120	ND	NA
	LIS-026[1-2']	5/2/06	331.07	NA	ND	NA

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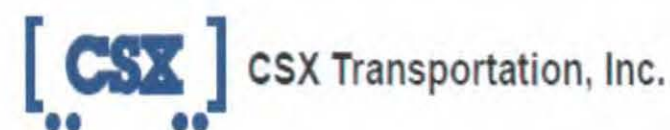


Figure 18
Lead Area 2 – Excavation Limits



7/14/16
 Project: 6-4300-5247

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Area	Sample ID	Sample Date	Lead (XRF)	Lead (6010B) Type 3 RRS= 400 mg/kg	Arsenic (XRF)	Arsenic (6010B) Type 3 RRS= 38 mg/kg
Lead Area 3B	LIS-070[0-1']	5/4/06	319.25	NA	ND	NA
	LIS-071[0-1']	5/4/06	381.19	NA	ND	NA
	LIS-072[0-1']	5/4/06	239.01	420	ND	NA
	LIS-073[0-1']	5/4/06	992.14	990	ND	NA
	LIS-074[0-1']	5/4/06	608.07	NA	ND	NA
	LIS-075[0-1']	5/4/06	167.34	NA	ND	NA
	LIS-075[1-2']	5/4/06	81.21	NA	ND	NA
	LIS-076[0-1']	5/4/06	420.86	NA	ND	NA
	LIS-077[0-1']	5/4/06	656.28	NA	ND	NA
	LIS-078[0-1']	5/4/06	134.71	NA	ND	NA
	LIS-079[0-1']	5/4/06	740.84	NA	ND	NA
	LIS-080[0-1']	5/4/06	720.65	NA	ND	NA
	LIS-081[0-1']	5/4/06	45.84	NA	ND	NA
	LIS-082[0-1']	5/4/06	123.43	NA	ND	NA
	LIS-083[0-1']	5/4/06	148.52	NA	ND	NA
	LIS-084[0-1']	5/4/06	659.75	1700	ND	NA
	LIS-085[0-1']	5/4/06	11.74	9.6	ND	NA
	LIS-086[0-1']	5/4/06	ND	2.5	ND	NA

UP-3

PDMW-15T

UP-2

PDMW-14T

Name	Date	Arsenic	Lead
PB3B-FL-06-1'	20-Nov-06	<1	6.4

Name	Date	Arsenic	Lead
PB3B-N06-1'	28-Nov-06	2.1	7.7

Name	Date	Arsenic	Lead
PB3B-E02-6"	20-Nov-06	1.5	350

Name	Date	Arsenic	Lead
PB3B-FL05-1'	20-Nov-06	2.3	240

Name	Date	Arsenic	Lead
PB3B-E01-6"	20-Nov-06	4	380

Name	Date	Arsenic	Lead
PB3B-N07-1'	28-Nov-06	<0.94	18

Name	Date	Arsenic	Lead
PB3B-FL09-2'	28-Nov-06	<1.2	2.3

Name	Date	Arsenic	Lead
PB3B-N04-1'	28-Nov-06	7.4	300

Name	Date	Arsenic	Lead
PB3B-S03-6"	20-Nov-06	1.3	270

Name	Date	Arsenic	Lead
PB3A-N02-6"	20-Nov-06	N/A	120

Name	Date	Arsenic	Lead
PB3A-E01-6"	17-Nov-06	N/A	220

Name	Date	Arsenic	Lead
PB3A-FL01-1'	17-Nov-06	N/A	98

Name	Date	Arsenic	Lead
PB3A-W03-6"	20-Nov-06	<.97	8.6

Name	Date	Arsenic	Lead
PB3B-FL02-1'	20-Nov-06	<0.98	130

Name	Date	Arsenic	Lead
PB3B-S05-1'	28-Nov-06	<1.0	19

Name	Date	Arsenic	Lead
PB3B-FL08-2'	28-Nov-06	<1.1	1.2

Name	Date	Arsenic	Lead
PB3B-FL07-2'	28-Nov-06	<1.3	4.9

Name	Date	Arsenic	Lead
PB3A-S01-6"	17-Nov-06	N/A	270

Name	Date	Arsenic	Lead
PB3B-S04-1'	28-Nov-06	<0.99	9.3

Name	Date	Arsenic	Lead
PB3B-W03-1'	28-Nov-06	<1.1	22

Name	Date	Arsenic	Lead
PB3B-W01-6"	20-Nov-06	<0.97	5.6

Area	Sample ID	Sample Date	Lead (XRF)	Lead (6010B) Type 3 RRS= 400 mg/kg	Arsenic (XRF)	Arsenic (6010B) Type 3 RRS= 38 mg/kg
Lead Area 3A	LIS-087[0-1']	5/4/06	43.34	NA	ND	NA
	LIS-088[0-1']	5/4/06	291.49	NA	20.72	NA
	LIS-088[1-2']	5/4/06	127.55	NA	13.19	NA

Legend

- Property Line
- Roads
- Utility Pole
- 2007 Confirmatory Soil Sample
- 2006 Delineation Soil Borings Where:
 - Laboratory Lead/Arsenic concentrations exceed Type 3 Risk Reduction Standards (RRS).
 - Lead XRF readings exceed the field extrapolated value of 266 mg/kg.
 - Arsenic XRF readings exceed the Type3 RRS of 38 mg/kg.
- 2006 Delineation Sample Boring (below site action levels)
- Monitoring Well
- Lead Excavation Areas

Shaded values in tables indicate an exceedance of site action levels:
 - Laboratory lead/arsenic concentrations exceed the Type 3 Risk Reduction Standards (RRS).
 - Lead XRF readings exceed the field screening value of 266 mg/kg
 - Arsenic XRF readings exceed the Type 3 RRS of 38 mg/kg.

Area	Sample ID	Sample Date	Lead (XRF)	Lead (6010B) Type 3 RRS= 400 mg/kg	Arsenic (XRF)	Arsenic (6010B) Type 3 RRS= 38 mg/kg
Lead Area 4A	LIS-135[0-1']	5/6/06	280.3	NA	ND	NA
	LIS-135[1-2']	5/6/06	342.08	450	ND	NA
	LIS-136[0-1']	5/6/06	148.92	NA	15.85	NA
	LIS-137[0-1']	5/6/06	316.24	430	ND	NA
	LIS-138[0-1']	5/6/06	259.07	NA	21.02	NA
	LIS-139[0-1']	5/6/06	123.8	NA	ND	NA
	LIS-140[0-1']	5/6/06	99.2	95	ND	NA
	LIS-140[1-2']	5/6/06	70.13	NA	ND	NA

UP-1

MW-204

Name	Date	Arsenic	Lead
PB4A-N01-6"	16-Nov-06	14	390

Name	Date	Arsenic	Lead
PB4A-E02-6"	16-Nov-06	9.5	280

Name	Date	Arsenic	Lead
PB4A-FL01-1'	16-Nov-06	7.1	220

Name	Date	Arsenic	Lead
PB4A-W01-6"	16-Nov-06	5.3	330

Name	Date	Arsenic	Lead
PB4A-S06-6"	27-Nov-06	6.5	270

Name	Date	Arsenic	Lead
PB4A-E03-6"	28-Nov-06	7.3	200

Name	Date	Arsenic	Lead
PB4A-W02-6"	28-Nov-06	22	320

PDMW-15T

UP-2

PDMW-14T

Lead Area 4A

Legend

- Property Line
 - Roads
 - Utility Pole
 - 2007 Confirmatory Soil Sample
 - 2006 Delineation Soil Borings Where:
 - Laboratory Lead/Arsenic concentrations exceed Type 3 Risk Reduction Standards (RRS).
 - Lead XRF readings exceed the field extrapolated value of 266 mg/kg.
 - Arsenic XRF readings exceed the Type3 RRS of 38 mg/kg.
 - 2006 Delineation Sample Boring (below site action levels)
 - Monitoring Well
 - Lead Excavation Areas - The entire area of Lead Area4 was excavated down to 4 ft below grade during the PSM 6 excavation
- Shaded values in tables indicate an exceedance of site action levels:
- Laboratory lead/arsenic concentrations exceed the Type 3 Risk Reduction Standards (RRS).
 - Lead XRF readings exceed the field extrapolated value of 266 mg/kg
 - Arsenic XRF readings exceed the Type 3 RRS of 38 mg/kg.

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Figure 20
Lead Area 4 – Excavation Limits



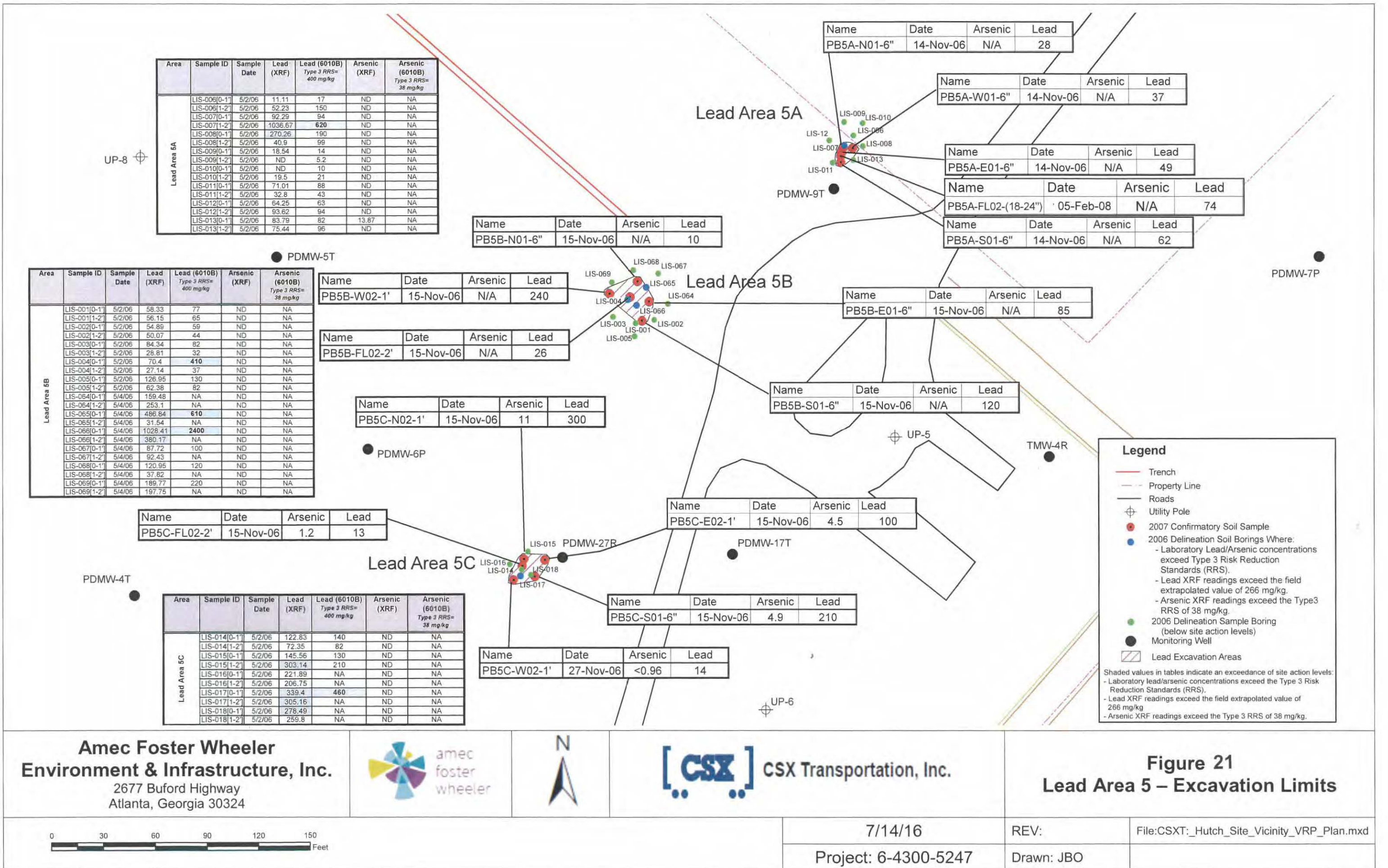
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Figure 21
Lead Area 5 – Excavation Limits

0 30 60 90 120 150
Feet

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Area	Sample ID	Sample Date	Lead (XRF)	Lead (6010B) Type 3 RRS= 400 mg/kg	Arsenic (XRF)	Arsenic (6010B) Type 3 RRS= 38 mg/kg
Former Lead Area 6	LIS-145[0-1']	5/6/06	43.96	46	ND	NA
	LIS-146[0-1']	5/6/06	21.66	NA	ND	NA
	LIS-147[0-1']	5/6/06	52.97	35	ND	NA
	LIS-148[0-1']	5/6/06	46.38	NA	ND	NA
	LIS-149[0-1']	5/6/06	40.98	NA	ND	NA

Area	Sample ID	Sample Date	Lead (XRF)	Lead (6010B) Type 3 RRS= 400 mg/kg	Arsenic (XRF)	Arsenic (6010B) Type 3 RRS= 38 mg/kg
Arsenic Area 1A	AIS-141[0-1']	5/6/06	40.85	NA	14.5	NA
	AIS-141[1-2']	5/6/06	96.26	NA	71.66	110
	AIS-142[0-1']	5/6/06	100.59	NA	24.32	NA
	AIS-142[1-2']	5/6/06	115.07	NA	48.75	67
	AIS-143[0-1']	5/6/06	26.52	NA	19.41	37
	AIS-143[1-2']	5/6/06	12.06	NA	ND	NA
	AIS-144[0-1']	5/6/06	25.63	NA	10.48	NA
	AIS-144[1-2']	5/6/06	35.47	NA	13.78	15

Name	Date	Arsenic	Lead
AS1A-W04-3"	7-Dec-06	6	31

Name	Date	Arsenic	Lead
AS1A-W06-3"	7-Dec-06	32	73

Name	Date	Arsenic	Lead
AS1A-N07A-3"	13-Dec-08	33	190

Name	Date	Arsenic	Lead
AS1A-E04-3"	7-Dec-06	33	85

Name	Date	Arsenic	Lead
AS1A-E02-3"	20-Nov-06	25	91

Name	Date	Arsenic	Lead
AS1A-E03-6"	29-Nov-06	20	110

Name	Date	Arsenic	Lead
AS1A-S01-3"	15-Nov-06	23	190

Name	Date	Arsenic	Lead
AS1A-S02-1'	29-Nov-06	5.1	49

Name	Date	Arsenic	Lead
As1A-N01-3"	15-Nov-06	11	36

Name	Date	Arsenic	Lead
AS1A-W02-6"	29-Nov-06	10	21

Name	Date	Arsenic	Lead
As1A-W01-3"	15-Nov-06	5.3	25

Legend

- Property Line
- Roads
- 2007 Confirmatory Soil Sample
- 2006 Delineation Soil Borings Where:
 - Laboratory Lead/Arsenic concentrations exceed Type 3 Risk Reduction Standards (RRS).
 - Lead XRF readings exceed the field extrapolated value of 266 mg/kg.
 - Arsenic XRF readings exceed the Type3 RRS of 38 mg/kg.
- 2006 Delineation Sample Boring (below site action levels)
- Monitoring Well
- Arsenic Excavation Area
 - Excavated from ground surface down to 6" below grade
- Arsenic Excavation Area
 - Excavated from ground surface down to 4 ft. below grade
- Former Lead Area 6

Shaded values in tables indicate an exceedance of site action levels:

- Laboratory lead/arsenic concentrations exceed the Type 3 Risk Reduction Standards (RRS).
- Lead XRF readings exceed the field extrapolated value of 266 mg/kg
- Arsenic XRF readings exceed the Type 3 RRS of 38 mg/kg.

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CSX Transportation, Inc.

Figure 22
Arsenic Area 1A – Excavation Limits

0 10 20 30 40 50 60 70
Feet

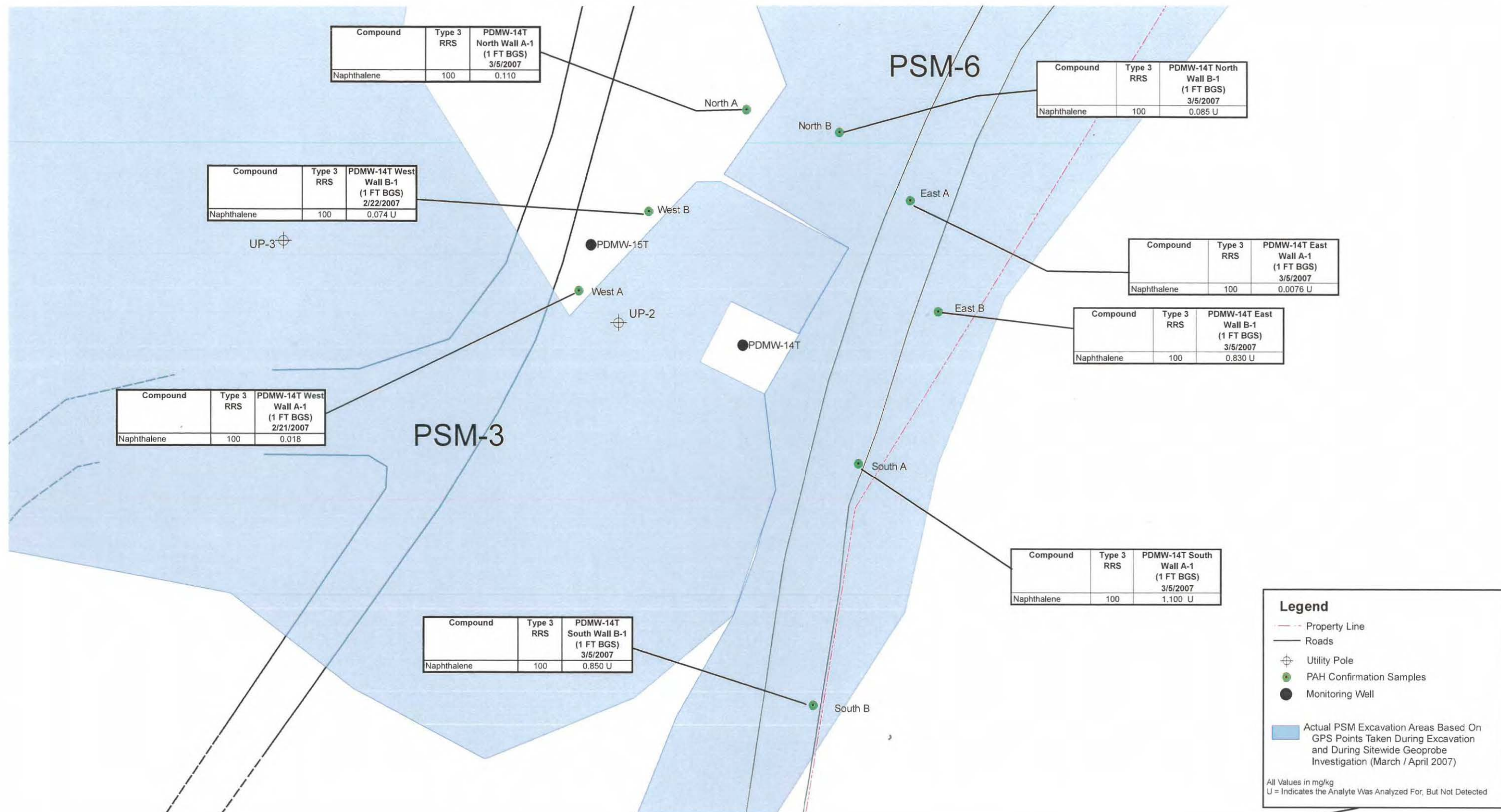
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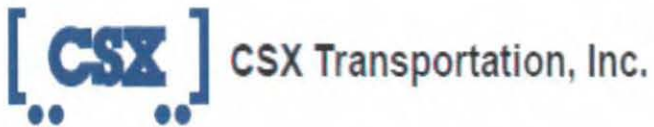
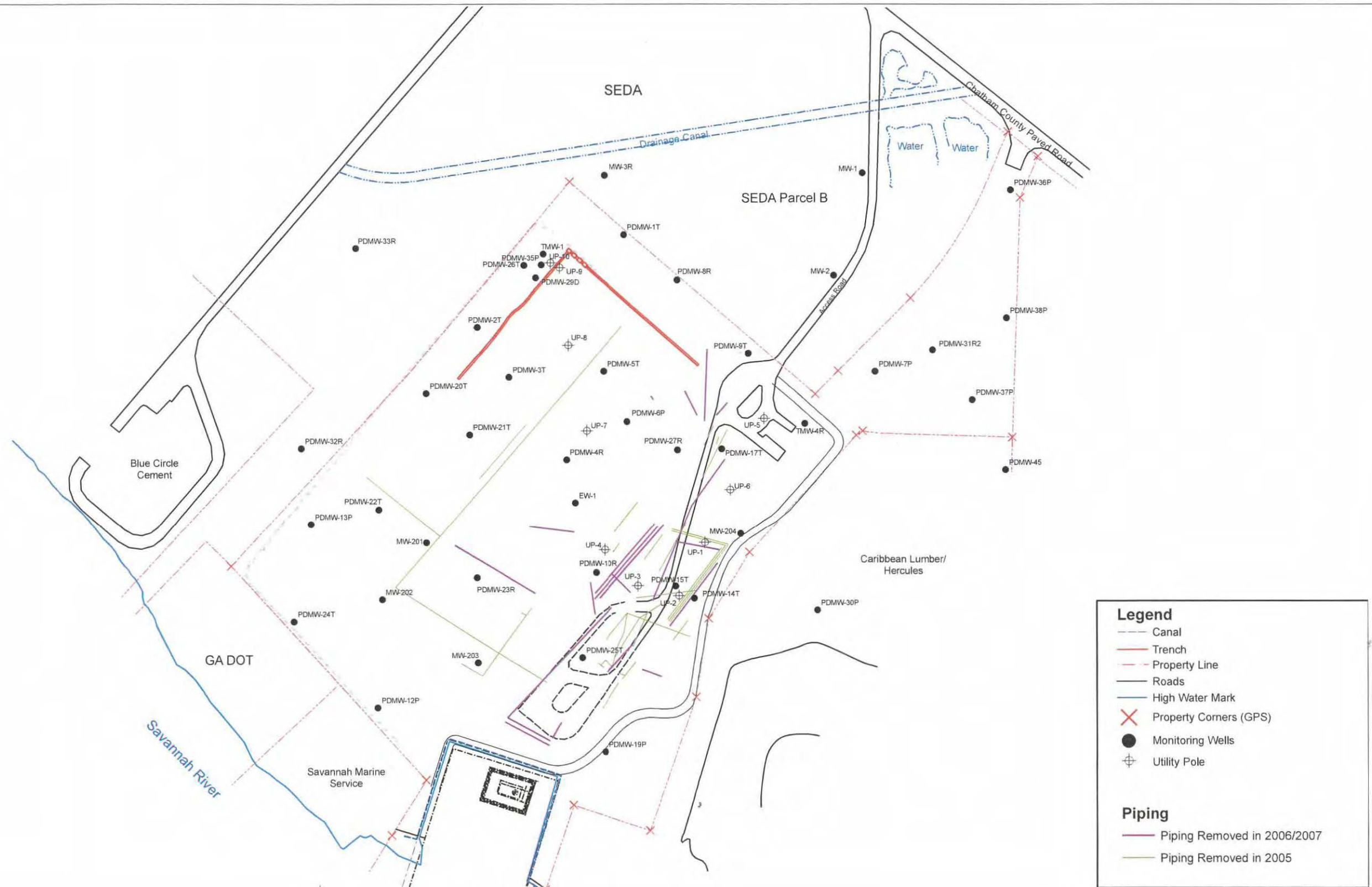


Figure 24
PAH Confirmation Sample Locations



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Figure 25
Removed Piping Locations



7/14/16

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Project: 6-4300-5247

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APPENDIX A

LABORATORY DATA

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-101934-1

Client Project/Site: CSX Hutchinson Island VRP

For:

AMEC Environment & Infrastructure, Inc.

396 Plasters Avenue, NE

Atlanta, Georgia 30324

Attn: Mr. Steve Foley



Authorized for release by:

6/18/2014 5:46:41 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Job ID: 680-101934-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Environment & Infrastructure, Inc.
Project: CSX Hutchinson Island VRP
Report Number: 680-101934-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

RECEIPT

The samples were received on 6/4/2014 8:44 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.8° C and 1.0° C.

There was a discrepancy noted between the COC and the container label for sample PDMW-30R_06032014 (680-101934-9). Vials show PDMW-30P-06032014. The COC was used for login.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples ERB-01_06032014 (680-101934-1), FB-01_06032014 (680-101934-2), ERB-02-06032014 (680-101934-3), TMW-4R_06032014 (680-101934-4), MW-01_06032014 (680-101934-5), PDMW-8R_06032014 (680-101934-6), PDMW-45R_06032014 (680-101934-7), PDMW-29D_06032014 (680-101934-8), PDMW-30R_06032014 (680-101934-9), DUP-01_06032014 (680-101934-10), DUP-02_06032014 (680-101934-11) and TRIPBLANK_06032014 (680-101934-12) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples ERB-01_06032014 (680-101934-1), FB-01_06032014 (680-101934-2), ERB-02-06032014 (680-101934-3), TMW-4R_06032014 (680-101934-4), MW-01_06032014 (680-101934-5), PDMW-8R_06032014 (680-101934-6), PDMW-45R_06032014 (680-101934-7), PDMW-29D_06032014 (680-101934-8), PDMW-30R_06032014 (680-101934-9), DUP-01_06032014 (680-101934-10) and DUP-02_06032014 (680-101934-11) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D.

Method(s) 8270D: Six surrogates are used for this analysis. The laboratory's SOP allows one acid and/or base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample(s) contained an allowable number of surrogate compounds outside limits: DUP-02_06032014 (680-101934-11). These results have been reported and qualified.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 333838 was outside the method criteria for the following analyte(s): 2,4,6-Tribromophenol. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method(s) 8270D: Surrogate recovery for the following sample(s) was outside control limits: PDMW-45R_06032014 (680-101934-7). Re-extraction and/or re-analysis was performed outside of holding time with acceptable results. Both sets of results are reported. The sample that was extracted outside hold time will have an "H" Flag.

METALS (ICP)

Samples ERB-01_06032014 (680-101934-1), FB-01_06032014 (680-101934-2), ERB-02-06032014 (680-101934-3), TMW-4R_06032014 (680-101934-4), MW-01_06032014 (680-101934-5), PDMW-8R_06032014 (680-101934-6), PDMW-45R_06032014 (680-101934-7), PDMW-29D_06032014 (680-101934-8), PDMW-30R_06032014 (680-101934-9), DUP-01_06032014 (680-101934-10) and DUP-02_06032014 (680-101934-11) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C.

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Job ID: 680-101934-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

AMMONIA

Samples ERB-01_06032014 (680-101934-1), FB-01_06032014 (680-101934-2), ERB-02-06032014 (680-101934-3), TMW-4R_06032014 (680-101934-4), MW-01_06032014 (680-101934-5), PDMW-8R_06032014 (680-101934-6), PDMW-45R_06032014 (680-101934-7), PDMW-29D_06032014 (680-101934-8), PDMW-30R_06032014 (680-101934-9), DUP-01_06032014 (680-101934-10) and DUP-02_06032014 (680-101934-11) were analyzed for ammonia in accordance with EPA Method 350.1.

Method(s) 350.1: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 332667 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 350.1: Field Blank sample has a hit. Sample was originally run on 6/5/14 and has a result of 0.10043 (reference batch 680-332667). Sample was rerun on 6/6/14 and had a result of 0.05394 (reference batch 680-333058). Sample was repoured and re-run several times, but results continued to be high. Reagents were made fresh prior to analysis, but results were still high.

Samples TMW-4R_06032014 (680-101934-4)[5X], MW-01_06032014 (680-101934-5)[20X], PDMW-8R_06032014 (680-101934-6)[50X], PDMW-45R_06032014 (680-101934-7)[5X], PDMW-29D_06032014 (680-101934-8)[10X], DUP-01_06032014 (680-101934-10)[10X] and DUP-02_06032014 (680-101934-11)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

NITRATE-NITRITE AS NITROGEN

Samples ERB-01_06032014 (680-101934-1), FB-01_06032014 (680-101934-2), ERB-02-06032014 (680-101934-3), TMW-4R_06032014 (680-101934-4), MW-01_06032014 (680-101934-5), PDMW-8R_06032014 (680-101934-6), PDMW-45R_06032014 (680-101934-7), PDMW-29D_06032014 (680-101934-8), PDMW-30R_06032014 (680-101934-9), DUP-01_06032014 (680-101934-10) and DUP-02_06032014 (680-101934-11) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 06/04/2014.

Method(s) 353.2: Sample 680-101934-2 (Field Blank) was observed to have an analyte hit in the NO₃+NO₂ channel; sample was reanalyzed on 06/05/14 with consistent results.

Definitions/Glossary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits
H	Sample was prepped or analyzed beyond the specified holding time

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-101934-1	ERB-01_06032014	Water	06/03/14 10:15	06/04/14 08:44
680-101934-2	FB-01_06032014	Water	06/03/14 10:45	06/04/14 08:44
680-101934-3	ERB-02-06032014	Water	06/03/14 10:50	06/04/14 08:44
680-101934-4	TMW-4R_06032014	Water	06/03/14 12:30	06/04/14 08:44
680-101934-5	MW-01_06032014	Water	06/03/14 12:45	06/04/14 08:44
680-101934-6	PDMW-8R_06032014	Water	06/03/14 14:05	06/04/14 08:44
680-101934-7	PDMW-45R_06032014	Water	06/03/14 14:20	06/04/14 08:44
680-101934-8	PDMW-29D_06032014	Water	06/03/14 16:10	06/04/14 08:44
680-101934-9	PDMW-30R_06032014	Water	06/03/14 16:40	06/04/14 08:44
680-101934-10	DUP-01_06032014	Water	06/03/14 00:00	06/04/14 08:44
680-101934-11	DUP-02_06032014	Water	06/03/14 00:00	06/04/14 08:44
680-101934-12	TRIPBLANK_06032014	Water	06/03/14 00:00	06/04/14 08:44

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: ERB-01_06032014

Lab Sample ID: 680-101934-1

Date Collected: 06/03/14 10:15

Matrix: Water

Date Received: 06/04/14 08:44

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 19:41	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 19:41	1
Toluene	1.0	U	1.0		ug/L			06/09/14 19:41	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 19:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	91		70 - 130		06/09/14 19:41	1
Dibromofluoromethane	95		70 - 130		06/09/14 19:41	1
Toluene-d8 (Surr)	101		70 - 130		06/09/14 19:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Acenaphthylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Benzo[a]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Benzo[a]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Benzo[b]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Benzo[g,h,i]perylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Benzo[k]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Chrysene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Dibenz[a,h]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Fluorene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Indeno[1,2,3-cd]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
1-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
2-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Naphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Phenanthrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1
Pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 14:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	64		38 - 130	06/10/14 15:11	06/12/14 14:15	1
Nitrobenzene-d5 (Surr)	79		39 - 130	06/10/14 15:11	06/12/14 14:15	1
Terphenyl-d14 (Surr)	92		10 - 143	06/10/14 15:11	06/12/14 14:15	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 15:35	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 15:35	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 15:35	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 15:35	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 15:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.11		0.050		mg/L			06/05/14 15:12	1
Nitrate as N	0.050	U	0.050		mg/L			06/04/14 15:36	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: FB-01_06032014

Lab Sample ID: 680-101934-2

Date Collected: 06/03/14 10:45

Matrix: Water

Date Received: 06/04/14 08:44

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 20:04	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 20:04	1
Toluene	1.0	U	1.0		ug/L			06/09/14 20:04	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 20:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	90		70 - 130		06/09/14 20:04	1
Dibromofluoromethane	93		70 - 130		06/09/14 20:04	1
Toluene-d8 (Surr)	102		70 - 130		06/09/14 20:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Acenaphthylene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Anthracene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Benzo[a]anthracene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Benzo[a]pyrene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Benzo[b]fluoranthene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Benzo[g,h,i]perylene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Benzo[k]fluoranthene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Chrysene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Dibenz(a,h)anthracene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Fluoranthene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Fluorene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Indeno[1,2,3-cd]pyrene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
1-Methylnaphthalene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
2-Methylnaphthalene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Naphthalene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Phenanthrene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1
Pyrene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 14:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	61		38 - 130	06/10/14 15:11	06/12/14 14:38	1
Nitrobenzene-d5 (Surr)	73		39 - 130	06/10/14 15:11	06/12/14 14:38	1
Terphenyl-d14 (Surr)	86		10 - 143	06/10/14 15:11	06/12/14 14:38	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 15:56	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 15:56	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 15:56	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 15:56	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 15:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.054		0.050		mg/L			06/06/14 11:56	1
Nitrate as N	0.17		0.050		mg/L			06/04/14 15:40	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: ERB-02-06032014

Lab Sample ID: 680-101934-3

Date Collected: 06/03/14 10:50

Matrix: Water

Date Received: 06/04/14 08:44

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 20:27	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 20:27	1
Toluene	1.0	U	1.0		ug/L			06/09/14 20:27	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 20:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	91		70 - 130		06/09/14 20:27	1
Dibromofluoromethane	98		70 - 130		06/09/14 20:27	1
Toluene-d8 (Surr)	102		70 - 130		06/09/14 20:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Acenaphthylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Benzo[a]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Benzo[a]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Benzo[b]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Benzo[g,h,i]perylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Benzo[k]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Chrysene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Dibenz[a,h]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Fluorene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Indeno[1,2,3-cd]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
1-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
2-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Naphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Phenanthrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1
Pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	65		38 - 130	06/10/14 15:11	06/12/14 15:02	1
Nitrobenzene-d5 (Surr)	75		39 - 130	06/10/14 15:11	06/12/14 15:02	1
Terphenyl-d14 (Surr)	91		10 - 143	06/10/14 15:11	06/12/14 15:02	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:01	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:01	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:01	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 16:01	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.10		0.050		mg/L			06/05/14 15:21	1
Nitrate as N	0.12		0.050		mg/L			06/04/14 15:41	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: TMW-4R_06032014

Lab Sample ID: 680-101934-4

Date Collected: 06/03/14 12:30

Matrix: Water

Date Received: 06/04/14 08:44

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 20:50	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 20:50	1
Toluene	1.0	U	1.0		ug/L			06/09/14 20:50	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 20:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		70 - 130		06/09/14 20:50	1
Dibromofluoromethane	96		70 - 130		06/09/14 20:50	1
Toluene-d8 (Surr)	103		70 - 130		06/09/14 20:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Acenaphthylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Benzo[a]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Benzo[a]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Benzo[b]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Benzo[g,h,i]perylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Benzo[k]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Chrysene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Dibenz[a,h]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Fluorene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Indeno[1,2,3-cd]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
1-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
2-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Naphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Phenanthrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1
Pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 15:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	57		38 - 130	06/10/14 15:11	06/12/14 15:25	1
Nitrobenzene-d5 (Surr)	64		39 - 130	06/10/14 15:11	06/12/14 15:25	1
Terphenyl-d14 (Surr)	52		10 - 143	06/10/14 15:11	06/12/14 15:25	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:05	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:05	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:05	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 16:05	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	6.1		0.25		mg/L			06/05/14 15:50	5
Nitrate as N	0.050	U	0.050		mg/L			06/04/14 15:43	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: MW-01_06032014

Lab Sample ID: 680-101934-5

Date Collected: 06/03/14 12:45

Matrix: Water

Date Received: 06/04/14 08:44

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 21:13	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 21:13	1
Toluene	1.0	U	1.0		ug/L			06/09/14 21:13	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 21:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	91		70 - 130					06/09/14 21:13	1
Dibromofluoromethane	93		70 - 130					06/09/14 21:13	1
Toluene-d8 (Surr)	101		70 - 130					06/09/14 21:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Acenaphthylene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Anthracene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Benzo[a]anthracene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Benzo[a]pyrene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Benzo[b]fluoranthene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Benzo[g,h,i]perylene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Benzo[k]fluoranthene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Chrysene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Dibenz[a,h]anthracene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Fluoranthene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Fluorene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Indeno[1,2,3-cd]pyrene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
1-Methylnaphthalene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
2-Methylnaphthalene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Naphthalene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Phenanthrene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Pyrene	9.5	U	9.5		ug/L		06/10/14 15:11	06/12/14 15:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	59		38 - 130				06/10/14 15:11	06/12/14 15:48	1
Nitrobenzene-d5 (Surr)	72		39 - 130				06/10/14 15:11	06/12/14 15:48	1
Terphenyl-d14 (Surr)	61		10 - 143				06/10/14 15:11	06/12/14 15:48	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:18	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:18	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:18	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 16:18	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	25		1.0		mg/L			06/05/14 16:09	20
Nitrate as N	0.050	U	0.050		mg/L			06/04/14 15:46	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: PDMW-8R_06032014

Lab Sample ID: 680-101934-6

Date Collected: 06/03/14 14:05

Matrix: Water

Date Received: 06/04/14 08:44

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 21:37	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 21:37	1
Toluene	1.0	U	1.0		ug/L			06/09/14 21:37	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 21:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		70 - 130					06/09/14 21:37	1
Dibromofluoromethane	95		70 - 130					06/09/14 21:37	1
Toluene-d8 (Surr)	102		70 - 130					06/09/14 21:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Acenaphthylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Benzo[a]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Benzo[a]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Benzo[b]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Benzo[g,h,i]perylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Benzo[k]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Chrysene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Dibenz[a,h]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Fluorene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Indeno[1,2,3-cd]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
1-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
2-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Naphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Phenanthrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	59		38 - 130				06/10/14 15:11	06/12/14 16:12	1
Nitrobenzene-d5 (Surr)	68		39 - 130				06/10/14 15:11	06/12/14 16:12	1
Terphenyl-d14 (Surr)	62		10 - 143				06/10/14 15:11	06/12/14 16:12	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	29		20		ug/L		06/06/14 10:16	06/10/14 16:22	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:22	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:22	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 16:22	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	62		2.5		mg/L			06/05/14 16:09	50
Nitrate as N	0.050	U	0.050		mg/L			06/04/14 15:47	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: PDMW-45R_06032014

Lab Sample ID: 680-101934-7

Date Collected: 06/03/14 14:20

Matrix: Water

Date Received: 06/04/14 08:44

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 22:00	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 22:00	1
Toluene	1.0	U	1.0		ug/L			06/09/14 22:00	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 22:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	90		70 - 130		06/09/14 22:00	1
Dibromofluoromethane	94		70 - 130		06/09/14 22:00	1
Toluene-d8 (Surr)	102		70 - 130		06/09/14 22:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Acenaphthylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Benzo[a]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Benzo[a]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Benzo[b]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Benzo[g,h,i]perylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Benzo[k]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Chrysene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Dibenz(a,h)anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Fluorene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Indeno[1,2,3-cd]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
1-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
2-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Naphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Phenanthrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1
Pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 16:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	24	X	38 - 130	06/10/14 15:11	06/12/14 16:35	1
Nitrobenzene-d5 (Surr)	22	X	39 - 130	06/10/14 15:11	06/12/14 16:35	1
Terphenyl-d14 (Surr)	48		10 - 143	06/10/14 15:11	06/12/14 16:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Acenaphthylene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Anthracene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Benzo[a]anthracene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Benzo[a]pyrene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Benzo[b]fluoranthene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Benzo[g,h,i]perylene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Benzo[k]fluoranthene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Chrysene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Dibenz(a,h)anthracene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Fluoranthene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Fluorene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: PDMW-45R_06032014

Lab Sample ID: 680-101934-7

Date Collected: 06/03/14 14:20

Matrix: Water

Date Received: 06/04/14 08:44

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indeno[1,2,3-cd]pyrene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
1-Methylnaphthalene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
2-Methylnaphthalene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Naphthalene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Phenanthrene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1
Pyrene	9.4	U H	9.4		ug/L		06/11/14 16:18	06/12/14 19:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	54		38 - 130	06/11/14 16:18	06/12/14 19:55	1
Nitrobenzene-d5 (Surr)	72		39 - 130	06/11/14 16:18	06/12/14 19:55	1
Terphenyl-d14 (Surr)	54		10 - 143	06/11/14 16:18	06/12/14 19:55	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:26	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:26	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:26	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 16:26	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	8.6		0.25		mg/L			06/05/14 15:59	5
Nitrate as N	0.050	U	0.050		mg/L			06/04/14 15:49	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: PDMW-29D_06032014

Lab Sample ID: 680-101934-8

Date Collected: 06/03/14 16:10

Matrix: Water

Date Received: 06/04/14 08:44

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 22:23	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 22:23	1
Toluene	1.0	U	1.0		ug/L			06/09/14 22:23	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 22:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	91		70 - 130		06/09/14 22:23	1
Dibromofluoromethane	95		70 - 130		06/09/14 22:23	1
Toluene-d8 (Surr)	102		70 - 130		06/09/14 22:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Acenaphthylene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Anthracene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Benzo[a]anthracene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Benzo[a]pyrene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Benzo[b]fluoranthene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Benzo[g,h,i]perylene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Benzo[k]fluoranthene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Chrysene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Dibenz[a,h]anthracene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Fluoranthene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Fluorene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Indeno[1,2,3-cd]pyrene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
1-Methylnaphthalene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
2-Methylnaphthalene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Naphthalene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Phenanthrene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1
Pyrene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 16:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	60		38 - 130	06/10/14 15:11	06/12/14 16:58	1
Nitrobenzene-d5 (Surr)	69		39 - 130	06/10/14 15:11	06/12/14 16:58	1
Terphenyl-d14 (Surr)	65		10 - 143	06/10/14 15:11	06/12/14 16:58	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:30	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:30	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:30	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 16:30	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	11		0.50		mg/L			06/05/14 16:09	10
Nitrate as N	0.050	U	0.050		mg/L			06/04/14 15:50	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: PDMW-30R_06032014

Lab Sample ID: 680-101934-9

Date Collected: 06/03/14 16:40

Matrix: Water

Date Received: 06/04/14 08:44

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 22:46	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 22:46	1
Toluene	1.0	U	1.0		ug/L			06/09/14 22:46	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 22:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		70 - 130		06/09/14 22:46	1
Dibromofluoromethane	95		70 - 130		06/09/14 22:46	1
Toluene-d8 (Surr)	102		70 - 130		06/09/14 22:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Acenaphthylene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Anthracene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Benzo[a]anthracene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Benzo[a]pyrene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Benzo[b]fluoranthene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Benzo[g,h,i]perylene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Benzo[k]fluoranthene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Chrysene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Dibenz[a,h]anthracene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Fluoranthene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Fluorene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Indeno[1,2,3-cd]pyrene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
1-Methylnaphthalene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
2-Methylnaphthalene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Naphthalene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Phenanthrene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1
Pyrene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 17:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	59		38 - 130	06/10/14 15:11	06/12/14 17:22	1
Nitrobenzene-d5 (Surr)	68		39 - 130	06/10/14 15:11	06/12/14 17:22	1
Terphenyl-d14 (Surr)	67		10 - 143	06/10/14 15:11	06/12/14 17:22	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:35	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:35	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:35	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 16:35	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.6		0.050		mg/L			06/05/14 15:21	1
Nitrate as N	0.050	U	0.050		mg/L			06/04/14 15:51	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: DUP-01_06032014

Lab Sample ID: 680-101934-10

Date Collected: 06/03/14 00:00

Matrix: Water

Date Received: 06/04/14 08:44

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 23:09	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 23:09	1
Toluene	1.0	U	1.0		ug/L			06/09/14 23:09	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 23:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	92		70 - 130					06/09/14 23:09	1
Dibromofluoromethane	96		70 - 130					06/09/14 23:09	1
Toluene-d8 (Surr)	102		70 - 130					06/09/14 23:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Acenaphthylene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Anthracene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Benzo[a]anthracene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Benzo[a]pyrene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Benzo[b]fluoranthene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Benzo[g,h,i]perylene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Benzo[k]fluoranthene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Chrysene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Dibenz[a,h]anthracene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Fluoranthene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Fluorene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Indeno[1,2,3-cd]pyrene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
1-Methylnaphthalene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
2-Methylnaphthalene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Naphthalene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Phenanthrene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Pyrene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 17:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	56		38 - 130				06/10/14 15:11	06/12/14 17:45	1
Nitrobenzene-d5 (Surr)	68		39 - 130				06/10/14 15:11	06/12/14 17:45	1
Terphenyl-d14 (Surr)	51		10 - 143				06/10/14 15:11	06/12/14 17:45	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:39	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:39	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:39	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 16:39	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	18		0.50		mg/L			06/05/14 16:09	10
Nitrate as N	0.050	U	0.050		mg/L			06/04/14 15:52	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: DUP-02_06032014

Lab Sample ID: 680-101934-11

Date Collected: 06/03/14 00:00

Matrix: Water

Date Received: 06/04/14 08:44

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 23:33	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 23:33	1
Toluene	1.0	U	1.0		ug/L			06/09/14 23:33	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 23:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	92		70 - 130					06/09/14 23:33	1
Dibromofluoromethane	95		70 - 130					06/09/14 23:33	1
Toluene-d8 (Surr)	102		70 - 130					06/09/14 23:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Acenaphthylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Benzo[a]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Benzo[a]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Benzo[b]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Benzo[g,h,i]perylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Benzo[k]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Chrysene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Dibenz[a,h]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Fluorene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Indeno[1,2,3-cd]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
1-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
2-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Naphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Phenanthrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	38		38 - 130				06/10/14 15:11	06/12/14 18:09	1
Nitrobenzene-d5 (Surr)	33	X	39 - 130				06/10/14 15:11	06/12/14 18:09	1
Terphenyl-d14 (Surr)	63		10 - 143				06/10/14 15:11	06/12/14 18:09	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	28		20		ug/L		06/06/14 10:16	06/10/14 16:43	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:43	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 16:43	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 16:43	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 16:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	63		2.5		mg/L			06/05/14 16:12	50
Nitrate as N	0.050	U	0.050		mg/L			06/04/14 15:53	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: TRIPBLANK_06032014

Lab Sample ID: 680-101934-12

Date Collected: 06/03/14 00:00

Matrix: Water

Date Received: 06/04/14 08:44

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 16:58	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 16:58	1
Toluene	1.0	U	1.0		ug/L			06/09/14 16:58	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 16:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	91		70 - 130		06/09/14 16:58	1
Dibromofluoromethane	94		70 - 130		06/09/14 16:58	1
Toluene-d8 (Surr)	100		70 - 130		06/09/14 16:58	1

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-333167/8

Matrix: Water

Analysis Batch: 333167

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/09/14 16:23	1
Ethylbenzene	1.0	U	1.0		ug/L			06/09/14 16:23	1
Toluene	1.0	U	1.0		ug/L			06/09/14 16:23	1
Xylenes, Total	2.0	U	2.0		ug/L			06/09/14 16:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		70 - 130		06/09/14 16:23	1
Dibromofluoromethane	93		70 - 130		06/09/14 16:23	1
Toluene-d8 (Surr)	101		70 - 130		06/09/14 16:23	1

Lab Sample ID: LCS 680-333167/4

Matrix: Water

Analysis Batch: 333167

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	50.4		ug/L		101	74 - 123
Ethylbenzene	50.0	48.5		ug/L		97	78 - 125
Toluene	50.0	48.0		ug/L		96	77 - 125
Xylenes, Total	150	147		ug/L		98	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	99		70 - 130
Dibromofluoromethane	111		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Lab Sample ID: LCSD 680-333167/5

Matrix: Water

Analysis Batch: 333167

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	52.4		ug/L		105	74 - 123	4	30
Ethylbenzene	50.0	48.5		ug/L		97	78 - 125	0	30
Toluene	50.0	50.3		ug/L		101	77 - 125	5	30
Xylenes, Total	150	146		ug/L		97	80 - 124	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	104		70 - 130
Toluene-d8 (Surr)	100		70 - 130

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

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

Lab Sample ID: MB 680-333327/21-A

Matrix: Water

Analysis Batch: 333622

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 333327

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Acenaphthylene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Anthracene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Benzo[a]anthracene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Benzo[a]pyrene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Chrysene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Dibenz(a,h)anthracene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Fluorene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
1-Methylnaphthalene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
2-Methylnaphthalene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Naphthalene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Phenanthrene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Pyrene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	76		38 - 130	06/10/14 15:11	06/11/14 21:30	1
Nitrobenzene-d5 (Surr)	83		39 - 130	06/10/14 15:11	06/11/14 21:30	1
Terphenyl-d14 (Surr)	84		10 - 143	06/10/14 15:11	06/11/14 21:30	1

Lab Sample ID: LCS 680-333327/22-A

Matrix: Water

Analysis Batch: 333622

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 333327

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	65.8		ug/L		66	41 - 99
Acenaphthylene	100	62.6		ug/L		63	32 - 118
Anthracene	100	74.8		ug/L		75	50 - 103
Benzo[a]anthracene	100	72.7		ug/L		73	53 - 109
Benzo[a]pyrene	100	68.6		ug/L		69	38 - 111
Benzo[b]fluoranthene	100	71.4		ug/L		71	53 - 108
Benzo[g,h,i]perylene	100	66.5		ug/L		67	42 - 114
Benzo[k]fluoranthene	100	67.9		ug/L		68	49 - 108
Chrysene	100	70.2		ug/L		70	54 - 111
Dibenz(a,h)anthracene	100	68.1		ug/L		68	48 - 110
Fluoranthene	100	72.0		ug/L		72	48 - 111
Fluorene	100	74.8		ug/L		75	50 - 105
Indeno[1,2,3-cd]pyrene	100	62.7		ug/L		63	34 - 115
1-Methylnaphthalene	100	54.6		ug/L		55	50 - 130
2-Methylnaphthalene	100	51.8		ug/L		52	32 - 92
Naphthalene	100	52.3		ug/L		52	29 - 91
Phenanthrene	100	74.5		ug/L		75	52 - 108
Pyrene	100	71.9		ug/L		72	50 - 111

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

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

Lab Sample ID: LCS 680-333327/22-A

Matrix: Water

Analysis Batch: 333622

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 333327

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	71		38 - 130
Nitrobenzene-d5 (Surr)	70		39 - 130
Terphenyl-d14 (Surr)	80		10 - 143

Lab Sample ID: MB 680-333599/2-A

Matrix: Water

Analysis Batch: 333830

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 333599

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Acenaphthylene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Anthracene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Benzo[a]anthracene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Benzo[a]pyrene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Chrysene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Dibenz(a,h)anthracene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Fluoranthene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Fluorene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
1-Methylnaphthalene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
2-Methylnaphthalene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Naphthalene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Phenanthrene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1
Pyrene	10	U	10		ug/L		06/11/14 16:18	06/12/14 18:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	68		38 - 130	06/11/14 16:18	06/12/14 18:42	1
Nitrobenzene-d5 (Surr)	81		39 - 130	06/11/14 16:18	06/12/14 18:42	1
Terphenyl-d14 (Surr)	91		10 - 143	06/11/14 16:18	06/12/14 18:42	1

Lab Sample ID: LCS 680-333599/3-A

Matrix: Water

Analysis Batch: 333830

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 333599

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	68.6		ug/L		69	41 - 99
Acenaphthylene	100	68.5		ug/L		69	32 - 118
Anthracene	100	74.3		ug/L		74	50 - 103
Benzo[a]anthracene	100	79.1		ug/L		79	53 - 109
Benzo[a]pyrene	100	71.6		ug/L		72	38 - 111
Benzo[b]fluoranthene	100	71.0		ug/L		71	53 - 108
Benzo[g,h,i]perylene	100	69.8		ug/L		70	42 - 114
Benzo[k]fluoranthene	100	77.8		ug/L		78	49 - 108
Chrysene	100	77.4		ug/L		77	54 - 111
Dibenz(a,h)anthracene	100	72.9		ug/L		73	48 - 110

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

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

Lab Sample ID: LCS 680-333599/3-A

Matrix: Water

Analysis Batch: 333830

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 333599

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoranthene	100	75.0		ug/L		75	48 - 111
Fluorene	100	78.3		ug/L		78	50 - 105
Indeno[1,2,3-cd]pyrene	100	66.8		ug/L		67	34 - 115
1-Methylnaphthalene	100	64.2		ug/L		64	50 - 130
2-Methylnaphthalene	100	62.6		ug/L		63	32 - 92
Naphthalene	100	56.4		ug/L		56	29 - 91
Phenanthrene	100	74.9		ug/L		75	52 - 108
Pyrene	100	78.2		ug/L		78	50 - 111

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	67		38 - 130
Nitrobenzene-d5 (Surr)	70		39 - 130
Terphenyl-d14 (Surr)	82		10 - 143

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-332730/1-A

Matrix: Water

Analysis Batch: 333550

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 332730

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 15:26	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 15:26	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 15:26	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 15:26	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 15:26	1

Lab Sample ID: LCS 680-332730/2-A

Matrix: Water

Analysis Batch: 333550

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 332730

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	99.5		ug/L		99	75 - 125
Chromium	100	99.4		ug/L		99	75 - 125
Lead	50.0	49.8		ug/L		100	75 - 125
Nickel	100	98.1		ug/L		98	75 - 125
Zinc	100	98.2		ug/L		98	75 - 125

Lab Sample ID: 680-101934-1 MS

Matrix: Water

Analysis Batch: 333550

Client Sample ID: ERB-01_06032014

Prep Type: Total/NA

Prep Batch: 332730

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	20	U	100	95.6		ug/L		96	75 - 125
Chromium	10	U	100	96.7		ug/L		97	75 - 125
Lead	10	U	50.0	49.0		ug/L		98	75 - 125
Nickel	40	U	100	96.0		ug/L		96	75 - 125
Zinc	20	U	100	89.8		ug/L		90	75 - 125

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-101934-1 MSD

Matrix: Water

Analysis Batch: 333550

Client Sample ID: ERB-01_06032014

Prep Type: Total/NA

Prep Batch: 332730

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	20	U	100	96.8		ug/L		97	75 - 125	1	20
Chromium	10	U	100	98.0		ug/L		98	75 - 125	1	20
Lead	10	U	50.0	49.1		ug/L		98	75 - 125	0	20
Nickel	40	U	100	97.6		ug/L		98	75 - 125	2	20
Zinc	20	U	100	97.3		ug/L		97	75 - 125	8	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-332667/2

Matrix: Water

Analysis Batch: 332667

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.050	U	0.050		mg/L			06/05/14 15:12	1

Lab Sample ID: LCS 680-332667/20

Matrix: Water

Analysis Batch: 332667

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.01		mg/L		101	90 - 110

Lab Sample ID: 680-101934-1 MS

Matrix: Water

Analysis Batch: 332667

Client Sample ID: ERB-01_06032014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.11		1.00	1.28	F1	mg/L		117	90 - 110

Lab Sample ID: 680-101934-1 MSD

Matrix: Water

Analysis Batch: 332667

Client Sample ID: ERB-01_06032014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	0.11		1.00	1.32	F1	mg/L		121	90 - 110	3	30

Lab Sample ID: 680-101934-3 DU

Matrix: Water

Analysis Batch: 332667

Client Sample ID: ERB-02-06032014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ammonia	0.10		0.0983		mg/L		3	30

Lab Sample ID: MB 680-333058/2

Matrix: Water

Analysis Batch: 333058

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.050	U	0.050		mg/L			06/06/14 11:56	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 680-333058/12

Matrix: Water

Analysis Batch: 333058

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.04		mg/L		104	90 - 110

Lab Sample ID: LCSD 680-333058/17

Matrix: Water

Analysis Batch: 333058

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.00	1.04		mg/L		104	90 - 110	0	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-332350/13

Matrix: Water

Analysis Batch: 332350

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			06/04/14 15:32	1

Lab Sample ID: 680-101934-11 DU

Matrix: Water

Analysis Batch: 332350

Client Sample ID: DUP-02_06032014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	0.050	U	0.050	U	mg/L		NC	30

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

GC/MS VOA

Analysis Batch: 333167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101934-1	ERB-01_06032014	Total/NA	Water	8260B	
680-101934-2	FB-01_06032014	Total/NA	Water	8260B	
680-101934-3	ERB-02-06032014	Total/NA	Water	8260B	
680-101934-4	TMW-4R_06032014	Total/NA	Water	8260B	
680-101934-5	MW-01_06032014	Total/NA	Water	8260B	
680-101934-6	PDMW-8R_06032014	Total/NA	Water	8260B	
680-101934-7	PDMW-45R_06032014	Total/NA	Water	8260B	
680-101934-8	PDMW-29D_06032014	Total/NA	Water	8260B	
680-101934-9	PDMW-30R_06032014	Total/NA	Water	8260B	
680-101934-10	DUP-01_06032014	Total/NA	Water	8260B	
680-101934-11	DUP-02_06032014	Total/NA	Water	8260B	
680-101934-12	TRIPBLANK_06032014	Total/NA	Water	8260B	
LCS 680-333167/4	Lab Control Sample	Total/NA	Water	8260B	
LCS 680-333167/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-333167/8	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 333327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101934-1	ERB-01_06032014	Total/NA	Water	3520C	
680-101934-2	FB-01_06032014	Total/NA	Water	3520C	
680-101934-3	ERB-02-06032014	Total/NA	Water	3520C	
680-101934-4	TMW-4R_06032014	Total/NA	Water	3520C	
680-101934-5	MW-01_06032014	Total/NA	Water	3520C	
680-101934-6	PDMW-8R_06032014	Total/NA	Water	3520C	
680-101934-7	PDMW-45R_06032014	Total/NA	Water	3520C	
680-101934-8	PDMW-29D_06032014	Total/NA	Water	3520C	
680-101934-9	PDMW-30R_06032014	Total/NA	Water	3520C	
680-101934-10	DUP-01_06032014	Total/NA	Water	3520C	
680-101934-11	DUP-02_06032014	Total/NA	Water	3520C	
LCS 680-333327/22-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-333327/21-A	Method Blank	Total/NA	Water	3520C	

Prep Batch: 333599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101934-7 - RE	PDMW-45R_06032014	Total/NA	Water	3520C	
LCS 680-333599/3-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-333599/2-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 333622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-333327/22-A	Lab Control Sample	Total/NA	Water	8270D	333327
MB 680-333327/21-A	Method Blank	Total/NA	Water	8270D	333327

Analysis Batch: 333830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101934-7 - RE	PDMW-45R_06032014	Total/NA	Water	8270D	333599
LCS 680-333599/3-A	Lab Control Sample	Total/NA	Water	8270D	333599
MB 680-333599/2-A	Method Blank	Total/NA	Water	8270D	333599

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

GC/MS Semi VOA (Continued)

Analysis Batch: 333838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101934-1	ERB-01_06032014	Total/NA	Water	8270D	333327
680-101934-2	FB-01_06032014	Total/NA	Water	8270D	333327
680-101934-3	ERB-02-06032014	Total/NA	Water	8270D	333327
680-101934-4	TMW-4R_06032014	Total/NA	Water	8270D	333327
680-101934-5	MW-01_06032014	Total/NA	Water	8270D	333327
680-101934-6	PDMW-8R_06032014	Total/NA	Water	8270D	333327
680-101934-7	PDMW-45R_06032014	Total/NA	Water	8270D	333327
680-101934-8	PDMW-29D_06032014	Total/NA	Water	8270D	333327
680-101934-9	PDMW-30R_06032014	Total/NA	Water	8270D	333327
680-101934-10	DUP-01_06032014	Total/NA	Water	8270D	333327
680-101934-11	DUP-02_06032014	Total/NA	Water	8270D	333327

Metals

Prep Batch: 332730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101934-1	ERB-01_06032014	Total/NA	Water	3010A	
680-101934-1 MS	ERB-01_06032014	Total/NA	Water	3010A	
680-101934-1 MSD	ERB-01_06032014	Total/NA	Water	3010A	
680-101934-2	FB-01_06032014	Total/NA	Water	3010A	
680-101934-3	ERB-02-06032014	Total/NA	Water	3010A	
680-101934-4	TMW-4R_06032014	Total/NA	Water	3010A	
680-101934-5	MW-01_06032014	Total/NA	Water	3010A	
680-101934-6	PDMW-8R_06032014	Total/NA	Water	3010A	
680-101934-7	PDMW-45R_06032014	Total/NA	Water	3010A	
680-101934-8	PDMW-29D_06032014	Total/NA	Water	3010A	
680-101934-9	PDMW-30R_06032014	Total/NA	Water	3010A	
680-101934-10	DUP-01_06032014	Total/NA	Water	3010A	
680-101934-11	DUP-02_06032014	Total/NA	Water	3010A	
LCS 680-332730/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-332730/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 333550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101934-1	ERB-01_06032014	Total/NA	Water	6010C	332730
680-101934-1 MS	ERB-01_06032014	Total/NA	Water	6010C	332730
680-101934-1 MSD	ERB-01_06032014	Total/NA	Water	6010C	332730
680-101934-2	FB-01_06032014	Total/NA	Water	6010C	332730
680-101934-3	ERB-02-06032014	Total/NA	Water	6010C	332730
680-101934-4	TMW-4R_06032014	Total/NA	Water	6010C	332730
680-101934-5	MW-01_06032014	Total/NA	Water	6010C	332730
680-101934-6	PDMW-8R_06032014	Total/NA	Water	6010C	332730
680-101934-7	PDMW-45R_06032014	Total/NA	Water	6010C	332730
680-101934-8	PDMW-29D_06032014	Total/NA	Water	6010C	332730
680-101934-9	PDMW-30R_06032014	Total/NA	Water	6010C	332730
680-101934-10	DUP-01_06032014	Total/NA	Water	6010C	332730
680-101934-11	DUP-02_06032014	Total/NA	Water	6010C	332730
LCS 680-332730/2-A	Lab Control Sample	Total/NA	Water	6010C	332730
MB 680-332730/1-A	Method Blank	Total/NA	Water	6010C	332730

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

General Chemistry

Analysis Batch: 332350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101934-1	ERB-01_06032014	Total/NA	Water	353.2	
680-101934-1 MS	ERB-01_06032014	Total/NA	Water	353.2	
680-101934-1 MSD	ERB-01_06032014	Total/NA	Water	353.2	
680-101934-2	FB-01_06032014	Total/NA	Water	353.2	
680-101934-3	ERB-02-06032014	Total/NA	Water	353.2	
680-101934-4	TMW-4R_06032014	Total/NA	Water	353.2	
680-101934-5	MW-01_06032014	Total/NA	Water	353.2	
680-101934-6	PDMW-8R_06032014	Total/NA	Water	353.2	
680-101934-7	PDMW-45R_06032014	Total/NA	Water	353.2	
680-101934-8	PDMW-29D_06032014	Total/NA	Water	353.2	
680-101934-9	PDMW-30R_06032014	Total/NA	Water	353.2	
680-101934-10	DUP-01_06032014	Total/NA	Water	353.2	
680-101934-11	DUP-02_06032014	Total/NA	Water	353.2	
680-101934-11 DU	DUP-02_06032014	Total/NA	Water	353.2	
LCS 680-332350/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-332350/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 332667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101934-1	ERB-01_06032014	Total/NA	Water	350.1	
680-101934-1 MS	ERB-01_06032014	Total/NA	Water	350.1	
680-101934-1 MSD	ERB-01_06032014	Total/NA	Water	350.1	
680-101934-3	ERB-02-06032014	Total/NA	Water	350.1	
680-101934-3 DU	ERB-02-06032014	Total/NA	Water	350.1	
680-101934-4	TMW-4R_06032014	Total/NA	Water	350.1	
680-101934-5	MW-01_06032014	Total/NA	Water	350.1	
680-101934-6	PDMW-8R_06032014	Total/NA	Water	350.1	
680-101934-7	PDMW-45R_06032014	Total/NA	Water	350.1	
680-101934-8	PDMW-29D_06032014	Total/NA	Water	350.1	
680-101934-9	PDMW-30R_06032014	Total/NA	Water	350.1	
680-101934-10	DUP-01_06032014	Total/NA	Water	350.1	
680-101934-11	DUP-02_06032014	Total/NA	Water	350.1	
LCS 680-332667/20	Lab Control Sample	Total/NA	Water	350.1	
MB 680-332667/2	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 333058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101934-2	FB-01_06032014	Total/NA	Water	350.1	
LCS 680-333058/12	Lab Control Sample	Total/NA	Water	350.1	
LCSD 680-333058/17	Lab Control Sample Dup	Total/NA	Water	350.1	
MB 680-333058/2	Method Blank	Total/NA	Water	350.1	

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: ERB-01_06032014

Date Collected: 06/03/14 10:15

Date Received: 06/04/14 08:44

Lab Sample ID: 680-101934-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333167	06/09/14 19:41	MMT	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			251.6 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	251.6 mL	0.5 mL	333838	06/12/14 14:15	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 15:35	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	332667	06/05/14 15:12	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332350	06/04/14 15:36	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: FB-01_06032014

Date Collected: 06/03/14 10:45

Date Received: 06/04/14 08:44

Lab Sample ID: 680-101934-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333167	06/09/14 20:04	MMT	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			256.2 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	256.2 mL	0.5 mL	333838	06/12/14 14:38	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 15:56	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	333058	06/06/14 11:56	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332350	06/04/14 15:40	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: ERB-02-06032014

Date Collected: 06/03/14 10:50

Date Received: 06/04/14 08:44

Lab Sample ID: 680-101934-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333167	06/09/14 20:27	MMT	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			252.3 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	252.3 mL	0.5 mL	333838	06/12/14 15:02	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: ERB-02-06032014

Lab Sample ID: 680-101934-3

Date Collected: 06/03/14 10:50

Matrix: Water

Date Received: 06/04/14 08:44

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 16:01	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	332667	06/05/14 15:21	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332350	06/04/14 15:41	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: TMW-4R_06032014

Lab Sample ID: 680-101934-4

Date Collected: 06/03/14 12:30

Matrix: Water

Date Received: 06/04/14 08:44

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333167	06/09/14 20:50	MMT	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			252.4 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	252.4 mL	0.5 mL	333838	06/12/14 15:25	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 16:05	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		5	2 mL	2 mL	332667	06/05/14 15:50	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332350	06/04/14 15:43	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: MW-01_06032014

Lab Sample ID: 680-101934-5

Date Collected: 06/03/14 12:45

Matrix: Water

Date Received: 06/04/14 08:44

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333167	06/09/14 21:13	MMT	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			262.6 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	262.6 mL	0.5 mL	333838	06/12/14 15:48	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 16:18	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		20	2 mL	2 mL	332667	06/05/14 16:09	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332350	06/04/14 15:46	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: PDMW-8R_06032014

Lab Sample ID: 680-101934-6

Date Collected: 06/03/14 14:05

Matrix: Water

Date Received: 06/04/14 08:44

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333167	06/09/14 21:37	MMT	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			251.4 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	251.4 mL	0.5 mL	333838	06/12/14 16:12	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 16:22	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		50	2 mL	2 mL	332667	06/05/14 16:09	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332350	06/04/14 15:47	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-45R_06032014

Lab Sample ID: 680-101934-7

Date Collected: 06/03/14 14:20

Matrix: Water

Date Received: 06/04/14 08:44

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333167	06/09/14 22:00	MMT	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C	RE		266.1 mL	0.5 mL	333599	06/11/14 16:18	RBS	TAL SAV
Total/NA	Analysis	8270D	RE	1	266.1 mL	0.5 mL	333830	06/12/14 19:55	LEG	TAL SAV
		Instrument ID: CMSE								
Total/NA	Prep	3520C			253.7 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	253.7 mL	0.5 mL	333838	06/12/14 16:35	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 16:26	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		5	2 mL	2 mL	332667	06/05/14 15:59	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332350	06/04/14 15:49	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-29D_06032014

Lab Sample ID: 680-101934-8

Date Collected: 06/03/14 16:10

Matrix: Water

Date Received: 06/04/14 08:44

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333167	06/09/14 22:23	MMT	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			257.8 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	257.8 mL	0.5 mL	333838	06/12/14 16:58	LEG	TAL SAV
		Instrument ID: CMSN								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: PDMW-29D_06032014

Lab Sample ID: 680-101934-8

Date Collected: 06/03/14 16:10

Matrix: Water

Date Received: 06/04/14 08:44

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 16:30	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	332667	06/05/14 16:09	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332350	06/04/14 15:50	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-30R_06032014

Lab Sample ID: 680-101934-9

Date Collected: 06/03/14 16:40

Matrix: Water

Date Received: 06/04/14 08:44

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333167	06/09/14 22:46	MMT	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			255.2 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	255.2 mL	0.5 mL	333838	06/12/14 17:22	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 16:35	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	332667	06/05/14 15:21	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332350	06/04/14 15:51	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: DUP-01_06032014

Lab Sample ID: 680-101934-10

Date Collected: 06/03/14 00:00

Matrix: Water

Date Received: 06/04/14 08:44

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333167	06/09/14 23:09	MMT	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			259.5 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	259.5 mL	0.5 mL	333838	06/12/14 17:45	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 16:39	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	332667	06/05/14 16:09	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332350	06/04/14 15:52	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Client Sample ID: DUP-02_06032014

Lab Sample ID: 680-101934-11

Date Collected: 06/03/14 00:00

Matrix: Water

Date Received: 06/04/14 08:44

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333167	06/09/14 23:33	MMT	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			252.5 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	252.5 mL	0.5 mL	333838	06/12/14 18:09	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 16:43	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		50	2 mL	2 mL	332667	06/05/14 16:12	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332350	06/04/14 15:53	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: TRIPBLANK_06032014

Lab Sample ID: 680-101934-12

Date Collected: 06/03/14 00:00

Matrix: Water

Date Received: 06/04/14 08:44

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333167	06/09/14 16:58	MMT	TAL SAV
		Instrument ID: CMSAD								

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14 *
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14 *
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14 *
GA Dept. of Agriculture	State Program	4	N/A	06-30-14 *
Georgia	State Program	4	N/A	06-30-14 *
Georgia	State Program	4	803	06-30-14 *
Guam	State Program	9	09-005r	04-16-15
Hawaii	State Program	9	N/A	06-30-14 *
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14 *
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	02-28-15
Louisiana	NELAP	6	30690	06-30-14 *
Louisiana (DW)	NELAP	6	LA140023	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14 *
Michigan	State Program	5	9925	06-30-14 *
Mississippi	State Program	4	N/A	06-30-14 *
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14 *
New Jersey	NELAP	2	GA769	06-30-14 *
New Mexico	State Program	6	N/A	06-30-14 *
New York	NELAP	2	10842	03-31-15
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14 *
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-15
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14 *
Tennessee	State Program	4	TN02961	06-30-14 *
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-15
Washington	State Program	10	C805	06-10-15
West Virginia DEP	State Program	3	94	06-30-14 *
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14 *

* Certification renewal pending - certification considered valid.

TestAmerica Savannah

Method Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101934-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858



CHAIN OF CUSTODY

LABORATORY INFORMATION

☒ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
☐ TestAmerica Pensacola - 3355 McLamore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

CSXT PROJECT INFORMATION 9415575

CSXT Project Number: 64300-5240600

CSXT Project Name: Hutchinson Island

CSXT Contact: Sam Ross

Proj. State (State of Origin) GA

Proj. City: Savannah

Company: AMEC E&I

Address: 3800 Ezell Rd Ste 100

City, State, Zip: Nashville, TN 37211

PM: Pat Harrison

Email: pat.harrison@amec.com

Phone: (615) 658-1374

COC #

SHIPMENT INFORMATION

Shipment Method:

Shipment Tracking No:

Project #: 64300-5240

CONSULTANT INFORMATION

Company: AMEC E&I

Address: 3800 Ezell Rd Ste 100

City, State, Zip: Nashville, TN 37211

PM: Pat Harrison

Email: pat.harrison@amec.com

Phone: (615) 658-1374

Turnaround Time: ☐ Standard 6-13 Days

☐ 1 Day Rush

☒ 2 Day Rush

☐ 3 Day Rush

☐ Other

☐ Other Deliv:

☒ CSXT Standard (Level II)

☐ Level III

☐ Level IV

☐ EDD Required, Format:

☐ Level II

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Sample Collection			Filtered Y or N	Type Comp or Grab	Matrix Code
		Date	Time	Sampler			
ERB-01-06032014	9	6/3/2014	1015	PLG	N	G	GW
FB-01-06032014	9	6/3/2014	1045	PLG	N	G	GW
ERB-02-06032014	9	6/3/2014	1050	JT	N	G	GW
TMW-4R-06032014	9	6/3/2014	1230	JT	N	G	GW
MMW-01-06032014	9	6/3/2014	1245	JT	N	G	GW
PDMW-8R-06032014	9	6/3/2014	1405	JT	N	G	GW
PDMW-45R-06032014	9	6/3/2014	1420	JT	N	G	GW
PDMW-29D-06032014	9	6/3/2014	1610	JT	N	G	GW
PDMW-30R-06032014	9	6/3/2014	1640	PLG	N	G	GW
DUP-01-06032014	9	6/3/2014	-	PLG	N	G	GW

Date/Time:

Received By:

Date/Time:

Received By:

Date/Time:

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Date/Time:

Received By:

Date/Time:

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 CHAIN OF CUSTODY		LABORATORY INFORMATION <input checked="" type="checkbox"/> TestAmerica Savannah - 5102 LaRochelle Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165 <input type="checkbox"/> TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772 <input type="checkbox"/> TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049 <input type="checkbox"/> TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671 <input type="checkbox"/> TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991 <input type="checkbox"/> TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211																																																																																																																														
		SHIPMENT INFORMATION Shipment Method: Shipment Tracking No:																																																																																																																														
		COC # Project #: 6-4300-5240																																																																																																																														
		CONSULTANT INFORMATION Company: AMEC E&I Address: 3800 Ezell Rd Ste 100 City, State, Zip: Nashville, TN 37211 Phone: (615) 658-1374 Email: pat.harrison@ames.com Fax:																																																																																																																														
CSXT PROJECT INFORMATION CSXT Project Number: 9415575 CSXT Project Name: Hutchinson Island CSXT Contact: Sam Ross		Proj. State (State of Origin): GA Proj. City: Savannah LWN: ENV13891SMR		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="2">Turnaround Time:</th> <th colspan="2">Preservative Codes:</th> <th colspan="2">Matrix Codes:</th> <th colspan="2">Matrix Codes:</th> <th colspan="2">Matrix Codes:</th> <th colspan="2">Matrix Codes:</th> </tr> <tr> <td><input type="checkbox"/> Standard 6-13 Days</td> <td><input type="checkbox"/> Other Deliv:</td> <td>0 = No Preservatives</td> <td>3 = Sulfuric Acid</td> <td>SO = Soil</td> <td>LIQ = Liquid</td> <td>GW = Groundwater</td> <td>SL = Sludge</td> <td>WW = Waste Water</td> <td>OI = Oil</td> <td>SW = Surface Water</td> <td>SOL = Other Solid</td> </tr> <tr> <td><input type="checkbox"/> 1 Day Rush</td> <td><input type="checkbox"/> Specify # Days</td> <td>1 = Hydrochloric Acid</td> <td>4 = Sodium Thiosulfate</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> 2 Day Rush</td> <td><input checked="" type="checkbox"/> Standard 14 Days</td> <td>2 = Nitric Acid</td> <td>5 = Sodium Hydroxide</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> 3 Day Rush</td> <td><input type="checkbox"/> Other</td> <td></td> <td>6 = Other</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>								Turnaround Time:		Preservative Codes:		Matrix Codes:		Matrix Codes:		Matrix Codes:		Matrix Codes:		<input type="checkbox"/> Standard 6-13 Days	<input type="checkbox"/> Other Deliv:	0 = No Preservatives	3 = Sulfuric Acid	SO = Soil	LIQ = Liquid	GW = Groundwater	SL = Sludge	WW = Waste Water	OI = Oil	SW = Surface Water	SOL = Other Solid	<input type="checkbox"/> 1 Day Rush	<input type="checkbox"/> Specify # Days	1 = Hydrochloric Acid	4 = Sodium Thiosulfate									<input type="checkbox"/> 2 Day Rush	<input checked="" type="checkbox"/> Standard 14 Days	2 = Nitric Acid	5 = Sodium Hydroxide									<input type="checkbox"/> 3 Day Rush	<input type="checkbox"/> Other		6 = Other																																																																	
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Login Sample Receipt Checklist

Client: AMEC Environment & Infrastructure, Inc.

Job Number: 680-101934-1

Login Number: 101934

List Source: TestAmerica Savannah

List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-101996-1

Client Project/Site: CSX Hutchinson Island VRP

For:

AMEC Environment & Infrastructure, Inc.

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Mr. Steve Foley



Authorized for release by:

6/20/2014 10:34:56 AM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

LINKS

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results through

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Job ID: 680-101996-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Environment & Infrastructure, Inc.
Project: CSX Hutchinson Island VRP
Report Number: 680-101996-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

RECEIPT

The samples were received on 6/5/2014 9:04 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.4° C, 2.8° C and 2.8° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples PDMW-07P_06042014 (680-101996-1), PDMW-46_06042014 (680-101996-2), MW-201_06042014 (680-101996-3), PDMW-19P_06042014 (680-101996-4), PDMW-47_06042014 (680-101996-5), PDMW-23R_06042014 (680-101996-6), PDMW-33R2_06042014 (680-101996-7), PDMW-32R_06042014 (680-101996-9), EW-01_06042014 (680-101996-10) and TRIPBLANK_06042014 (680-101996-12) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples PDMW-07P_06042014 (680-101996-1), PDMW-46_06042014 (680-101996-2), MW-201_06042014 (680-101996-3), PDMW-19P_06042014 (680-101996-4), PDMW-47_06042014 (680-101996-5), PDMW-23R_06042014 (680-101996-6), PDMW-33R2_06042014 (680-101996-7), PDMW-32R_06042014 (680-101996-9) and EW-01_06042014 (680-101996-10) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 333838 was outside the method criteria for the following analyte(s): 2,4,6-Tribromophenol. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

METALS (ICP)

Samples PDMW-07P_06042014 (680-101996-1), PDMW-46_06042014 (680-101996-2), MW-201_06042014 (680-101996-3), PDMW-19P_06042014 (680-101996-4), PDMW-47_06042014 (680-101996-5), PDMW-23R_06042014 (680-101996-6), PDMW-33R2_06042014 (680-101996-7), PDMW-32R_06042014 (680-101996-9) and EW-01_06042014 (680-101996-10) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 06/06/2014 and 06/07/2014 and analyzed on 06/10/2014.

Zinc recovery is outside criteria low for the MSD of sample EW-01_06042014 (680-101996-10) in batch 680-333550.

AMMONIA

Samples PDMW-07P_06042014 (680-101996-1), PDMW-46_06042014 (680-101996-2), MW-201_06042014 (680-101996-3), PDMW-19P_06042014 (680-101996-4), PDMW-47_06042014 (680-101996-5), PDMW-23R_06042014 (680-101996-6), PDMW-33R2_06042014 (680-101996-7), PDMW-48_06042014 (680-101996-8), PDMW-32R_06042014 (680-101996-9), EW-01_06042014 (680-101996-10) and PDMW-50_06042014 (680-101996-11) were analyzed for ammonia in accordance with EPA Method 350.1.

Method(s) 350.1: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 333396 were outside control limits. Sample

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Job ID: 680-101996-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Samples PDMW-07P_06042014 (680-101996-1)[10X], PDMW-46_06042014 (680-101996-2)[2X], MW-201_06042014 (680-101996-3) [10X], PDMW-19P_06042014 (680-101996-4)[5X], PDMW-47_06042014 (680-101996-5)[50X], PDMW-23R_06042014 (680-101996-6) [2X], PDMW-33R2_06042014 (680-101996-7)[10X], PDMW-48_06042014 (680-101996-8)[20X], PDMW-32R_06042014 (680-101996-9) [10X], EW-01_06042014 (680-101996-10)[1000X] and PDMW-50_06042014 (680-101996-11)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

NITRATE-NITRITE AS NITROGEN

Samples PDMW-07P_06042014 (680-101996-1), PDMW-46_06042014 (680-101996-2), MW-201_06042014 (680-101996-3), PDMW-19P_06042014 (680-101996-4), PDMW-47_06042014 (680-101996-5), PDMW-23R_06042014 (680-101996-6), PDMW-33R2_06042014 (680-101996-7), PDMW-48_06042014 (680-101996-8), PDMW-32R_06042014 (680-101996-9), EW-01_06042014 (680-101996-10) and PDMW-50_06042014 (680-101996-11) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2.

Definitions/Glossary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-101996-1	PDMW-07P_06042014	Water	06/04/14 09:45	06/05/14 09:04
680-101996-2	PDMW-46_06042014	Water	06/04/14 09:30	06/05/14 09:04
680-101996-3	MW-201_06042014	Water	06/04/14 10:40	06/05/14 09:04
680-101996-4	PDMW-19P_06042014	Water	06/04/14 10:55	06/05/14 09:04
680-101996-5	PDMW-47_06042014	Water	06/04/14 11:45	06/05/14 09:04
680-101996-6	PDMW-23R_06042014	Water	06/04/14 12:45	06/05/14 09:04
680-101996-7	PDMW-33R2_06042014	Water	06/04/14 13:15	06/05/14 09:04
680-101996-8	PDMW-48_06042014	Water	06/04/14 14:35	06/05/14 09:04
680-101996-9	PDMW-32R_06042014	Water	06/04/14 15:20	06/05/14 09:04
680-101996-10	EW-01_06042014	Water	06/04/14 15:09	06/05/14 09:04
680-101996-11	PDMW-50_06042014	Water	06/04/14 16:25	06/05/14 09:04
680-101996-12	TRIPBLANK_06042014	Water	06/04/14 00:00	06/05/14 09:04

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: PDMW-07P_06042014

Lab Sample ID: 680-101996-1

Date Collected: 06/04/14 09:45

Matrix: Water

Date Received: 06/05/14 09:04

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 14:12	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 14:12	1
Toluene	1.0	U	1.0		ug/L			06/11/14 14:12	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 14:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		70 - 130					06/11/14 14:12	1
Dibromofluoromethane	97		70 - 130					06/11/14 14:12	1
Toluene-d8 (Surr)	102		70 - 130					06/11/14 14:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Acenaphthylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Benzo[a]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Benzo[a]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Benzo[b]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Benzo[g,h,i]perylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Benzo[k]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Chrysene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Dibenz[a,h]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Fluorene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Indeno[1,2,3-cd]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
1-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
2-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Naphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Phenanthrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 18:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	59		38 - 130				06/10/14 15:11	06/12/14 18:32	1
Nitrobenzene-d5 (Surr)	66		39 - 130				06/10/14 15:11	06/12/14 18:32	1
Terphenyl-d14 (Surr)	57		10 - 143				06/10/14 15:11	06/12/14 18:32	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 17:26	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 17:26	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 17:26	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 17:26	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 17:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	12		0.50		mg/L			06/10/14 11:17	10
Nitrate as N	0.050	U	0.050		mg/L			06/05/14 17:12	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: PDMW-46_06042014

Lab Sample ID: 680-101996-2

Date Collected: 06/04/14 09:30

Matrix: Water

Date Received: 06/05/14 09:04

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 14:35	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 14:35	1
Toluene	1.0	U	1.0		ug/L			06/11/14 14:35	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 14:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		70 - 130		06/11/14 14:35	1
Dibromofluoromethane	95		70 - 130		06/11/14 14:35	1
Toluene-d8 (Surr)	103		70 - 130		06/11/14 14:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Acenaphthylene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Anthracene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Benzo[a]anthracene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Benzo[a]pyrene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Benzo[b]fluoranthene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Benzo[g,h,i]perylene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Benzo[k]fluoranthene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Chrysene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Dibenz[a,h]anthracene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Fluoranthene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Fluorene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Indeno[1,2,3-cd]pyrene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
1-Methylnaphthalene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
2-Methylnaphthalene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Naphthalene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Phenanthrene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1
Pyrene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 18:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	65		38 - 130	06/10/14 15:11	06/12/14 18:55	1
Nitrobenzene-d5 (Surr)	76		39 - 130	06/10/14 15:11	06/12/14 18:55	1
Terphenyl-d14 (Surr)	60		10 - 143	06/10/14 15:11	06/12/14 18:55	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 17:34	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 17:34	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 17:34	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 17:34	1
Zinc	400		20		ug/L		06/06/14 10:16	06/10/14 17:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	2.9		0.10		mg/L			06/10/14 09:44	2
Nitrate as N	0.050	U	0.050		mg/L			06/05/14 17:13	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: MW-201_06042014

Lab Sample ID: 680-101996-3

Date Collected: 06/04/14 10:40

Matrix: Water

Date Received: 06/05/14 09:04

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 14:58	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 14:58	1
Toluene	1.0	U	1.0		ug/L			06/11/14 14:58	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 14:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		70 - 130					06/11/14 14:58	1
Dibromofluoromethane	93		70 - 130					06/11/14 14:58	1
Toluene-d8 (Surr)	102		70 - 130					06/11/14 14:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Acenaphthylene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Anthracene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Benzo[a]anthracene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Benzo[a]pyrene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Chrysene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Dibenz[a,h]anthracene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Fluorene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
1-Methylnaphthalene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
2-Methylnaphthalene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Naphthalene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Phenanthrene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Pyrene	10	U	10		ug/L		06/10/14 15:11	06/12/14 19:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	45		38 - 130				06/10/14 15:11	06/12/14 19:18	1
Nitrobenzene-d5 (Surr)	52		39 - 130				06/10/14 15:11	06/12/14 19:18	1
Terphenyl-d14 (Surr)	52		10 - 143				06/10/14 15:11	06/12/14 19:18	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:16	1
Chromium	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:16	1
Lead	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:16	1
Nickel	40	U	40		ug/L		06/07/14 09:43	06/10/14 18:16	1
Zinc	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	15		0.50		mg/L			06/10/14 09:34	10
Nitrate as N	0.070		0.050		mg/L			06/05/14 17:15	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: PDMW-19P_06042014

Lab Sample ID: 680-101996-4

Date Collected: 06/04/14 10:55

Matrix: Water

Date Received: 06/05/14 09:04

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 15:21	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 15:21	1
Toluene	1.0	U	1.0		ug/L			06/11/14 15:21	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 15:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		70 - 130					06/11/14 15:21	1
Dibromofluoromethane	93		70 - 130					06/11/14 15:21	1
Toluene-d8 (Surr)	102		70 - 130					06/11/14 15:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Acenaphthylene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Anthracene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Benzo[a]anthracene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Benzo[a]pyrene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Benzo[b]fluoranthene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Benzo[g,h,i]perylene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Benzo[k]fluoranthene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Chrysene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Dibenz[a,h]anthracene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Fluoranthene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Fluorene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Indeno[1,2,3-cd]pyrene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
1-Methylnaphthalene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
2-Methylnaphthalene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Naphthalene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Phenanthrene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Pyrene	9.8	U	9.8		ug/L		06/10/14 15:11	06/12/14 19:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	63		38 - 130				06/10/14 15:11	06/12/14 19:42	1
Nitrobenzene-d5 (Surr)	75		39 - 130				06/10/14 15:11	06/12/14 19:42	1
Terphenyl-d14 (Surr)	72		10 - 143				06/10/14 15:11	06/12/14 19:42	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:21	1
Chromium	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:21	1
Lead	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:21	1
Nickel	40	U	40		ug/L		06/07/14 09:43	06/10/14 18:21	1
Zinc	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	5.6		0.25		mg/L			06/10/14 11:17	5
Nitrate as N	0.050	U	0.050		mg/L			06/05/14 17:18	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: PDMW-47_06042014

Lab Sample ID: 680-101996-5

Date Collected: 06/04/14 11:45

Matrix: Water

Date Received: 06/05/14 09:04

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 15:44	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 15:44	1
Toluene	1.0	U	1.0		ug/L			06/11/14 15:44	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 15:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		70 - 130					06/11/14 15:44	1
Dibromofluoromethane	89		70 - 130					06/11/14 15:44	1
Toluene-d8 (Surr)	102		70 - 130					06/11/14 15:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Acenaphthylene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Anthracene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Benzo[a]anthracene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Benzo[a]pyrene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Benzo[b]fluoranthene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Benzo[g,h,i]perylene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Benzo[k]fluoranthene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Chrysene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Dibenz[a,h]anthracene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Fluoranthene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Fluorene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Indeno[1,2,3-cd]pyrene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
1-Methylnaphthalene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
2-Methylnaphthalene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Naphthalene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Phenanthrene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Pyrene	9.6	U	9.6		ug/L		06/10/14 15:11	06/12/14 20:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	51		38 - 130				06/10/14 15:11	06/12/14 20:05	1
Nitrobenzene-d5 (Surr)	56		39 - 130				06/10/14 15:11	06/12/14 20:05	1
Terphenyl-d14 (Surr)	47		10 - 143				06/10/14 15:11	06/12/14 20:05	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:25	1
Chromium	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:25	1
Lead	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:25	1
Nickel	40	U	40		ug/L		06/07/14 09:43	06/10/14 18:25	1
Zinc	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	72		2.5		mg/L			06/10/14 09:44	50
Nitrate as N	0.050	U	0.050		mg/L			06/05/14 17:19	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: PDMW-23R_06042014

Lab Sample ID: 680-101996-6

Date Collected: 06/04/14 12:45

Matrix: Water

Date Received: 06/05/14 09:04

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 16:08	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 16:08	1
Toluene	1.0	U	1.0		ug/L			06/11/14 16:08	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 16:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		70 - 130					06/11/14 16:08	1
Dibromofluoromethane	93		70 - 130					06/11/14 16:08	1
Toluene-d8 (Surr)	102		70 - 130					06/11/14 16:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Acenaphthylene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Anthracene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Benzo[a]anthracene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Benzo[a]pyrene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Chrysene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Dibenz[a,h]anthracene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Fluorene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
1-Methylnaphthalene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
2-Methylnaphthalene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Naphthalene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Phenanthrene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Pyrene	10	U	10		ug/L		06/10/14 15:11	06/12/14 20:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	61		38 - 130				06/10/14 15:11	06/12/14 20:28	1
Nitrobenzene-d5 (Surr)	70		39 - 130				06/10/14 15:11	06/12/14 20:28	1
Terphenyl-d14 (Surr)	58		10 - 143				06/10/14 15:11	06/12/14 20:28	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:29	1
Chromium	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:29	1
Lead	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:29	1
Nickel	40	U	40		ug/L		06/07/14 09:43	06/10/14 18:29	1
Zinc	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	3.6		0.10		mg/L			06/10/14 09:44	2
Nitrate as N	0.11		0.050		mg/L			06/05/14 17:21	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: PDMW-33R2_06042014

Lab Sample ID: 680-101996-7

Date Collected: 06/04/14 13:15

Matrix: Water

Date Received: 06/05/14 09:04

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 16:31	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 16:31	1
Toluene	1.0	U	1.0		ug/L			06/11/14 16:31	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 16:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		70 - 130					06/11/14 16:31	1
Dibromofluoromethane	89		70 - 130					06/11/14 16:31	1
Toluene-d8 (Surr)	102		70 - 130					06/11/14 16:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Acenaphthylene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Anthracene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Benzo[a]anthracene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Benzo[a]pyrene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Benzo[b]fluoranthene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Benzo[g,h,i]perylene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Benzo[k]fluoranthene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Chrysene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Dibenz[a,h]anthracene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Fluoranthene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Fluorene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Indeno[1,2,3-cd]pyrene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
1-Methylnaphthalene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
2-Methylnaphthalene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Naphthalene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Phenanthrene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Pyrene	9.7	U	9.7		ug/L		06/10/14 15:11	06/12/14 20:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	64		38 - 130				06/10/14 15:11	06/12/14 20:51	1
Nitrobenzene-d5 (Surr)	71		39 - 130				06/10/14 15:11	06/12/14 20:51	1
Terphenyl-d14 (Surr)	54		10 - 143				06/10/14 15:11	06/12/14 20:51	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:34	1
Chromium	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:34	1
Lead	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:34	1
Nickel	40	U	40		ug/L		06/07/14 09:43	06/10/14 18:34	1
Zinc	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	16		0.50		mg/L			06/10/14 09:34	10
Nitrate as N	0.050	U	0.050		mg/L			06/05/14 17:22	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: PDMW-48_06042014

Lab Sample ID: 680-101996-8

Date Collected: 06/04/14 14:35

Matrix: Water

Date Received: 06/05/14 09:04

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	27		1.0		mg/L			06/10/14 10:03	20
Nitrate as N	0.050	U	0.050		mg/L			06/05/14 17:23	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: PDMW-32R_06042014

Lab Sample ID: 680-101996-9

Date Collected: 06/04/14 15:20

Matrix: Water

Date Received: 06/05/14 09:04

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 16:54	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 16:54	1
Toluene	1.0	U	1.0		ug/L			06/11/14 16:54	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 16:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	96		70 - 130					06/11/14 16:54	1
Dibromofluoromethane	92		70 - 130					06/11/14 16:54	1
Toluene-d8 (Surr)	102		70 - 130					06/11/14 16:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Acenaphthylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Benzo[a]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Benzo[a]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Benzo[b]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Benzo[g,h,i]perylene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Benzo[k]fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Chrysene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Dibenz[a,h]anthracene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Fluoranthene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Fluorene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Indeno[1,2,3-cd]pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
1-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
2-Methylnaphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Naphthalene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Phenanthrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Pyrene	9.9	U	9.9		ug/L		06/10/14 15:11	06/12/14 21:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	57		38 - 130				06/10/14 15:11	06/12/14 21:14	1
Nitrobenzene-d5 (Surr)	66		39 - 130				06/10/14 15:11	06/12/14 21:14	1
Terphenyl-d14 (Surr)	55		10 - 143				06/10/14 15:11	06/12/14 21:14	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:38	1
Chromium	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:38	1
Lead	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:38	1
Nickel	40	U	40		ug/L		06/07/14 09:43	06/10/14 18:38	1
Zinc	31		20		ug/L		06/07/14 09:43	06/10/14 18:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	11		0.50		mg/L			06/10/14 11:41	10
Nitrate as N	0.050	U	0.050		mg/L			06/05/14 17:24	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: EW-01_06042014

Lab Sample ID: 680-101996-10

Date Collected: 06/04/14 15:09

Matrix: Water

Date Received: 06/05/14 09:04

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 17:17	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 17:17	1
Toluene	1.0	U	1.0		ug/L			06/11/14 17:17	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 17:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		70 - 130		06/11/14 17:17	1
Dibromofluoromethane	95		70 - 130		06/11/14 17:17	1
Toluene-d8 (Surr)	103		70 - 130		06/11/14 17:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Acenaphthylene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Anthracene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Benzo[a]anthracene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Benzo[a]pyrene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Chrysene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Dibenz[a,h]anthracene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Fluorene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
1-Methylnaphthalene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
2-Methylnaphthalene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Naphthalene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Phenanthrene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1
Pyrene	10	U	10		ug/L		06/10/14 15:11	06/11/14 23:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	55		38 - 130	06/10/14 15:11	06/11/14 23:07	1
Nitrobenzene-d5 (Surr)	65		39 - 130	06/10/14 15:11	06/11/14 23:07	1
Terphenyl-d14 (Surr)	52		10 - 143	06/10/14 15:11	06/11/14 23:07	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:42	1
Chromium	12		10		ug/L		06/07/14 09:43	06/10/14 18:42	1
Lead	10		10		ug/L		06/07/14 09:43	06/10/14 18:42	1
Nickel	100		40		ug/L		06/07/14 09:43	06/10/14 18:42	1
Zinc	550		20		ug/L		06/07/14 09:43	06/10/14 18:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1100		50		mg/L			06/10/14 11:41	1000
Nitrate as N	0.050	U	0.050		mg/L			06/05/14 17:08	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: PDMW-50_06042014

Lab Sample ID: 680-101996-11

Date Collected: 06/04/14 16:25

Matrix: Water

Date Received: 06/05/14 09:04

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	7.8		0.25		mg/L			06/10/14 09:54	5
Nitrate as N	0.050	U	0.050		mg/L			06/05/14 17:25	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: TRIPBLANK_06042014

Lab Sample ID: 680-101996-12

Date Collected: 06/04/14 00:00

Matrix: Water

Date Received: 06/05/14 09:04

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 13:02	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 13:02	1
Toluene	1.0	U	1.0		ug/L			06/11/14 13:02	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 13:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	96		70 - 130		06/11/14 13:02	1
Dibromofluoromethane	98		70 - 130		06/11/14 13:02	1
Toluene-d8 (Surr)	103		70 - 130		06/11/14 13:02	1

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-333526/8

Matrix: Water

Analysis Batch: 333526

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 11:42	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 11:42	1
Toluene	1.0	U	1.0		ug/L			06/11/14 11:42	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 11:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	96		70 - 130		06/11/14 11:42	1
Dibromofluoromethane	101		70 - 130		06/11/14 11:42	1
Toluene-d8 (Surr)	104		70 - 130		06/11/14 11:42	1

Lab Sample ID: LCS 680-333526/4

Matrix: Water

Analysis Batch: 333526

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	51.3		ug/L		103	74 - 123
Ethylbenzene	50.0	49.2		ug/L		98	78 - 125
Toluene	50.0	50.9		ug/L		102	77 - 125
Xylenes, Total	150	145		ug/L		96	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	96		70 - 130
Dibromofluoromethane	108		70 - 130
Toluene-d8 (Surr)	103		70 - 130

Lab Sample ID: LCSD 680-333526/6

Matrix: Water

Analysis Batch: 333526

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	49.1		ug/L		98	74 - 123	4	30
Ethylbenzene	50.0	46.6		ug/L		93	78 - 125	6	30
Toluene	50.0	47.0		ug/L		94	77 - 125	8	30
Xylenes, Total	150	140		ug/L		93	80 - 124	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	93		70 - 130
Dibromofluoromethane	106		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Lab Sample ID: 680-101996-10 MS

Matrix: Water

Analysis Batch: 333526

Client Sample ID: EW-01_06042014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	1.0	U	50.0	49.7		ug/L		99	74 - 123
Ethylbenzene	1.0	U	50.0	49.7		ug/L		99	78 - 125

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

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

Lab Sample ID: 680-101996-10 MS

Matrix: Water

Analysis Batch: 333526

Client Sample ID: EW-01_06042014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	1.0	U	50.0	51.0		ug/L		102	77 - 125
Xylenes, Total	2.0	U	150	144		ug/L		96	80 - 124
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene	92		70 - 130						
Dibromofluoromethane	95		70 - 130						
Toluene-d8 (Surr)	102		70 - 130						

Lab Sample ID: 680-101996-10 MSD

Matrix: Water

Analysis Batch: 333526

Client Sample ID: EW-01_06042014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.0	U	50.0	50.2		ug/L		100	74 - 123	1	30
Ethylbenzene	1.0	U	50.0	51.1		ug/L		102	78 - 125	3	30
Toluene	1.0	U	50.0	50.6		ug/L		101	77 - 125	1	30
Xylenes, Total	2.0	U	150	148		ug/L		98	80 - 124	3	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene	95		70 - 130								
Dibromofluoromethane	90		70 - 130								
Toluene-d8 (Surr)	103		70 - 130								

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

Lab Sample ID: MB 680-333327/21-A

Matrix: Water

Analysis Batch: 333622

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 333327

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Acenaphthylene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Anthracene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Benzo[a]anthracene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Benzo[a]pyrene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Chrysene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Dibenz(a,h)anthracene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Fluoranthene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Fluorene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
1-Methylnaphthalene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
2-Methylnaphthalene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Naphthalene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Phenanthrene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

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

Lab Sample ID: MB 680-333327/21-A

Matrix: Water

Analysis Batch: 333622

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 333327

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	10	U	10		ug/L		06/10/14 15:11	06/11/14 21:30	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	76		38 - 130				06/10/14 15:11	06/11/14 21:30	1
Nitrobenzene-d5 (Surr)	83		39 - 130				06/10/14 15:11	06/11/14 21:30	1
Terphenyl-d14 (Surr)	84		10 - 143				06/10/14 15:11	06/11/14 21:30	1

Lab Sample ID: LCS 680-333327/22-A

Matrix: Water

Analysis Batch: 333622

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 333327

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	65.8		ug/L		66	41 - 99
Acenaphthylene	100	62.6		ug/L		63	32 - 118
Anthracene	100	74.8		ug/L		75	50 - 103
Benzo[a]anthracene	100	72.7		ug/L		73	53 - 109
Benzo[a]pyrene	100	68.6		ug/L		69	38 - 111
Benzo[b]fluoranthene	100	71.4		ug/L		71	53 - 108
Benzo[g,h,i]perylene	100	66.5		ug/L		67	42 - 114
Benzo[k]fluoranthene	100	67.9		ug/L		68	49 - 108
Chrysene	100	70.2		ug/L		70	54 - 111
Dibenz(a,h)anthracene	100	68.1		ug/L		68	48 - 110
Fluoranthene	100	72.0		ug/L		72	48 - 111
Fluorene	100	74.8		ug/L		75	50 - 105
Indeno[1,2,3-cd]pyrene	100	62.7		ug/L		63	34 - 115
1-Methylnaphthalene	100	54.6		ug/L		55	50 - 130
2-Methylnaphthalene	100	51.8		ug/L		52	32 - 92
Naphthalene	100	52.3		ug/L		52	29 - 91
Phenanthrene	100	74.5		ug/L		75	52 - 108
Pyrene	100	71.9		ug/L		72	50 - 111
Surrogate	%Recovery	LCS Qualifier	Limits				
2-Fluorobiphenyl	71		38 - 130				
Nitrobenzene-d5 (Surr)	70		39 - 130				
Terphenyl-d14 (Surr)	80		10 - 143				

Lab Sample ID: 680-101996-10 MS

Matrix: Water

Analysis Batch: 333622

Client Sample ID: EW-01_06042014

Prep Type: Total/NA

Prep Batch: 333327

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	10	U	94.6	67.4		ug/L		71	41 - 99
Acenaphthylene	10	U	94.6	64.6		ug/L		68	32 - 118
Anthracene	10	U	94.6	72.6		ug/L		77	50 - 103
Benzo[a]anthracene	10	U	94.6	71.2		ug/L		75	53 - 109
Benzo[a]pyrene	10	U	94.6	64.1		ug/L		68	38 - 111
Benzo[b]fluoranthene	10	U	94.6	68.7		ug/L		73	53 - 108
Benzo[g,h,i]perylene	10	U	94.6	66.5		ug/L		68	42 - 114

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

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

Lab Sample ID: 680-101996-10 MS

Matrix: Water

Analysis Batch: 333622

Client Sample ID: EW-01_06042014

Prep Type: Total/NA

Prep Batch: 333327

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[k]fluoranthene	10	U	94.6	65.6		ug/L		69	49 - 108
Chrysene	10	U	94.6	70.5		ug/L		74	54 - 111
Dibenz(a,h)anthracene	10	U	94.6	67.3		ug/L		69	48 - 110
Fluoranthene	10	U	94.6	71.2		ug/L		75	48 - 111
Fluorene	10	U	94.6	74.4		ug/L		79	50 - 105
Indeno[1,2,3-cd]pyrene	10	U	94.6	64.6		ug/L		66	34 - 115
1-Methylnaphthalene	10	U	94.6	57.3		ug/L		61	50 - 130
2-Methylnaphthalene	10	U	94.6	51.8		ug/L		55	32 - 92
Naphthalene	10	U	94.6	52.6		ug/L		56	29 - 91
Phenanthrene	10	U	94.6	73.3		ug/L		77	52 - 108
Pyrene	10	U	94.6	70.1		ug/L		74	50 - 111

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Fluorobiphenyl	68		38 - 130
Nitrobenzene-d5 (Surr)	73		39 - 130
Terphenyl-d14 (Surr)	68		10 - 143

Lab Sample ID: 680-101996-10 MSD

Matrix: Water

Analysis Batch: 333622

Client Sample ID: EW-01_06042014

Prep Type: Total/NA

Prep Batch: 333327

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	10	U	92.1	60.5		ug/L		66	41 - 99	11	50
Acenaphthylene	10	U	92.1	60.9		ug/L		66	32 - 118	6	50
Anthracene	10	U	92.1	64.7		ug/L		70	50 - 103	12	50
Benzo[a]anthracene	10	U	92.1	58.0		ug/L		63	53 - 109	20	50
Benzo[a]pyrene	10	U	92.1	51.8		ug/L		56	38 - 111	21	50
Benzo[b]fluoranthene	10	U	92.1	52.3		ug/L		57	53 - 108	27	50
Benzo[g,h,i]perylene	10	U	92.1	51.1		ug/L		53	42 - 114	26	50
Benzo[k]fluoranthene	10	U	92.1	54.5		ug/L		59	49 - 108	19	50
Chrysene	10	U	92.1	57.6		ug/L		63	54 - 111	20	50
Dibenz(a,h)anthracene	10	U	92.1	51.6		ug/L		54	48 - 110	26	50
Fluoranthene	10	U	92.1	60.9		ug/L		66	48 - 111	16	50
Fluorene	10	U	92.1	68.2		ug/L		74	50 - 105	9	50
Indeno[1,2,3-cd]pyrene	10	U	92.1	51.9		ug/L		54	34 - 115	22	50
1-Methylnaphthalene	10	U	92.1	53.6		ug/L		58	50 - 130	7	50
2-Methylnaphthalene	10	U	92.1	51.5		ug/L		56	32 - 92	1	50
Naphthalene	10	U	92.1	52.4		ug/L		57	29 - 91	0	50
Phenanthrene	10	U	92.1	66.2		ug/L		72	52 - 108	10	50
Pyrene	10	U	92.1	60.5		ug/L		66	50 - 111	15	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2-Fluorobiphenyl	59		38 - 130
Nitrobenzene-d5 (Surr)	71		39 - 130
Terphenyl-d14 (Surr)	56		10 - 143

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-332730/1-A

Matrix: Water

Analysis Batch: 333550

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 332730

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/06/14 10:16	06/10/14 15:26	1
Chromium	10	U	10		ug/L		06/06/14 10:16	06/10/14 15:26	1
Lead	10	U	10		ug/L		06/06/14 10:16	06/10/14 15:26	1
Nickel	40	U	40		ug/L		06/06/14 10:16	06/10/14 15:26	1
Zinc	20	U	20		ug/L		06/06/14 10:16	06/10/14 15:26	1

Lab Sample ID: LCS 680-332730/2-A

Matrix: Water

Analysis Batch: 333550

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 332730

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	99.5		ug/L		99	75 - 125
Chromium	100	99.4		ug/L		99	75 - 125
Lead	50.0	49.8		ug/L		100	75 - 125
Nickel	100	98.1		ug/L		98	75 - 125
Zinc	100	98.2		ug/L		98	75 - 125

Lab Sample ID: MB 680-332912/1-A

Matrix: Water

Analysis Batch: 333550

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 332912

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:08	1
Chromium	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:08	1
Lead	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:08	1
Nickel	40	U	40		ug/L		06/07/14 09:43	06/10/14 18:08	1
Zinc	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:08	1

Lab Sample ID: LCS 680-332912/2-A

Matrix: Water

Analysis Batch: 333550

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 332912

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	101		ug/L		101	75 - 125
Chromium	100	97.4		ug/L		97	75 - 125
Lead	50.0	48.9		ug/L		98	75 - 125
Nickel	100	97.9		ug/L		98	75 - 125
Zinc	100	96.8		ug/L		97	75 - 125

Lab Sample ID: 680-101996-10 MS

Matrix: Water

Analysis Batch: 333550

Client Sample ID: EW-01_06042014

Prep Type: Total/NA

Prep Batch: 332912

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	20	U	100	106		ug/L		97	75 - 125
Chromium	12		100	98.0		ug/L		86	75 - 125
Lead	10		50.0	54.3		ug/L		88	75 - 125
Nickel	100		100	188		ug/L		86	75 - 125
Zinc	550		100	629	4	ug/L		79	75 - 125

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-101996-10 MSD

Matrix: Water

Analysis Batch: 333550

Client Sample ID: EW-01_06042014

Prep Type: Total/NA

Prep Batch: 332912

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	20	U	100	106		ug/L		98	75 - 125	0	20
Chromium	12		100	98.2		ug/L		86	75 - 125	0	20
Lead	10		50.0	50.6		ug/L		81	75 - 125	7	20
Nickel	100		100	187		ug/L		85	75 - 125	0	20
Zinc	550		100	621	4	ug/L		71	75 - 125	1	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-333396/5

Matrix: Water

Analysis Batch: 333396

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.050	U	0.050		mg/L			06/09/14 18:30	1

Lab Sample ID: LCS 680-333396/4

Matrix: Water

Analysis Batch: 333396

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.01		mg/L		101	90 - 110

Lab Sample ID: 680-101996-10 MS

Matrix: Water

Analysis Batch: 333396

Client Sample ID: EW-01_06042014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1100		500	1320	F1	mg/L		54	90 - 110

Lab Sample ID: 680-101996-10 MSD

Matrix: Water

Analysis Batch: 333396

Client Sample ID: EW-01_06042014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1100		500	1330	F1	mg/L		54	90 - 110	0	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-332632/13

Matrix: Water

Analysis Batch: 332632

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			06/05/14 17:04	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: LCS 680-332632/16

Matrix: Water

Analysis Batch: 332632

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.527		mg/L		105	75 - 125

Lab Sample ID: 680-101996-10 MS

Matrix: Water

Analysis Batch: 332632

Client Sample ID: EW-01_06042014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.050	U	0.500	0.550		mg/L		110	75 - 125

Lab Sample ID: 680-101996-10 MSD

Matrix: Water

Analysis Batch: 332632

Client Sample ID: EW-01_06042014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.050	U	0.500	0.550		mg/L		110	75 - 125	0	30

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

GC/MS VOA

Analysis Batch: 333526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101996-1	PDMW-07P_06042014	Total/NA	Water	8260B	
680-101996-2	PDMW-46_06042014	Total/NA	Water	8260B	
680-101996-3	MW-201_06042014	Total/NA	Water	8260B	
680-101996-4	PDMW-19P_06042014	Total/NA	Water	8260B	
680-101996-5	PDMW-47_06042014	Total/NA	Water	8260B	
680-101996-6	PDMW-23R_06042014	Total/NA	Water	8260B	
680-101996-7	PDMW-33R2_06042014	Total/NA	Water	8260B	
680-101996-9	PDMW-32R_06042014	Total/NA	Water	8260B	
680-101996-10	EW-01_06042014	Total/NA	Water	8260B	
680-101996-10 MS	EW-01_06042014	Total/NA	Water	8260B	
680-101996-10 MSD	EW-01_06042014	Total/NA	Water	8260B	
680-101996-12	TRIPBLANK_06042014	Total/NA	Water	8260B	
LCS 680-333526/4	Lab Control Sample	Total/NA	Water	8260B	
LCS 680-333526/6	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-333526/8	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 333327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101996-1	PDMW-07P_06042014	Total/NA	Water	3520C	
680-101996-2	PDMW-46_06042014	Total/NA	Water	3520C	
680-101996-3	MW-201_06042014	Total/NA	Water	3520C	
680-101996-4	PDMW-19P_06042014	Total/NA	Water	3520C	
680-101996-5	PDMW-47_06042014	Total/NA	Water	3520C	
680-101996-6	PDMW-23R_06042014	Total/NA	Water	3520C	
680-101996-7	PDMW-33R2_06042014	Total/NA	Water	3520C	
680-101996-9	PDMW-32R_06042014	Total/NA	Water	3520C	
680-101996-10	EW-01_06042014	Total/NA	Water	3520C	
680-101996-10 MS	EW-01_06042014	Total/NA	Water	3520C	
680-101996-10 MSD	EW-01_06042014	Total/NA	Water	3520C	
LCS 680-333327/22-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-333327/21-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 333622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101996-10	EW-01_06042014	Total/NA	Water	8270D	333327
680-101996-10 MS	EW-01_06042014	Total/NA	Water	8270D	333327
680-101996-10 MSD	EW-01_06042014	Total/NA	Water	8270D	333327
LCS 680-333327/22-A	Lab Control Sample	Total/NA	Water	8270D	333327
MB 680-333327/21-A	Method Blank	Total/NA	Water	8270D	333327

Analysis Batch: 333838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101996-1	PDMW-07P_06042014	Total/NA	Water	8270D	333327
680-101996-2	PDMW-46_06042014	Total/NA	Water	8270D	333327
680-101996-3	MW-201_06042014	Total/NA	Water	8270D	333327
680-101996-4	PDMW-19P_06042014	Total/NA	Water	8270D	333327
680-101996-5	PDMW-47_06042014	Total/NA	Water	8270D	333327
680-101996-6	PDMW-23R_06042014	Total/NA	Water	8270D	333327

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

GC/MS Semi VOA (Continued)

Analysis Batch: 333838 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101996-7	PDMW-33R2_06042014	Total/NA	Water	8270D	333327
680-101996-9	PDMW-32R_06042014	Total/NA	Water	8270D	333327

Metals

Prep Batch: 332730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101996-1	PDMW-07P_06042014	Total/NA	Water	3010A	
680-101996-2	PDMW-46_06042014	Total/NA	Water	3010A	
LCS 680-332730/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-332730/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 332912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101996-3	MW-201_06042014	Total/NA	Water	3010A	
680-101996-4	PDMW-19P_06042014	Total/NA	Water	3010A	
680-101996-5	PDMW-47_06042014	Total/NA	Water	3010A	
680-101996-6	PDMW-23R_06042014	Total/NA	Water	3010A	
680-101996-7	PDMW-33R2_06042014	Total/NA	Water	3010A	
680-101996-9	PDMW-32R_06042014	Total/NA	Water	3010A	
680-101996-10	EW-01_06042014	Total/NA	Water	3010A	
680-101996-10 MS	EW-01_06042014	Total/NA	Water	3010A	
680-101996-10 MSD	EW-01_06042014	Total/NA	Water	3010A	
LCS 680-332912/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-332912/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 333550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101996-1	PDMW-07P_06042014	Total/NA	Water	6010C	332730
680-101996-2	PDMW-46_06042014	Total/NA	Water	6010C	332730
680-101996-3	MW-201_06042014	Total/NA	Water	6010C	332912
680-101996-4	PDMW-19P_06042014	Total/NA	Water	6010C	332912
680-101996-5	PDMW-47_06042014	Total/NA	Water	6010C	332912
680-101996-6	PDMW-23R_06042014	Total/NA	Water	6010C	332912
680-101996-7	PDMW-33R2_06042014	Total/NA	Water	6010C	332912
680-101996-9	PDMW-32R_06042014	Total/NA	Water	6010C	332912
680-101996-10	EW-01_06042014	Total/NA	Water	6010C	332912
680-101996-10 MS	EW-01_06042014	Total/NA	Water	6010C	332912
680-101996-10 MSD	EW-01_06042014	Total/NA	Water	6010C	332912
LCS 680-332730/2-A	Lab Control Sample	Total/NA	Water	6010C	332730
LCS 680-332912/2-A	Lab Control Sample	Total/NA	Water	6010C	332912
MB 680-332730/1-A	Method Blank	Total/NA	Water	6010C	332730
MB 680-332912/1-A	Method Blank	Total/NA	Water	6010C	332912

General Chemistry

Analysis Batch: 332632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101996-1	PDMW-07P_06042014	Total/NA	Water	353.2	
680-101996-2	PDMW-46_06042014	Total/NA	Water	353.2	

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

General Chemistry (Continued)

Analysis Batch: 332632 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101996-3	MW-201_06042014	Total/NA	Water	353.2	
680-101996-4	PDMW-19P_06042014	Total/NA	Water	353.2	
680-101996-5	PDMW-47_06042014	Total/NA	Water	353.2	
680-101996-6	PDMW-23R_06042014	Total/NA	Water	353.2	
680-101996-7	PDMW-33R2_06042014	Total/NA	Water	353.2	
680-101996-8	PDMW-48_06042014	Total/NA	Water	353.2	
680-101996-9	PDMW-32R_06042014	Total/NA	Water	353.2	
680-101996-10	EW-01_06042014	Total/NA	Water	353.2	
680-101996-10 MS	EW-01_06042014	Total/NA	Water	353.2	
680-101996-10 MSD	EW-01_06042014	Total/NA	Water	353.2	
680-101996-11	PDMW-50_06042014	Total/NA	Water	353.2	
LCS 680-332632/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-332632/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 333396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-101996-1	PDMW-07P_06042014	Total/NA	Water	350.1	
680-101996-2	PDMW-46_06042014	Total/NA	Water	350.1	
680-101996-3	MW-201_06042014	Total/NA	Water	350.1	
680-101996-4	PDMW-19P_06042014	Total/NA	Water	350.1	
680-101996-5	PDMW-47_06042014	Total/NA	Water	350.1	
680-101996-6	PDMW-23R_06042014	Total/NA	Water	350.1	
680-101996-7	PDMW-33R2_06042014	Total/NA	Water	350.1	
680-101996-8	PDMW-48_06042014	Total/NA	Water	350.1	
680-101996-9	PDMW-32R_06042014	Total/NA	Water	350.1	
680-101996-10	EW-01_06042014	Total/NA	Water	350.1	
680-101996-10 MS	EW-01_06042014	Total/NA	Water	350.1	
680-101996-10 MSD	EW-01_06042014	Total/NA	Water	350.1	
680-101996-11	PDMW-50_06042014	Total/NA	Water	350.1	
LCS 680-333396/4	Lab Control Sample	Total/NA	Water	350.1	
MB 680-333396/5	Method Blank	Total/NA	Water	350.1	

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: PDMW-07P_06042014

Date Collected: 06/04/14 09:45

Date Received: 06/05/14 09:04

Lab Sample ID: 680-101996-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333526	06/11/14 14:12	CAR	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			252.9 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	252.9 mL	0.5 mL	333838	06/12/14 18:32	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 17:26	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	333396	06/10/14 11:17	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332632	06/05/14 17:12	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-46_06042014

Date Collected: 06/04/14 09:30

Date Received: 06/05/14 09:04

Lab Sample ID: 680-101996-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333526	06/11/14 14:35	CAR	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			259.2 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	259.2 mL	0.5 mL	333838	06/12/14 18:55	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332730	06/06/14 10:16	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 17:34	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		2	2 mL	2 mL	333396	06/10/14 09:44	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332632	06/05/14 17:13	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: MW-201_06042014

Date Collected: 06/04/14 10:40

Date Received: 06/05/14 09:04

Lab Sample ID: 680-101996-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333526	06/11/14 14:58	CAR	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			249.5 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	249.5 mL	0.5 mL	333838	06/12/14 19:18	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332912	06/07/14 09:43	BJB	TAL SAV

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: MW-201_06042014

Lab Sample ID: 680-101996-3

Date Collected: 06/04/14 10:40

Matrix: Water

Date Received: 06/05/14 09:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 18:16	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	333396	06/10/14 09:34	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332632	06/05/14 17:15	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-19P_06042014

Lab Sample ID: 680-101996-4

Date Collected: 06/04/14 10:55

Matrix: Water

Date Received: 06/05/14 09:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333526	06/11/14 15:21	CAR	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			254 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	254 mL	0.5 mL	333838	06/12/14 19:42	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332912	06/07/14 09:43	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 18:21	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		5	2 mL	2 mL	333396	06/10/14 11:17	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332632	06/05/14 17:18	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-47_06042014

Lab Sample ID: 680-101996-5

Date Collected: 06/04/14 11:45

Matrix: Water

Date Received: 06/05/14 09:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333526	06/11/14 15:44	CAR	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			260.3 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	260.3 mL	0.5 mL	333838	06/12/14 20:05	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332912	06/07/14 09:43	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 18:25	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		50	2 mL	2 mL	333396	06/10/14 09:44	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332632	06/05/14 17:19	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: PDMW-23R_06042014

Lab Sample ID: 680-101996-6

Date Collected: 06/04/14 12:45

Matrix: Water

Date Received: 06/05/14 09:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333526	06/11/14 16:08	CAR	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			245.1 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	245.1 mL	0.5 mL	333838	06/12/14 20:28	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332912	06/07/14 09:43	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 18:29	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		2	2 mL	2 mL	333396	06/10/14 09:44	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332632	06/05/14 17:21	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-33R2_06042014

Lab Sample ID: 680-101996-7

Date Collected: 06/04/14 13:15

Matrix: Water

Date Received: 06/05/14 09:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333526	06/11/14 16:31	CAR	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			258.3 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	258.3 mL	0.5 mL	333838	06/12/14 20:51	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332912	06/07/14 09:43	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 18:34	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	333396	06/10/14 09:34	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332632	06/05/14 17:22	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-48_06042014

Lab Sample ID: 680-101996-8

Date Collected: 06/04/14 14:35

Matrix: Water

Date Received: 06/05/14 09:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		20	2 mL	2 mL	333396	06/10/14 10:03	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332632	06/05/14 17:23	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: PDMW-32R_06042014

Lab Sample ID: 680-101996-9

Date Collected: 06/04/14 15:20

Matrix: Water

Date Received: 06/05/14 09:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333526	06/11/14 16:54	CAR	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			253.4 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	253.4 mL	0.5 mL	333838	06/12/14 21:14	LEG	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	332912	06/07/14 09:43	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 18:38	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	333396	06/10/14 11:41	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332632	06/05/14 17:24	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: EW-01_06042014

Lab Sample ID: 680-101996-10

Date Collected: 06/04/14 15:09

Matrix: Water

Date Received: 06/05/14 09:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333526	06/11/14 17:17	CAR	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			248.5 mL	0.5 mL	333327	06/10/14 15:11	RBS	TAL SAV
Total/NA	Analysis	8270D		1	248.5 mL	0.5 mL	333622	06/11/14 23:07	SMC	TAL SAV
		Instrument ID: CMSE								
Total/NA	Prep	3010A			50 mL	50 mL	332912	06/07/14 09:43	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 18:42	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1000	2 mL	2 mL	333396	06/10/14 11:41	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332632	06/05/14 17:08	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-50_06042014

Lab Sample ID: 680-101996-11

Date Collected: 06/04/14 16:25

Matrix: Water

Date Received: 06/05/14 09:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		5	2 mL	2 mL	333396	06/10/14 09:54	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332632	06/05/14 17:25	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Client Sample ID: TRIPBLANK_06042014
Date Collected: 06/04/14 00:00
Date Received: 06/05/14 09:04

Lab Sample ID: 680-101996-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333526	06/11/14 13:02	CAR	TAL SAV
Instrument ID: CMSAD										

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14 *
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14 *
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14 *
GA Dept. of Agriculture	State Program	4	N/A	06-30-14 *
Georgia	State Program	4	N/A	06-30-14 *
Georgia	State Program	4	803	06-30-14 *
Guam	State Program	9	09-005r	04-16-15
Hawaii	State Program	9	N/A	06-30-14 *
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14 *
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	02-28-15
Louisiana	NELAP	6	30690	06-30-14 *
Louisiana (DW)	NELAP	6	LA140023	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14 *
Michigan	State Program	5	9925	06-30-14 *
Mississippi	State Program	4	N/A	06-30-14 *
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14 *
New Jersey	NELAP	2	GA769	06-30-14 *
New Mexico	State Program	6	N/A	06-30-14 *
New York	NELAP	2	10842	03-31-15
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14 *
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-15
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14 *
Tennessee	State Program	4	TN02961	06-30-14 *
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-15
Washington	State Program	10	C805	06-10-15
West Virginia DEP	State Program	3	94	06-30-14 *
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14 *

* Certification renewal pending - certification considered valid.

TestAmerica Savannah

Method Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-101996-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

 CHAIN OF CUSTODY		LABORATORY INFORMATION <input checked="" type="checkbox"/> TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165 <input type="checkbox"/> TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772 <input type="checkbox"/> TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049 <input type="checkbox"/> TestAmerica Pensacola - 3355 McEnroe Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671 <input type="checkbox"/> TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991 <input type="checkbox"/> TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211				COC # SHIPMENT INFORMATION Shipment Method: <u>Lab Courier</u> Shipment Tracking No:																																																																								
		CSXT PROJECT INFORMATION Project #: <u>6-4200-5240</u>																																																																												
CSXT Project Number: <u>9415575</u> CSXT Project Name: <u>San Ross</u>		CONSULTANT INFORMATION Company: <u>AMEC E&I</u> Address: <u>3800 Ell Rd Ste 100</u> City, State, Zip: <u>Nashville, TN 37211</u> Phone: <u>(615) 658-1374</u> Fax:		PM: <u>Pat Harrison</u> Email: <u>pat.harrison@amec.com</u>																																																																										
CSXT Contact: <u>Hutchinson Island 2</u>		<div style="text-align: center;"> 680-101996 Chain of Custody </div>																																																																												
Turnaround Time: <input type="checkbox"/> Standard 6-13 Days <input checked="" type="checkbox"/> 1 Day Rush <input type="checkbox"/> 2 Day Rush <input type="checkbox"/> 3 Day Rush <input type="checkbox"/> Other																																																																														
Deliverables: <input checked="" type="checkbox"/> CSXT Standard (Level II) <input type="checkbox"/> Level III <input type="checkbox"/> Level IV		METHODS FOR ANALYSIS <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Preservative Codes:</th> <th>Note</th> <th>Matrix</th> <th>Comp or Grab</th> <th>Code</th> </tr> <tr> <td>0 = No Preservatives</td> <td>3 = Sulfuric Acid</td> <td>Ammonia</td> <td>X</td> <td>X</td> </tr> <tr> <td>1 = Hydrochloric Acid</td> <td>4 = Sodium Thiosulfate</td> <td>BTX</td> <td>X</td> <td>X</td> </tr> <tr> <td>2 = Nitric Acid</td> <td>5 = Sodium Hydroxide</td> <td>PATHS</td> <td>X</td> <td>X</td> </tr> <tr> <td></td> <td>6 = Other</td> <td>Total AS, Pb, Ni, Zn</td> <td>X</td> <td>X</td> </tr> </table>				Preservative Codes:	Note	Matrix	Comp or Grab	Code	0 = No Preservatives	3 = Sulfuric Acid	Ammonia	X	X	1 = Hydrochloric Acid	4 = Sodium Thiosulfate	BTX	X	X	2 = Nitric Acid	5 = Sodium Hydroxide	PATHS	X	X		6 = Other	Total AS, Pb, Ni, Zn	X	X																																																
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Received By Laboratory: <u>[Signature]</u>		Lab Remarks: <u>680-101996</u>																																																																												

Login Sample Receipt Checklist

Client: AMEC Environment & Infrastructure, Inc.

Job Number: 680-101996-1

Login Number: 101996

List Source: TestAmerica Savannah

List Number: 1

Creator: Kicklighter, Marilyn D

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-102049-1

Client Project/Site: CSX Hutchinson Island VRP

For:

AMEC Environment & Infrastructure, Inc.

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Mr. Steve Foley



Authorized for release by:

6/20/2014 5:58:22 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

LINKS

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results through

TotalAccess

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Job ID: 680-102049-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Environment & Infrastructure, Inc.
Project: CSX Hutchinson Island VRP
Report Number: 680-102049-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 6/6/2014 8:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 5.2° C, 5.4° C and 5.8° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SW-04-LOW_06052014 (680-102049-1), SW-03-LOW_06052014 (680-102049-2), TMW-01_06052014 (680-102049-3), SW-01-LOW_06052014 (680-102049-4), SW-02-LOW_06052014 (680-102049-5), PDMW-26T_06052014 (680-102049-6), MW-3R_06052014 (680-102049-7), PDMW-10R_06052014 (680-102049-9), PDMW-13P_06052014 (680-102049-11), SW-03-HIGH_06052014 (680-102049-12), SW-04-HIGH_06052014 (680-102049-13), SW-02-HIGH_06052014 (680-102049-14), SW-01-HIGH_06052014 (680-102049-15) and TRIPBLANK_06052014 (680-102049-16) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

Method(s) 8260B: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: PDMW-26T_06052014 (680-102049-6), TMW-01_06052014 (680-102049-3).

Sample TMW-01_06052014 (680-102049-3)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples SW-04-LOW_06052014 (680-102049-1), SW-03-LOW_06052014 (680-102049-2), TMW-01_06052014 (680-102049-3), SW-01-LOW_06052014 (680-102049-4), SW-02-LOW_06052014 (680-102049-5), PDMW-26T_06052014 (680-102049-6), MW-3R_06052014 (680-102049-7), PDMW-10R_06052014 (680-102049-9), PDMW-13P_06052014 (680-102049-11), SW-03-HIGH_06052014 (680-102049-12), SW-04-HIGH_06052014 (680-102049-13), SW-02-HIGH_06052014 (680-102049-14) and SW-01-HIGH_06052014 (680-102049-15) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D.

Method(s) 8270D: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 333829 recovered outside control limits for the following analytes: acenaphthylene.

METALS (ICP)

Samples SW-04-LOW_06052014 (680-102049-1), SW-03-LOW_06052014 (680-102049-2), SW-01-LOW_06052014 (680-102049-4), SW-02-LOW_06052014 (680-102049-5), SW-03-HIGH_06052014 (680-102049-12), SW-04-HIGH_06052014 (680-102049-13), SW-02-HIGH_06052014 (680-102049-14) and SW-01-HIGH_06052014 (680-102049-15) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C.

METALS (ICP)

Samples TMW-01_06052014 (680-102049-3), PDMW-26T_06052014 (680-102049-6), MW-3R_06052014 (680-102049-7), PDMW-10R_06052014 (680-102049-9) and PDMW-13P_06052014 (680-102049-11) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C.

ALKALINITY

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Job ID: 680-102049-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Samples SW-04-LOW_06052014 (680-102049-1), SW-03-LOW_06052014 (680-102049-2), SW-01-LOW_06052014 (680-102049-4), SW-02-LOW_06052014 (680-102049-5), SW-03-HIGH_06052014 (680-102049-12), SW-04-HIGH_06052014 (680-102049-13), SW-02-HIGH_06052014 (680-102049-14) and SW-01-HIGH_06052014 (680-102049-15) were analyzed for alkalinity in accordance with EPA Method 310.1.

AMMONIA

Samples SW-04-LOW_06052014 (680-102049-1), SW-03-LOW_06052014 (680-102049-2), TMW-01_06052014 (680-102049-3), SW-01-LOW_06052014 (680-102049-4), SW-02-LOW_06052014 (680-102049-5), PDMW-26T_06052014 (680-102049-6), MW-3R_06052014 (680-102049-7), PDMW-52_06052014 (680-102049-8), PDMW-10R_06052014 (680-102049-9), DUP-03_06052014 (680-102049-10), PDMW-13P_06052014 (680-102049-11), SW-03-HIGH_06052014 (680-102049-12), SW-04-HIGH_06052014 (680-102049-13), SW-02-HIGH_06052014 (680-102049-14) and SW-01-HIGH_06052014 (680-102049-15) were analyzed for ammonia in accordance with EPA Method 350.1.

Samples TMW-01_06052014 (680-102049-3)[2000X], SW-01-LOW_06052014 (680-102049-4)[2X], SW-02-LOW_06052014 (680-102049-5)[2X], PDMW-26T_06052014 (680-102049-6)[500X], MW-3R_06052014 (680-102049-7)[5X], PDMW-52_06052014 (680-102049-8)[10X], PDMW-10R_06052014 (680-102049-9)[10X], DUP-03_06052014 (680-102049-10)[5X] and PDMW-13P_06052014 (680-102049-11)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

NITRATE-NITRITE AS NITROGEN

Samples SW-04-LOW_06052014 (680-102049-1), SW-03-LOW_06052014 (680-102049-2), TMW-01_06052014 (680-102049-3), SW-01-LOW_06052014 (680-102049-4), SW-02-LOW_06052014 (680-102049-5), PDMW-26T_06052014 (680-102049-6), MW-3R_06052014 (680-102049-7), PDMW-52_06052014 (680-102049-8), PDMW-10R_06052014 (680-102049-9), DUP-03_06052014 (680-102049-10), PDMW-13P_06052014 (680-102049-11), SW-03-HIGH_06052014 (680-102049-12), SW-04-HIGH_06052014 (680-102049-13), SW-02-HIGH_06052014 (680-102049-14) and SW-01-HIGH_06052014 (680-102049-15) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2.

Sample TMW-01_06052014 (680-102049-3)[250X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Definitions/Glossary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	RPD of the LCS and LCSD exceeds the control limits

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-102049-1	SW-04-LOW_06052014	Water	06/05/14 09:30	06/06/14 08:35
680-102049-2	SW-03-LOW_06052014	Water	06/05/14 09:40	06/06/14 08:35
680-102049-3	TMW-01_06052014	Water	06/05/14 09:55	06/06/14 08:35
680-102049-4	SW-01-LOW_06052014	Water	06/05/14 10:40	06/06/14 08:35
680-102049-5	SW-02-LOW_06052014	Water	06/05/14 10:45	06/06/14 08:35
680-102049-6	PDMW-26T_06052014	Water	06/05/14 11:35	06/06/14 08:35
680-102049-7	MW-3R_06052014	Water	06/05/14 13:25	06/06/14 08:35
680-102049-8	PDMW-52_06052014	Water	06/05/14 12:50	06/06/14 08:35
680-102049-9	PDMW-10R_06052014	Water	06/05/14 13:05	06/06/14 08:35
680-102049-10	DUP-03_06052014	Water	06/05/14 00:00	06/06/14 08:35
680-102049-11	PDMW-13P_06052014	Water	06/05/14 14:50	06/06/14 08:35
680-102049-12	SW-03-HIGH_06052014	Water	06/05/14 14:25	06/06/14 08:35
680-102049-13	SW-04-HIGH_06052014	Water	06/05/14 14:45	06/06/14 08:35
680-102049-14	SW-02-HIGH_06052014	Water	06/05/14 15:15	06/06/14 08:35
680-102049-15	SW-01-HIGH_06052014	Water	06/05/14 15:30	06/06/14 08:35
680-102049-16	TRIPBLANK_06052014	Water	06/05/14 00:00	06/06/14 08:35

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-04-LOW_06052014

Lab Sample ID: 680-102049-1

Date Collected: 06/05/14 09:30

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 14:31	1
Benzene	1.0	U	1.0		ug/L			06/13/14 14:31	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 14:31	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 14:31	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 14:31	1
2-Butanone	10	U	10		ug/L			06/13/14 14:31	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 14:31	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 14:31	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 14:31	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 14:31	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 14:31	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 14:31	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 14:31	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 14:31	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 14:31	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 14:31	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 14:31	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 14:31	1
2-Hexanone	10	U	10		ug/L			06/13/14 14:31	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 14:31	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 14:31	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 14:31	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 14:31	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 14:31	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 14:31	1
Styrene	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 14:31	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 14:31	1
Toluene	1.0	U	1.0		ug/L			06/13/14 14:31	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 14:31	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 14:31	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 14:31	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 14:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 14:31	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 14:31	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 14:31	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-04-LOW_06052014

Lab Sample ID: 680-102049-1

Date Collected: 06/05/14 09:30

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		70 - 130		06/13/14 14:31	1
Dibromofluoromethane	100		70 - 130		06/13/14 14:31	1
Toluene-d8 (Surr)	98		70 - 130		06/13/14 14:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Acenaphthylene	10	U *	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Benzo[a]anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Benzo[a]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Chrysene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Dibenz(a,h)anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Fluorene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
1-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
2-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Naphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Phenanthrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1
Pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 15:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	94		38 - 130	06/12/14 15:41	06/16/14 15:38	1
Nitrobenzene-d5 (Surr)	99		39 - 130	06/12/14 15:41	06/16/14 15:38	1
Terphenyl-d14 (Surr)	94		10 - 143	06/12/14 15:41	06/16/14 15:38	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 11:38	06/17/14 18:48	1
Chromium	10	U	10		ug/L		06/07/14 11:38	06/17/14 18:48	1
Nickel	40	U	40		ug/L		06/07/14 11:38	06/17/14 18:48	1
Lead	10	U	10		ug/L		06/07/14 11:38	06/17/14 18:48	1
Zinc	20	U	20		ug/L		06/07/14 11:38	06/17/14 18:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.9		0.050		mg/L			06/13/14 16:29	1
Nitrate as N	0.28		0.050		mg/L			06/06/14 16:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	170		5.0		mg/L			06/12/14 21:21	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-03-LOW_06052014

Lab Sample ID: 680-102049-2

Date Collected: 06/05/14 09:40

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 14:55	1
Benzene	1.0	U	1.0		ug/L			06/13/14 14:55	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 14:55	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 14:55	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 14:55	1
2-Butanone	10	U	10		ug/L			06/13/14 14:55	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 14:55	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 14:55	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 14:55	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 14:55	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 14:55	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 14:55	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 14:55	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 14:55	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 14:55	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 14:55	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 14:55	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 14:55	1
2-Hexanone	10	U	10		ug/L			06/13/14 14:55	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 14:55	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 14:55	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 14:55	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 14:55	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 14:55	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 14:55	1
Styrene	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 14:55	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 14:55	1
Toluene	1.0	U	1.0		ug/L			06/13/14 14:55	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 14:55	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 14:55	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 14:55	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 14:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 14:55	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 14:55	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 14:55	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-03-LOW_06052014

Lab Sample ID: 680-102049-2

Date Collected: 06/05/14 09:40

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		70 - 130		06/13/14 14:55	1
Dibromofluoromethane	98		70 - 130		06/13/14 14:55	1
Toluene-d8 (Surr)	100		70 - 130		06/13/14 14:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Acenaphthylene	9.6	U *	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Anthracene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Benzo[a]anthracene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Benzo[a]pyrene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Benzo[b]fluoranthene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Benzo[g,h,i]perylene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Benzo[k]fluoranthene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Chrysene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Dibenz(a,h)anthracene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Fluoranthene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Fluorene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Indeno[1,2,3-cd]pyrene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
1-Methylnaphthalene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
2-Methylnaphthalene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Naphthalene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Phenanthrene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1
Pyrene	9.6	U	9.6		ug/L		06/12/14 15:41	06/16/14 16:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	77		38 - 130	06/12/14 15:41	06/16/14 16:03	1
Nitrobenzene-d5 (Surr)	83		39 - 130	06/12/14 15:41	06/16/14 16:03	1
Terphenyl-d14 (Surr)	79		10 - 143	06/12/14 15:41	06/16/14 16:03	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 11:38	06/17/14 18:53	1
Chromium	10	U	10		ug/L		06/07/14 11:38	06/17/14 18:53	1
Nickel	40	U	40		ug/L		06/07/14 11:38	06/17/14 18:53	1
Lead	10	U	10		ug/L		06/07/14 11:38	06/17/14 18:53	1
Zinc	20	U	20		ug/L		06/07/14 11:38	06/17/14 18:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.7		0.050		mg/L			06/13/14 12:39	1
Nitrate as N	0.26		0.050		mg/L			06/06/14 16:26	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	160		5.0		mg/L			06/12/14 21:27	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: TMW-01_06052014

Lab Sample ID: 680-102049-3

Date Collected: 06/05/14 09:55

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	50	U	50		ug/L			06/13/14 15:20	2
Benzene	81		2.0		ug/L			06/13/14 15:20	2
Bromodichloromethane	2.0	U	2.0		ug/L			06/13/14 15:20	2
Bromoform	2.0	U	2.0		ug/L			06/13/14 15:20	2
Bromomethane	10	U	10		ug/L			06/13/14 15:20	2
2-Butanone	20	U	20		ug/L			06/13/14 15:20	2
Carbon disulfide	4.0	U	4.0		ug/L			06/13/14 15:20	2
Carbon tetrachloride	2.0	U	2.0		ug/L			06/13/14 15:20	2
Chlorobenzene	2.0	U	2.0		ug/L			06/13/14 15:20	2
Chloroethane	10	U	10		ug/L			06/13/14 15:20	2
Chloroform	2.0	U	2.0		ug/L			06/13/14 15:20	2
Chloromethane	2.0	U	2.0		ug/L			06/13/14 15:20	2
cis-1,2-Dichloroethene	2.0	U	2.0		ug/L			06/13/14 15:20	2
cis-1,3-Dichloropropene	2.0	U	2.0		ug/L			06/13/14 15:20	2
Cyclohexane	6.6		2.0		ug/L			06/13/14 15:20	2
Dibromochloromethane	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,2-Dibromo-3-Chloropropane	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,2-Dibromoethane	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,2-Dichlorobenzene	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,3-Dichlorobenzene	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,4-Dichlorobenzene	2.0	U	2.0		ug/L			06/13/14 15:20	2
Dichlorodifluoromethane	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,1-Dichloroethane	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,2-Dichloroethane	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,1-Dichloroethene	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,2-Dichloropropane	2.0	U	2.0		ug/L			06/13/14 15:20	2
Ethylbenzene	2.0	U	2.0		ug/L			06/13/14 15:20	2
2-Hexanone	20	U	20		ug/L			06/13/14 15:20	2
Isopropylbenzene	43		2.0		ug/L			06/13/14 15:20	2
Methyl acetate	2.0	U	2.0		ug/L			06/13/14 15:20	2
Methylcyclohexane	3.2		2.0		ug/L			06/13/14 15:20	2
Methylene Chloride	10	U	10		ug/L			06/13/14 15:20	2
4-Methyl-2-pentanone	20	U	20		ug/L			06/13/14 15:20	2
Methyl tert-butyl ether	20	U	20		ug/L			06/13/14 15:20	2
Styrene	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,1,2,2-Tetrachloroethane	2.0	U	2.0		ug/L			06/13/14 15:20	2
Tetrachloroethene	2.0	U	2.0		ug/L			06/13/14 15:20	2
Toluene	2.0	U	2.0		ug/L			06/13/14 15:20	2
trans-1,2-Dichloroethene	2.0	U	2.0		ug/L			06/13/14 15:20	2
trans-1,3-Dichloropropene	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,2,4-Trichlorobenzene	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,1,1-Trichloroethane	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,1,2-Trichloroethane	2.0	U	2.0		ug/L			06/13/14 15:20	2
Trichloroethene	2.0	U	2.0		ug/L			06/13/14 15:20	2
Trichlorofluoromethane	2.0	U	2.0		ug/L			06/13/14 15:20	2
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0		ug/L			06/13/14 15:20	2
Vinyl chloride	2.0	U	2.0		ug/L			06/13/14 15:20	2
Xylenes, Total	250		4.0		ug/L			06/13/14 15:20	2

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: TMW-01_06052014

Lab Sample ID: 680-102049-3

Date Collected: 06/05/14 09:55

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		70 - 130		06/13/14 15:20	2
Dibromofluoromethane	91		70 - 130		06/13/14 15:20	2
Toluene-d8 (Surr)	107		70 - 130		06/13/14 15:20	2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Acenaphthylene	9.8	U *	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Anthracene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Benzo[a]anthracene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Benzo[a]pyrene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Benzo[b]fluoranthene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Benzo[g,h,i]perylene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Benzo[k]fluoranthene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Chrysene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Dibenz(a,h)anthracene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Fluoranthene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Fluorene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Indeno[1,2,3-cd]pyrene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
1-Methylnaphthalene	15		9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
2-Methylnaphthalene	15		9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Naphthalene	39		9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Phenanthrene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1
Pyrene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 16:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	86		38 - 130	06/12/14 15:41	06/16/14 16:27	1
Nitrobenzene-d5 (Surr)	105		39 - 130	06/12/14 15:41	06/16/14 16:27	1
Terphenyl-d14 (Surr)	40		10 - 143	06/12/14 15:41	06/16/14 16:27	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	95		20		ug/L		06/11/14 11:17	06/12/14 21:03	1
Chromium	17		10		ug/L		06/11/14 11:17	06/12/14 21:03	1
Lead	10	U	10		ug/L		06/11/14 11:17	06/12/14 21:03	1
Nickel	40	U	40		ug/L		06/11/14 11:17	06/12/14 21:03	1
Zinc	72		20		ug/L		06/11/14 11:17	06/12/14 21:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	2600		100		mg/L			06/13/14 17:23	2000
Nitrate as N	170		13		mg/L			06/06/14 16:32	250

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-01-LOW_06052014

Lab Sample ID: 680-102049-4

Date Collected: 06/05/14 10:40

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 15:44	1
Benzene	1.0	U	1.0		ug/L			06/13/14 15:44	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 15:44	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 15:44	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 15:44	1
2-Butanone	10	U	10		ug/L			06/13/14 15:44	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 15:44	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 15:44	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 15:44	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 15:44	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 15:44	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 15:44	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 15:44	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 15:44	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 15:44	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 15:44	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 15:44	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 15:44	1
2-Hexanone	10	U	10		ug/L			06/13/14 15:44	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 15:44	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 15:44	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 15:44	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 15:44	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 15:44	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 15:44	1
Styrene	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 15:44	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 15:44	1
Toluene	1.0	U	1.0		ug/L			06/13/14 15:44	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 15:44	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 15:44	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 15:44	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 15:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 15:44	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 15:44	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 15:44	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-01-LOW_06052014

Lab Sample ID: 680-102049-4

Date Collected: 06/05/14 10:40

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		70 - 130		06/13/14 15:44	1
Dibromofluoromethane	99		70 - 130		06/13/14 15:44	1
Toluene-d8 (Surr)	104		70 - 130		06/13/14 15:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Acenaphthylene	10	U *	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Benzo[a]anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Benzo[a]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Chrysene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Dibenz(a,h)anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Fluorene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
1-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
2-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Naphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Phenanthrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1
Pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 17:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	100		38 - 130	06/12/14 15:41	06/16/14 17:16	1
Nitrobenzene-d5 (Surr)	110		39 - 130	06/12/14 15:41	06/16/14 17:16	1
Terphenyl-d14 (Surr)	122		10 - 143	06/12/14 15:41	06/16/14 17:16	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 11:38	06/17/14 18:57	1
Chromium	10	U	10		ug/L		06/07/14 11:38	06/17/14 18:57	1
Nickel	40	U	40		ug/L		06/07/14 11:38	06/17/14 18:57	1
Lead	10	U	10		ug/L		06/07/14 11:38	06/17/14 18:57	1
Zinc	20	U	20		ug/L		06/07/14 11:38	06/17/14 18:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.4		0.10		mg/L			06/13/14 16:46	2
Nitrate as N	0.32		0.050		mg/L			06/06/14 16:33	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	160		5.0		mg/L			06/12/14 21:42	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-02-LOW_06052014

Lab Sample ID: 680-102049-5

Date Collected: 06/05/14 10:45

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 16:08	1
Benzene	1.0	U	1.0		ug/L			06/13/14 16:08	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 16:08	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 16:08	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 16:08	1
2-Butanone	10	U	10		ug/L			06/13/14 16:08	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 16:08	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 16:08	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:08	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 16:08	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 16:08	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 16:08	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 16:08	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 16:08	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 16:08	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:08	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 16:08	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 16:08	1
2-Hexanone	10	U	10		ug/L			06/13/14 16:08	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 16:08	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 16:08	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 16:08	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 16:08	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 16:08	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 16:08	1
Styrene	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 16:08	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 16:08	1
Toluene	1.0	U	1.0		ug/L			06/13/14 16:08	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 16:08	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 16:08	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 16:08	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 16:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 16:08	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 16:08	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 16:08	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-02-LOW_06052014

Lab Sample ID: 680-102049-5

Date Collected: 06/05/14 10:45

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		70 - 130		06/13/14 16:08	1
Dibromofluoromethane	98		70 - 130		06/13/14 16:08	1
Toluene-d8 (Surr)	97		70 - 130		06/13/14 16:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Acenaphthylene	9.7	U *	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Anthracene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Benzo[a]anthracene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Benzo[a]pyrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Benzo[b]fluoranthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Benzo[g,h,i]perylene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Benzo[k]fluoranthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Chrysene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Dibenz(a,h)anthracene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Fluoranthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Fluorene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Indeno[1,2,3-cd]pyrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
1-Methylnaphthalene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
2-Methylnaphthalene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Naphthalene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Phenanthrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1
Pyrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 17:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	92		38 - 130	06/12/14 15:41	06/16/14 17:41	1
Nitrobenzene-d5 (Surr)	102		39 - 130	06/12/14 15:41	06/16/14 17:41	1
Terphenyl-d14 (Surr)	100		10 - 143	06/12/14 15:41	06/16/14 17:41	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 11:38	06/17/14 19:02	1
Chromium	10	U	10		ug/L		06/07/14 11:38	06/17/14 19:02	1
Nickel	40	U	40		ug/L		06/07/14 11:38	06/17/14 19:02	1
Lead	10	U	10		ug/L		06/07/14 11:38	06/17/14 19:02	1
Zinc	20	U	20		ug/L		06/07/14 11:38	06/17/14 19:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.6		0.10		mg/L			06/13/14 16:46	2
Nitrate as N	0.22		0.050		mg/L			06/06/14 16:34	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	170		5.0		mg/L			06/12/14 21:34	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: PDMW-26T_06052014

Lab Sample ID: 680-102049-6

Date Collected: 06/05/14 11:35

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 16:32	1
Benzene	1.0	U	1.0		ug/L			06/13/14 16:32	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 16:32	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 16:32	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 16:32	1
2-Butanone	10	U	10		ug/L			06/13/14 16:32	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 16:32	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 16:32	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:32	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 16:32	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 16:32	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 16:32	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 16:32	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 16:32	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 16:32	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:32	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 16:32	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 16:32	1
2-Hexanone	10	U	10		ug/L			06/13/14 16:32	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 16:32	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 16:32	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 16:32	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 16:32	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 16:32	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 16:32	1
Styrene	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 16:32	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 16:32	1
Toluene	1.0	U	1.0		ug/L			06/13/14 16:32	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 16:32	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 16:32	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 16:32	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 16:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 16:32	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 16:32	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 16:32	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: PDMW-26T_06052014

Lab Sample ID: 680-102049-6

Date Collected: 06/05/14 11:35

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		70 - 130		06/13/14 16:32	1
Dibromofluoromethane	100		70 - 130		06/13/14 16:32	1
Toluene-d8 (Surr)	103		70 - 130		06/13/14 16:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Acenaphthylene	9.8	U *	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Anthracene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Benzo[a]anthracene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Benzo[a]pyrene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Benzo[b]fluoranthene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Benzo[g,h,i]perylene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Benzo[k]fluoranthene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Chrysene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Dibenz(a,h)anthracene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Fluoranthene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Fluorene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Indeno[1,2,3-cd]pyrene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
1-Methylnaphthalene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
2-Methylnaphthalene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Naphthalene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Phenanthrene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1
Pyrene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	107		38 - 130	06/12/14 15:41	06/16/14 18:06	1
Nitrobenzene-d5 (Surr)	115		39 - 130	06/12/14 15:41	06/16/14 18:06	1
Terphenyl-d14 (Surr)	74		10 - 143	06/12/14 15:41	06/16/14 18:06	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	25		20		ug/L		06/07/14 09:43	06/10/14 19:51	1
Chromium	10	U	10		ug/L		06/07/14 09:43	06/10/14 19:51	1
Lead	10	U	10		ug/L		06/07/14 09:43	06/10/14 19:51	1
Nickel	40	U	40		ug/L		06/07/14 09:43	06/10/14 19:51	1
Zinc	20	U	20		ug/L		06/07/14 09:43	06/10/14 19:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	600		25		mg/L			06/13/14 16:37	500
Nitrate as N	1.1		0.050		mg/L			06/06/14 16:38	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: MW-3R_06052014

Lab Sample ID: 680-102049-7

Date Collected: 06/05/14 13:25

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 16:57	1
Benzene	1.0	U	1.0		ug/L			06/13/14 16:57	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 16:57	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 16:57	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 16:57	1
2-Butanone	10	U	10		ug/L			06/13/14 16:57	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 16:57	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 16:57	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:57	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 16:57	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 16:57	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 16:57	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 16:57	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 16:57	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 16:57	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:57	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 16:57	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 16:57	1
2-Hexanone	10	U	10		ug/L			06/13/14 16:57	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 16:57	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 16:57	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 16:57	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 16:57	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 16:57	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 16:57	1
Styrene	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 16:57	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 16:57	1
Toluene	1.0	U	1.0		ug/L			06/13/14 16:57	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 16:57	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 16:57	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 16:57	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 16:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 16:57	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 16:57	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 16:57	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: MW-3R_06052014

Lab Sample ID: 680-102049-7

Date Collected: 06/05/14 13:25

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	97		70 - 130		06/13/14 16:57	1
Dibromofluoromethane	97		70 - 130		06/13/14 16:57	1
Toluene-d8 (Surr)	99		70 - 130		06/13/14 16:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Acenaphthylene	10	U *	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Benzo[a]anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Benzo[a]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Chrysene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Dibenz(a,h)anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Fluorene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
1-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
2-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Naphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Phenanthrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1
Pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 18:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	94		38 - 130	06/12/14 15:41	06/16/14 18:30	1
Nitrobenzene-d5 (Surr)	98		39 - 130	06/12/14 15:41	06/16/14 18:30	1
Terphenyl-d14 (Surr)	102		10 - 143	06/12/14 15:41	06/16/14 18:30	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 09:43	06/10/14 19:55	1
Chromium	10	U	10		ug/L		06/07/14 09:43	06/10/14 19:55	1
Lead	10	U	10		ug/L		06/07/14 09:43	06/10/14 19:55	1
Nickel	40	U	40		ug/L		06/07/14 09:43	06/10/14 19:55	1
Zinc	20	U	20		ug/L		06/07/14 09:43	06/10/14 19:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	3.9		0.25		mg/L			06/13/14 16:46	5
Nitrate as N	0.050	U	0.050		mg/L			06/06/14 16:39	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: PDMW-52_06052014

Lab Sample ID: 680-102049-8

Date Collected: 06/05/14 12:50

Matrix: Water

Date Received: 06/06/14 08:35

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	11		0.50		mg/L			06/13/14 14:56	10
Nitrate as N	0.050	U	0.050		mg/L			06/06/14 16:40	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: PDMW-10R_06052014

Lab Sample ID: 680-102049-9

Date Collected: 06/05/14 13:05

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 17:21	1
Benzene	1.0	U	1.0		ug/L			06/13/14 17:21	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 17:21	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 17:21	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 17:21	1
2-Butanone	10	U	10		ug/L			06/13/14 17:21	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 17:21	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 17:21	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 17:21	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 17:21	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 17:21	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 17:21	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 17:21	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 17:21	1
Cyclohexane	1.0		1.0		ug/L			06/13/14 17:21	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 17:21	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 17:21	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 17:21	1
2-Hexanone	10	U	10		ug/L			06/13/14 17:21	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 17:21	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 17:21	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 17:21	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 17:21	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 17:21	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 17:21	1
Styrene	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 17:21	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 17:21	1
Toluene	1.0	U	1.0		ug/L			06/13/14 17:21	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 17:21	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 17:21	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 17:21	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 17:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 17:21	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 17:21	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 17:21	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: PDMW-10R_06052014

Lab Sample ID: 680-102049-9

Date Collected: 06/05/14 13:05

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		70 - 130		06/13/14 17:21	1
Dibromofluoromethane	100		70 - 130		06/13/14 17:21	1
Toluene-d8 (Surr)	99		70 - 130		06/13/14 17:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Acenaphthylene	9.8	U *	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Anthracene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Benzo[a]anthracene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Benzo[a]pyrene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Benzo[b]fluoranthene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Benzo[g,h,i]perylene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Benzo[k]fluoranthene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Chrysene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Dibenz(a,h)anthracene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Fluoranthene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Fluorene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Indeno[1,2,3-cd]pyrene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
1-Methylnaphthalene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
2-Methylnaphthalene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Naphthalene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Phenanthrene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1
Pyrene	9.8	U	9.8		ug/L		06/12/14 15:41	06/16/14 18:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	92		38 - 130	06/12/14 15:41	06/16/14 18:54	1
Nitrobenzene-d5 (Surr)	106		39 - 130	06/12/14 15:41	06/16/14 18:54	1
Terphenyl-d14 (Surr)	69		10 - 143	06/12/14 15:41	06/16/14 18:54	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 09:43	06/10/14 19:59	1
Chromium	10	U	10		ug/L		06/07/14 09:43	06/10/14 19:59	1
Lead	10	U	10		ug/L		06/07/14 09:43	06/10/14 19:59	1
Nickel	40	U	40		ug/L		06/07/14 09:43	06/10/14 19:59	1
Zinc	20	U	20		ug/L		06/07/14 09:43	06/10/14 19:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	13		0.50		mg/L			06/13/14 15:06	10
Nitrate as N	0.050	U	0.050		mg/L			06/06/14 16:42	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: DUP-03_06052014

Lab Sample ID: 680-102049-10

Date Collected: 06/05/14 00:00

Matrix: Water

Date Received: 06/06/14 08:35

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	8.8		0.25		mg/L			06/13/14 15:16	5
Nitrate as N	0.050	U	0.050		mg/L			06/06/14 16:43	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: PDMW-13P_06052014

Lab Sample ID: 680-102049-11

Date Collected: 06/05/14 14:50

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 17:45	1
Benzene	1.0	U	1.0		ug/L			06/13/14 17:45	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 17:45	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 17:45	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 17:45	1
2-Butanone	10	U	10		ug/L			06/13/14 17:45	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 17:45	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 17:45	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 17:45	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 17:45	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 17:45	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 17:45	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 17:45	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 17:45	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 17:45	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 17:45	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 17:45	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 17:45	1
2-Hexanone	10	U	10		ug/L			06/13/14 17:45	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 17:45	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 17:45	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 17:45	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 17:45	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 17:45	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 17:45	1
Styrene	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 17:45	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 17:45	1
Toluene	1.0	U	1.0		ug/L			06/13/14 17:45	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 17:45	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 17:45	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 17:45	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 17:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 17:45	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 17:45	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 17:45	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: PDMW-13P_06052014

Lab Sample ID: 680-102049-11

Date Collected: 06/05/14 14:50

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	96		70 - 130		06/13/14 17:45	1
Dibromofluoromethane	98		70 - 130		06/13/14 17:45	1
Toluene-d8 (Surr)	99		70 - 130		06/13/14 17:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Acenaphthylene	9.7	U *	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Anthracene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Benzo[a]anthracene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Benzo[a]pyrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Benzo[b]fluoranthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Benzo[g,h,i]perylene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Benzo[k]fluoranthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Chrysene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Dibenz(a,h)anthracene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Fluoranthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Fluorene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Indeno[1,2,3-cd]pyrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
1-Methylnaphthalene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
2-Methylnaphthalene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Naphthalene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Phenanthrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1
Pyrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	80		38 - 130	06/12/14 15:41	06/16/14 19:18	1
Nitrobenzene-d5 (Surr)	87		39 - 130	06/12/14 15:41	06/16/14 19:18	1
Terphenyl-d14 (Surr)	89		10 - 143	06/12/14 15:41	06/16/14 19:18	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 09:43	06/10/14 20:03	1
Chromium	10	U	10		ug/L		06/07/14 09:43	06/10/14 20:03	1
Lead	21		10		ug/L		06/07/14 09:43	06/10/14 20:03	1
Nickel	40	U	40		ug/L		06/07/14 09:43	06/10/14 20:03	1
Zinc	20	U	20		ug/L		06/07/14 09:43	06/10/14 20:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.9		0.10		mg/L			06/13/14 17:11	2
Nitrate as N	0.21		0.050		mg/L			06/06/14 16:44	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-03-HIGH_06052014

Lab Sample ID: 680-102049-12

Date Collected: 06/05/14 14:25

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 18:10	1
Benzene	1.0	U	1.0		ug/L			06/13/14 18:10	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 18:10	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 18:10	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 18:10	1
2-Butanone	10	U	10		ug/L			06/13/14 18:10	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 18:10	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 18:10	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:10	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 18:10	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 18:10	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 18:10	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 18:10	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 18:10	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 18:10	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:10	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 18:10	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 18:10	1
2-Hexanone	10	U	10		ug/L			06/13/14 18:10	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 18:10	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 18:10	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 18:10	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 18:10	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 18:10	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 18:10	1
Styrene	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 18:10	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 18:10	1
Toluene	1.0	U	1.0		ug/L			06/13/14 18:10	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 18:10	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 18:10	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 18:10	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 18:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 18:10	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 18:10	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 18:10	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-03-HIGH_06052014

Lab Sample ID: 680-102049-12

Date Collected: 06/05/14 14:25

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		70 - 130		06/13/14 18:10	1
Dibromofluoromethane	98		70 - 130		06/13/14 18:10	1
Toluene-d8 (Surr)	102		70 - 130		06/13/14 18:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Acenaphthylene	9.7	U *	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Anthracene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Benzo[a]anthracene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Benzo[a]pyrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Benzo[b]fluoranthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Benzo[g,h,i]perylene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Benzo[k]fluoranthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Chrysene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Dibenz(a,h)anthracene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Fluoranthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Fluorene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Indeno[1,2,3-cd]pyrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
1-Methylnaphthalene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
2-Methylnaphthalene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Naphthalene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Phenanthrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1
Pyrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/16/14 19:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	97		38 - 130	06/12/14 15:41	06/16/14 19:42	1
Nitrobenzene-d5 (Surr)	107		39 - 130	06/12/14 15:41	06/16/14 19:42	1
Terphenyl-d14 (Surr)	104		10 - 143	06/12/14 15:41	06/16/14 19:42	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 11:38	06/17/14 19:07	1
Chromium	10	U	10		ug/L		06/07/14 11:38	06/17/14 19:07	1
Nickel	40	U	40		ug/L		06/07/14 11:38	06/17/14 19:07	1
Lead	10	U	10		ug/L		06/07/14 11:38	06/17/14 19:07	1
Zinc	20	U	20		ug/L		06/07/14 11:38	06/17/14 19:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.31		0.050		mg/L			06/13/14 12:21	1
Nitrate as N	0.36		0.050		mg/L			06/06/14 16:45	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	67		5.0		mg/L			06/15/14 22:12	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-04-HIGH_06052014

Lab Sample ID: 680-102049-13

Date Collected: 06/05/14 14:45

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 18:34	1
Benzene	1.0	U	1.0		ug/L			06/13/14 18:34	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 18:34	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 18:34	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 18:34	1
2-Butanone	10	U	10		ug/L			06/13/14 18:34	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 18:34	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 18:34	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:34	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 18:34	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 18:34	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 18:34	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 18:34	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 18:34	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 18:34	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:34	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 18:34	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 18:34	1
2-Hexanone	10	U	10		ug/L			06/13/14 18:34	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 18:34	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 18:34	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 18:34	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 18:34	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 18:34	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 18:34	1
Styrene	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 18:34	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 18:34	1
Toluene	1.0	U	1.0		ug/L			06/13/14 18:34	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 18:34	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 18:34	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 18:34	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 18:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 18:34	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 18:34	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 18:34	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-04-HIGH_06052014

Lab Sample ID: 680-102049-13

Date Collected: 06/05/14 14:45

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		70 - 130		06/13/14 18:34	1
Dibromofluoromethane	98		70 - 130		06/13/14 18:34	1
Toluene-d8 (Surr)	99		70 - 130		06/13/14 18:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Acenaphthylene	10	U *	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Benzo[a]anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Benzo[a]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Chrysene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Dibenz(a,h)anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Fluorene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
1-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
2-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Naphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Phenanthrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1
Pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	98		38 - 130	06/12/14 15:41	06/16/14 20:07	1
Nitrobenzene-d5 (Surr)	109		39 - 130	06/12/14 15:41	06/16/14 20:07	1
Terphenyl-d14 (Surr)	98		10 - 143	06/12/14 15:41	06/16/14 20:07	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 11:38	06/17/14 19:11	1
Chromium	10	U	10		ug/L		06/07/14 11:38	06/17/14 19:11	1
Nickel	40	U	40		ug/L		06/07/14 11:38	06/17/14 19:11	1
Lead	10	U	10		ug/L		06/07/14 11:38	06/17/14 19:11	1
Zinc	20	U	20		ug/L		06/07/14 11:38	06/17/14 19:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.39		0.050		mg/L			06/13/14 12:21	1
Nitrate as N	0.39		0.050		mg/L			06/06/14 17:10	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	79		5.0		mg/L			06/15/14 22:06	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-02-HIGH_06052014

Lab Sample ID: 680-102049-14

Date Collected: 06/05/14 15:15

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 18:58	1
Benzene	1.0	U	1.0		ug/L			06/13/14 18:58	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 18:58	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 18:58	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 18:58	1
2-Butanone	10	U	10		ug/L			06/13/14 18:58	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 18:58	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 18:58	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:58	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 18:58	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 18:58	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 18:58	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 18:58	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 18:58	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 18:58	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:58	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 18:58	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 18:58	1
2-Hexanone	10	U	10		ug/L			06/13/14 18:58	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 18:58	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 18:58	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 18:58	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 18:58	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 18:58	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 18:58	1
Styrene	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 18:58	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 18:58	1
Toluene	1.0	U	1.0		ug/L			06/13/14 18:58	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 18:58	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 18:58	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 18:58	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 18:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 18:58	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 18:58	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 18:58	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-02-HIGH_06052014

Lab Sample ID: 680-102049-14

Date Collected: 06/05/14 15:15

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		70 - 130		06/13/14 18:58	1
Dibromofluoromethane	97		70 - 130		06/13/14 18:58	1
Toluene-d8 (Surr)	100		70 - 130		06/13/14 18:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Acenaphthylene	9.5	U *	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Anthracene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Benzo[a]anthracene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Benzo[a]pyrene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Benzo[b]fluoranthene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Benzo[g,h,i]perylene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Benzo[k]fluoranthene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Chrysene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Dibenz(a,h)anthracene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Fluoranthene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Fluorene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Indeno[1,2,3-cd]pyrene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
1-Methylnaphthalene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
2-Methylnaphthalene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Naphthalene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Phenanthrene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1
Pyrene	9.5	U	9.5		ug/L		06/12/14 15:41	06/16/14 20:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	109		38 - 130	06/12/14 15:41	06/16/14 20:30	1
Nitrobenzene-d5 (Surr)	113		39 - 130	06/12/14 15:41	06/16/14 20:30	1
Terphenyl-d14 (Surr)	101		10 - 143	06/12/14 15:41	06/16/14 20:30	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 11:38	06/17/14 19:16	1
Chromium	10	U	10		ug/L		06/07/14 11:38	06/17/14 19:16	1
Nickel	40	U	40		ug/L		06/07/14 11:38	06/17/14 19:16	1
Lead	10	U	10		ug/L		06/07/14 11:38	06/17/14 19:16	1
Zinc	20	U	20		ug/L		06/07/14 11:38	06/17/14 19:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.12		0.050		mg/L			06/13/14 12:21	1
Nitrate as N	0.37		0.050		mg/L			06/06/14 16:54	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	45		5.0		mg/L			06/16/14 00:06	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-01-HIGH_06052014

Lab Sample ID: 680-102049-15

Date Collected: 06/05/14 15:30

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 19:23	1
Benzene	1.0	U	1.0		ug/L			06/13/14 19:23	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 19:23	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 19:23	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 19:23	1
2-Butanone	10	U	10		ug/L			06/13/14 19:23	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 19:23	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 19:23	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 19:23	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 19:23	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 19:23	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 19:23	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 19:23	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 19:23	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 19:23	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 19:23	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 19:23	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 19:23	1
2-Hexanone	10	U	10		ug/L			06/13/14 19:23	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 19:23	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 19:23	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 19:23	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 19:23	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 19:23	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 19:23	1
Styrene	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 19:23	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 19:23	1
Toluene	1.0	U	1.0		ug/L			06/13/14 19:23	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 19:23	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 19:23	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 19:23	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 19:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 19:23	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 19:23	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 19:23	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-01-HIGH_06052014

Lab Sample ID: 680-102049-15

Date Collected: 06/05/14 15:30

Matrix: Water

Date Received: 06/06/14 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		70 - 130		06/13/14 19:23	1
Dibromofluoromethane	98		70 - 130		06/13/14 19:23	1
Toluene-d8 (Surr)	101		70 - 130		06/13/14 19:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Acenaphthylene	10	U *	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Benzo[a]anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Benzo[a]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Chrysene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Dibenz(a,h)anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Fluorene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
1-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
2-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Naphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Phenanthrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1
Pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 20:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	87		38 - 130	06/12/14 15:41	06/16/14 20:55	1
Nitrobenzene-d5 (Surr)	97		39 - 130	06/12/14 15:41	06/16/14 20:55	1
Terphenyl-d14 (Surr)	98		10 - 143	06/12/14 15:41	06/16/14 20:55	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 11:38	06/17/14 19:21	1
Chromium	10	U	10		ug/L		06/07/14 11:38	06/17/14 19:21	1
Nickel	40	U	40		ug/L		06/07/14 11:38	06/17/14 19:21	1
Lead	10	U	10		ug/L		06/07/14 11:38	06/17/14 19:21	1
Zinc	20	U	20		ug/L		06/07/14 11:38	06/17/14 19:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.44		0.050		mg/L			06/13/14 12:21	1
Nitrate as N	0.34		0.050		mg/L			06/06/14 17:11	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	43		5.0		mg/L			06/16/14 00:13	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: TRIPBLANK_06052014

Lab Sample ID: 680-102049-16

Date Collected: 06/05/14 00:00

Matrix: Water

Date Received: 06/06/14 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 12:56	1
Benzene	1.0	U	1.0		ug/L			06/13/14 12:56	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 12:56	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 12:56	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 12:56	1
2-Butanone	10	U	10		ug/L			06/13/14 12:56	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 12:56	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 12:56	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 12:56	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 12:56	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 12:56	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 12:56	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 12:56	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 12:56	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 12:56	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 12:56	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 12:56	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 12:56	1
2-Hexanone	10	U	10		ug/L			06/13/14 12:56	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 12:56	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 12:56	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 12:56	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 12:56	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 12:56	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 12:56	1
Styrene	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 12:56	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 12:56	1
Toluene	1.0	U	1.0		ug/L			06/13/14 12:56	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 12:56	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 12:56	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 12:56	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 12:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 12:56	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 12:56	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 12:56	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: TRIPBLANK_06052014

Lab Sample ID: 680-102049-16

Date Collected: 06/05/14 00:00

Matrix: Water

Date Received: 06/06/14 08:35

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
4-Bromofluorobenzene	99		70 - 130		06/13/14 12:56	1
Dibromofluoromethane	99		70 - 130		06/13/14 12:56	1
Toluene-d8 (Surr)	98		70 - 130		06/13/14 12:56	1

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-334022/7

Matrix: Water

Analysis Batch: 334022

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25	U	25		ug/L			06/13/14 11:04	1
Benzene	1.0	U	1.0		ug/L			06/13/14 11:04	1
Bromodichloromethane	1.0	U	1.0		ug/L			06/13/14 11:04	1
Bromoform	1.0	U	1.0		ug/L			06/13/14 11:04	1
Bromomethane	5.0	U	5.0		ug/L			06/13/14 11:04	1
2-Butanone	10	U	10		ug/L			06/13/14 11:04	1
Carbon disulfide	2.0	U	2.0		ug/L			06/13/14 11:04	1
Carbon tetrachloride	1.0	U	1.0		ug/L			06/13/14 11:04	1
Chlorobenzene	1.0	U	1.0		ug/L			06/13/14 11:04	1
Chloroethane	5.0	U	5.0		ug/L			06/13/14 11:04	1
Chloroform	1.0	U	1.0		ug/L			06/13/14 11:04	1
Chloromethane	1.0	U	1.0		ug/L			06/13/14 11:04	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 11:04	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 11:04	1
Cyclohexane	1.0	U	1.0		ug/L			06/13/14 11:04	1
Dibromochloromethane	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,2-Dibromoethane	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			06/13/14 11:04	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			06/13/14 11:04	1
Ethylbenzene	1.0	U	1.0		ug/L			06/13/14 11:04	1
2-Hexanone	10	U	10		ug/L			06/13/14 11:04	1
Isopropylbenzene	1.0	U	1.0		ug/L			06/13/14 11:04	1
Methyl acetate	1.0	U	1.0		ug/L			06/13/14 11:04	1
Methylcyclohexane	1.0	U	1.0		ug/L			06/13/14 11:04	1
Methylene Chloride	5.0	U	5.0		ug/L			06/13/14 11:04	1
4-Methyl-2-pentanone	10	U	10		ug/L			06/13/14 11:04	1
Methyl tert-butyl ether	10	U	10		ug/L			06/13/14 11:04	1
Styrene	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			06/13/14 11:04	1
Tetrachloroethene	1.0	U	1.0		ug/L			06/13/14 11:04	1
Toluene	1.0	U	1.0		ug/L			06/13/14 11:04	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			06/13/14 11:04	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			06/13/14 11:04	1
Trichloroethene	1.0	U	1.0		ug/L			06/13/14 11:04	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			06/13/14 11:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			06/13/14 11:04	1
Vinyl chloride	1.0	U	1.0		ug/L			06/13/14 11:04	1
Xylenes, Total	2.0	U	2.0		ug/L			06/13/14 11:04	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

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

Lab Sample ID: MB 680-334022/7

Matrix: Water

Analysis Batch: 334022

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		70 - 130		06/13/14 11:04	1
Dibromofluoromethane	100		70 - 130		06/13/14 11:04	1
Toluene-d8 (Surr)	102		70 - 130		06/13/14 11:04	1

Lab Sample ID: LCS 680-334022/4

Matrix: Water

Analysis Batch: 334022

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	100	92.9		ug/L		93	39 - 162
Benzene	50.0	46.6		ug/L		93	74 - 123
Bromodichloromethane	50.0	52.1		ug/L		104	72 - 129
Bromoform	50.0	53.2		ug/L		106	60 - 134
Bromomethane	50.0	62.2		ug/L		124	10 - 171
2-Butanone	100	82.7		ug/L		83	55 - 142
Carbon disulfide	50.0	47.2		ug/L		94	63 - 142
Carbon tetrachloride	50.0	55.2		ug/L		110	70 - 131
Chlorobenzene	50.0	46.6		ug/L		93	79 - 120
Chloroethane	50.0	60.0		ug/L		120	47 - 148
Chloroform	50.0	51.8		ug/L		104	76 - 128
Chloromethane	50.0	47.0		ug/L		94	47 - 151
cis-1,2-Dichloroethene	50.0	47.5		ug/L		95	78 - 127
cis-1,3-Dichloropropene	50.0	52.7		ug/L		105	73 - 128
Cyclohexane	50.0	46.9		ug/L		94	68 - 137
Dibromochloromethane	50.0	59.1		ug/L		118	63 - 134
1,2-Dibromo-3-Chloropropane	50.0	55.7		ug/L		111	57 - 126
1,2-Dibromoethane	50.0	47.3		ug/L		95	75 - 127
1,2-Dichlorobenzene	50.0	43.4		ug/L		87	77 - 124
1,3-Dichlorobenzene	50.0	44.8		ug/L		90	79 - 123
1,4-Dichlorobenzene	50.0	44.1		ug/L		88	76 - 124
Dichlorodifluoromethane	50.0	50.6		ug/L		101	41 - 165
1,1-Dichloroethane	50.0	49.4		ug/L		99	69 - 132
1,2-Dichloroethane	50.0	43.8		ug/L		88	75 - 120
1,1-Dichloroethene	50.0	50.7		ug/L		101	73 - 134
1,2-Dichloropropane	50.0	46.3		ug/L		93	71 - 126
Ethylbenzene	50.0	47.7		ug/L		95	78 - 125
2-Hexanone	100	82.9		ug/L		83	52 - 149
Isopropylbenzene	50.0	48.2		ug/L		96	72 - 129
Methyl acetate	50.0	48.9		ug/L		98	26 - 182
Methylcyclohexane	50.0	49.3		ug/L		99	72 - 133
Methylene Chloride	50.0	47.5		ug/L		95	79 - 124
4-Methyl-2-pentanone	100	82.7		ug/L		83	51 - 143
Methyl tert-butyl ether	100	101		ug/L		101	76 - 126
Styrene	50.0	46.6		ug/L		93	75 - 129
1,1,2,2-Tetrachloroethane	50.0	45.4		ug/L		91	71 - 127
Tetrachloroethene	50.0	50.8		ug/L		102	77 - 128
Toluene	50.0	46.0		ug/L		92	77 - 125
trans-1,2-Dichloroethene	50.0	49.5		ug/L		99	78 - 130

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

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

Lab Sample ID: LCS 680-334022/4

Matrix: Water

Analysis Batch: 334022

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,3-Dichloropropene	50.0	53.0		ug/L		106	72 - 127
1,2,4-Trichlorobenzene	50.0	45.4		ug/L		91	67 - 134
1,1,1-Trichloroethane	50.0	52.8		ug/L		106	76 - 126
1,1,2-Trichloroethane	50.0	45.3		ug/L		91	69 - 127
Trichloroethene	50.0	50.0		ug/L		100	80 - 120
Trichlorofluoromethane	50.0	53.4		ug/L		107	66 - 144
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	52.2		ug/L		104	72 - 139
Vinyl chloride	50.0	49.0		ug/L		98	58 - 141
Xylenes, Total	150	142		ug/L		95	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	91		70 - 130
Dibromofluoromethane	102		70 - 130
Toluene-d8 (Surr)	92		70 - 130

Lab Sample ID: LCSD 680-334022/5

Matrix: Water

Analysis Batch: 334022

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	100	87.3		ug/L		87	39 - 162	6	50
Benzene	50.0	45.7		ug/L		91	74 - 123	2	30
Bromodichloromethane	50.0	53.2		ug/L		106	72 - 129	2	30
Bromoform	50.0	54.7		ug/L		109	60 - 134	3	30
Bromomethane	50.0	62.5		ug/L		125	10 - 171	1	50
2-Butanone	100	77.2		ug/L		77	55 - 142	7	30
Carbon disulfide	50.0	45.7		ug/L		91	63 - 142	3	30
Carbon tetrachloride	50.0	57.6		ug/L		115	70 - 131	4	30
Chlorobenzene	50.0	47.2		ug/L		94	79 - 120	1	30
Chloroethane	50.0	50.8		ug/L		102	47 - 148	17	40
Chloroform	50.0	44.6		ug/L		89	76 - 128	15	30
Chloromethane	50.0	41.2		ug/L		82	47 - 151	13	30
cis-1,2-Dichloroethene	50.0	42.8		ug/L		86	78 - 127	10	30
cis-1,3-Dichloropropene	50.0	54.1		ug/L		108	73 - 128	3	30
Cyclohexane	50.0	47.6		ug/L		95	68 - 137	2	30
Dibromochloromethane	50.0	60.3		ug/L		121	63 - 134	2	50
1,2-Dibromo-3-Chloropropane	50.0	56.3		ug/L		113	57 - 126	1	50
1,2-Dibromoethane	50.0	49.3		ug/L		99	75 - 127	4	30
1,2-Dichlorobenzene	50.0	43.9		ug/L		88	77 - 124	1	30
1,3-Dichlorobenzene	50.0	44.6		ug/L		89	79 - 123	0	30
1,4-Dichlorobenzene	50.0	44.9		ug/L		90	76 - 124	2	30
Dichlorodifluoromethane	50.0	45.0		ug/L		90	41 - 165	12	50
1,1-Dichloroethane	50.0	44.2		ug/L		88	69 - 132	11	30
1,2-Dichloroethane	50.0	44.6		ug/L		89	75 - 120	2	30
1,1,1-Dichloroethene	50.0	46.3		ug/L		93	73 - 134	9	30
1,2-Dichloropropane	50.0	46.5		ug/L		93	71 - 126	1	30
Ethylbenzene	50.0	47.9		ug/L		96	78 - 125	0	30

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

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

Lab Sample ID: LCSD 680-334022/5

Matrix: Water

Analysis Batch: 334022

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Hexanone	100	87.5		ug/L		88	52 - 149	5	30
Isopropylbenzene	50.0	49.3		ug/L		99	72 - 129	2	30
Methyl acetate	50.0	45.3		ug/L		91	26 - 182	7	30
Methylcyclohexane	50.0	50.1		ug/L		100	72 - 133	2	30
Methylene Chloride	50.0	42.3		ug/L		85	79 - 124	12	30
4-Methyl-2-pentanone	100	87.9		ug/L		88	51 - 143	6	30
Methyl tert-butyl ether	100	94.3		ug/L		94	76 - 126	7	30
Styrene	50.0	47.8		ug/L		96	75 - 129	3	30
1,1,2,2-Tetrachloroethane	50.0	46.5		ug/L		93	71 - 127	2	30
Tetrachloroethene	50.0	51.0		ug/L		102	77 - 128	0	30
Toluene	50.0	46.7		ug/L		93	77 - 125	2	30
trans-1,2-Dichloroethene	50.0	43.8		ug/L		88	78 - 130	12	30
trans-1,3-Dichloropropene	50.0	54.6		ug/L		109	72 - 127	3	50
1,2,4-Trichlorobenzene	50.0	46.6		ug/L		93	67 - 134	3	30
1,1,1-Trichloroethane	50.0	51.6		ug/L		103	76 - 126	2	30
1,1,2-Trichloroethane	50.0	46.7		ug/L		93	69 - 127	3	30
Trichloroethene	50.0	50.6		ug/L		101	80 - 120	1	30
Trichlorofluoromethane	50.0	47.9		ug/L		96	66 - 144	11	30
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	46.7		ug/L		93	72 - 139	11	30
Vinyl chloride	50.0	44.1		ug/L		88	58 - 141	11	30
Xylenes, Total	150	144		ug/L		96	80 - 124	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	93		70 - 130
Dibromofluoromethane	91		70 - 130
Toluene-d8 (Surr)	93		70 - 130

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

Lab Sample ID: MB 680-333829/18-A

Matrix: Water

Analysis Batch: 334440

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 333829

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Acenaphthylene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Benzo[a]anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Benzo[a]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Chrysene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Dibenz(a,h)anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Fluorene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

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

Lab Sample ID: MB 680-333829/18-A

Matrix: Water

Analysis Batch: 334440

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 333829

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
2-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Naphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Phenanthrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1
Pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	89		38 - 130	06/12/14 15:41	06/16/14 16:51	1
Nitrobenzene-d5 (Surr)	96		39 - 130	06/12/14 15:41	06/16/14 16:51	1
Terphenyl-d14 (Surr)	112		10 - 143	06/12/14 15:41	06/16/14 16:51	1

Lab Sample ID: LCS 680-333829/19-A

Matrix: Water

Analysis Batch: 334440

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 333829

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	81.9		ug/L		82	41 - 99
Acenaphthylene	100	38.0		ug/L		38	32 - 118
Anthracene	100	76.0		ug/L		76	50 - 103
Benzo[a]anthracene	100	80.4		ug/L		80	53 - 109
Benzo[a]pyrene	100	62.8		ug/L		63	38 - 111
Benzo[b]fluoranthene	100	78.0		ug/L		78	53 - 108
Benzo[g,h,i]perylene	100	70.4		ug/L		70	42 - 114
Benzo[k]fluoranthene	100	71.2		ug/L		71	49 - 108
Chrysene	100	80.3		ug/L		80	54 - 111
Dibenz(a,h)anthracene	100	80.5		ug/L		80	48 - 110
Fluoranthene	100	78.2		ug/L		78	48 - 111
Fluorene	100	82.9		ug/L		83	50 - 105
Indeno[1,2,3-cd]pyrene	100	83.8		ug/L		84	34 - 115
1-Methylnaphthalene	100	64.2		ug/L		64	50 - 130
2-Methylnaphthalene	100	64.9		ug/L		65	32 - 92
Naphthalene	100	63.4		ug/L		63	29 - 91
Phenanthrene	100	79.3		ug/L		79	52 - 108
Pyrene	100	69.8		ug/L		70	50 - 111

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	110		38 - 130
Nitrobenzene-d5 (Surr)	114		39 - 130
Terphenyl-d14 (Surr)	124		10 - 143

Lab Sample ID: LCSD 680-333829/20-A

Matrix: Water

Analysis Batch: 334440

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 333829

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Acenaphthene	100	86.2		ug/L		86	41 - 99	5	20
Acenaphthylene	100	76.0	*	ug/L		76	32 - 118	67	20
Anthracene	100	84.0		ug/L		84	50 - 103	10	20

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

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

Lab Sample ID: LCSD 680-333829/20-A

Matrix: Water

Analysis Batch: 334440

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 333829

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene	100	87.3		ug/L		87	53 - 109	8	40
Benzo[a]pyrene	100	81.9		ug/L		82	38 - 111	26	40
Benzo[b]fluoranthene	100	81.6		ug/L		82	53 - 108	5	50
Benzo[g,h,i]perylene	100	92.8		ug/L		93	42 - 114	27	50
Benzo[k]fluoranthene	100	85.3		ug/L		85	49 - 108	18	40
Chrysene	100	84.4		ug/L		84	54 - 111	5	50
Dibenz(a,h)anthracene	100	88.4		ug/L		88	48 - 110	9	40
Fluoranthene	100	86.4		ug/L		86	48 - 111	10	40
Fluorene	100	89.1		ug/L		89	50 - 105	7	20
Indeno[1,2,3-cd]pyrene	100	92.6		ug/L		93	34 - 115	10	40
1-Methylnaphthalene	100	68.6		ug/L		69	50 - 130	7	50
2-Methylnaphthalene	100	67.9		ug/L		68	32 - 92	5	30
Naphthalene	100	63.9		ug/L		64	29 - 91	1	40
Phenanthrene	100	84.5		ug/L		84	52 - 108	6	40
Pyrene	100	82.4		ug/L		82	50 - 111	17	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl	109		38 - 130
Nitrobenzene-d5 (Surr)	106		39 - 130
Terphenyl-d14 (Surr)	129		10 - 143

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-332912/1-A

Matrix: Water

Analysis Batch: 333550

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 332912

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:08	1
Chromium	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:08	1
Lead	10	U	10		ug/L		06/07/14 09:43	06/10/14 18:08	1
Nickel	40	U	40		ug/L		06/07/14 09:43	06/10/14 18:08	1
Zinc	20	U	20		ug/L		06/07/14 09:43	06/10/14 18:08	1

Lab Sample ID: LCS 680-332912/2-A

Matrix: Water

Analysis Batch: 333550

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 332912

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	101		ug/L		101	75 - 125
Chromium	100	97.4		ug/L		97	75 - 125
Lead	50.0	48.9		ug/L		98	75 - 125
Nickel	100	97.9		ug/L		98	75 - 125
Zinc	100	96.8		ug/L		97	75 - 125

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 680-333618/1-A

Matrix: Water

Analysis Batch: 334039

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 333618

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/11/14 11:17	06/12/14 20:54	1
Chromium	10	U	10		ug/L		06/11/14 11:17	06/12/14 20:54	1
Lead	10	U	10		ug/L		06/11/14 11:17	06/12/14 20:54	1
Nickel	40	U	40		ug/L		06/11/14 11:17	06/12/14 20:54	1
Zinc	20	U	20		ug/L		06/11/14 11:17	06/12/14 20:54	1

Lab Sample ID: LCS 680-333618/2-A

Matrix: Water

Analysis Batch: 334039

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 333618

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	99.3		ug/L		99	75 - 125
Chromium	100	95.8		ug/L		96	75 - 125
Lead	50.0	48.3		ug/L		97	75 - 125
Nickel	100	94.0		ug/L		94	75 - 125
Zinc	100	96.7		ug/L		97	75 - 125

Lab Sample ID: 680-102049-3 MS

Matrix: Water

Analysis Batch: 334039

Client Sample ID: TMW-01_06052014

Prep Type: Total/NA

Prep Batch: 333618

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	95		100	206		ug/L		111	75 - 125
Chromium	17		100	120		ug/L		103	75 - 125
Lead	10	U	50.0	49.0		ug/L		98	75 - 125
Nickel	40	U	100	132		ug/L		98	75 - 125
Zinc	72		100	172		ug/L		100	75 - 125

Lab Sample ID: 680-102049-3 MSD

Matrix: Water

Analysis Batch: 334039

Client Sample ID: TMW-01_06052014

Prep Type: Total/NA

Prep Batch: 333618

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	95		100	208		ug/L		113	75 - 125	1	20
Chromium	17		100	121		ug/L		104	75 - 125	1	20
Lead	10	U	50.0	51.9		ug/L		104	75 - 125	6	20
Nickel	40	U	100	134		ug/L		100	75 - 125	1	20
Zinc	72		100	173		ug/L		101	75 - 125	1	20

Lab Sample ID: MB 680-332949/1-A

Matrix: Water

Analysis Batch: 334904

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 332949

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/07/14 11:38	06/17/14 17:50	1
Chromium	10	U	10		ug/L		06/07/14 11:38	06/17/14 17:50	1
Lead	10	U	10		ug/L		06/07/14 11:38	06/17/14 17:50	1
Nickel	40	U	40		ug/L		06/07/14 11:38	06/17/14 17:50	1
Zinc	20	U	20		ug/L		06/07/14 11:38	06/17/14 17:50	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 680-332949/2-A

Matrix: Water

Analysis Batch: 334904

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 332949

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	109		ug/L		109	75 - 125
Chromium	100	108		ug/L		108	75 - 125
Lead	50.0	54.4		ug/L		109	75 - 125
Nickel	100	108		ug/L		108	75 - 125
Zinc	100	108		ug/L		108	75 - 125

Lab Sample ID: 680-102049-15 MS

Matrix: Water

Analysis Batch: 334904

Client Sample ID: SW-01-HIGH_06052014

Prep Type: Dissolved

Prep Batch: 332949

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	20	U	100	119		ug/L		119	75 - 125
Chromium	10	U	100	104		ug/L		104	75 - 125
Lead	10	U	50.0	55.5		ug/L		111	75 - 125
Nickel	40	U	100	107		ug/L		100	75 - 125
Zinc	20	U	100	108		ug/L		108	75 - 125

Lab Sample ID: 680-102049-15 MSD

Matrix: Water

Analysis Batch: 334904

Client Sample ID: SW-01-HIGH_06052014

Prep Type: Dissolved

Prep Batch: 332949

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	20	U	100	120		ug/L		120	75 - 125	1	20
Chromium	10	U	100	104		ug/L		104	75 - 125	0	20
Lead	10	U	50.0	52.6		ug/L		105	75 - 125	5	20
Nickel	40	U	100	106		ug/L		99	75 - 125	1	20
Zinc	20	U	100	106		ug/L		106	75 - 125	2	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-334026/3

Matrix: Water

Analysis Batch: 334026

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			06/12/14 21:07	1

Lab Sample ID: LCS 680-334026/4

Matrix: Water

Analysis Batch: 334026

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	254		mg/L		102	80 - 120

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: MB 680-334396/3

Matrix: Water

Analysis Batch: 334396

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			06/15/14 21:23	1

Lab Sample ID: LCS 680-334396/4

Matrix: Water

Analysis Batch: 334396

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	229		mg/L		92	80 - 120

Lab Sample ID: LCSD 680-334396/30

Matrix: Water

Analysis Batch: 334396

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	242		mg/L		97	80 - 120	5	30

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-334251/51

Matrix: Water

Analysis Batch: 334251

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.050	U	0.050		mg/L			06/13/14 17:14	1

Lab Sample ID: LCS 680-334251/1

Matrix: Water

Analysis Batch: 334251

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	0.937		mg/L		94	90 - 110

Lab Sample ID: MB 680-334252/52

Matrix: Water

Analysis Batch: 334252

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.050	U	0.050		mg/L			06/13/14 17:14	1

Lab Sample ID: LCS 680-334252/46

Matrix: Water

Analysis Batch: 334252

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	0.946		mg/L		95	90 - 110

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-332872/13

Matrix: Water

Analysis Batch: 332872

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			06/06/14 16:05	1

Lab Sample ID: LCS 680-332872/16

Matrix: Water

Analysis Batch: 332872

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.543		mg/L		109	75 - 125

Lab Sample ID: 680-102049-2 DU

Matrix: Water

Analysis Batch: 332872

Client Sample ID: SW-03-LOW_06052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	0.26		0.259		mg/L		0.7	30

Lab Sample ID: MB 680-332873/11

Matrix: Water

Analysis Batch: 332873

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			06/06/14 16:46	1

Lab Sample ID: LCS 680-332873/16

Matrix: Water

Analysis Batch: 332873

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.539		mg/L		108	75 - 125

Lab Sample ID: 680-102049-14 MS

Matrix: Water

Analysis Batch: 332873

Client Sample ID: SW-02-HIGH_06052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.37		0.500	0.847		mg/L		96	75 - 125

Lab Sample ID: 680-102049-14 MSD

Matrix: Water

Analysis Batch: 332873

Client Sample ID: SW-02-HIGH_06052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.37		0.500	0.848		mg/L		96	75 - 125	0	30

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

GC/MS VOA

Analysis Batch: 334022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-1	SW-04-LOW_06052014	Total/NA	Water	8260B	
680-102049-2	SW-03-LOW_06052014	Total/NA	Water	8260B	
680-102049-3	TMW-01_06052014	Total/NA	Water	8260B	
680-102049-4	SW-01-LOW_06052014	Total/NA	Water	8260B	
680-102049-5	SW-02-LOW_06052014	Total/NA	Water	8260B	
680-102049-6	PDMW-26T_06052014	Total/NA	Water	8260B	
680-102049-7	MW-3R_06052014	Total/NA	Water	8260B	
680-102049-9	PDMW-10R_06052014	Total/NA	Water	8260B	
680-102049-11	PDMW-13P_06052014	Total/NA	Water	8260B	
680-102049-12	SW-03-HIGH_06052014	Total/NA	Water	8260B	
680-102049-13	SW-04-HIGH_06052014	Total/NA	Water	8260B	
680-102049-14	SW-02-HIGH_06052014	Total/NA	Water	8260B	
680-102049-15	SW-01-HIGH_06052014	Total/NA	Water	8260B	
680-102049-16	TRIPBLANK_06052014	Total/NA	Water	8260B	
LCS 680-334022/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-334022/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-334022/7	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 333829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-1	SW-04-LOW_06052014	Total/NA	Water	3520C	
680-102049-2	SW-03-LOW_06052014	Total/NA	Water	3520C	
680-102049-3	TMW-01_06052014	Total/NA	Water	3520C	
680-102049-4	SW-01-LOW_06052014	Total/NA	Water	3520C	
680-102049-5	SW-02-LOW_06052014	Total/NA	Water	3520C	
680-102049-6	PDMW-26T_06052014	Total/NA	Water	3520C	
680-102049-7	MW-3R_06052014	Total/NA	Water	3520C	
680-102049-9	PDMW-10R_06052014	Total/NA	Water	3520C	
680-102049-11	PDMW-13P_06052014	Total/NA	Water	3520C	
680-102049-12	SW-03-HIGH_06052014	Total/NA	Water	3520C	
680-102049-13	SW-04-HIGH_06052014	Total/NA	Water	3520C	
680-102049-14	SW-02-HIGH_06052014	Total/NA	Water	3520C	
680-102049-15	SW-01-HIGH_06052014	Total/NA	Water	3520C	
LCS 680-333829/19-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-333829/20-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-333829/18-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 334440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-1	SW-04-LOW_06052014	Total/NA	Water	8270D	333829
680-102049-2	SW-03-LOW_06052014	Total/NA	Water	8270D	333829
680-102049-3	TMW-01_06052014	Total/NA	Water	8270D	333829
680-102049-4	SW-01-LOW_06052014	Total/NA	Water	8270D	333829
680-102049-5	SW-02-LOW_06052014	Total/NA	Water	8270D	333829
680-102049-6	PDMW-26T_06052014	Total/NA	Water	8270D	333829
680-102049-7	MW-3R_06052014	Total/NA	Water	8270D	333829
680-102049-9	PDMW-10R_06052014	Total/NA	Water	8270D	333829
680-102049-11	PDMW-13P_06052014	Total/NA	Water	8270D	333829

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

GC/MS Semi VOA (Continued)

Analysis Batch: 334440 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-12	SW-03-HIGH_06052014	Total/NA	Water	8270D	333829
680-102049-13	SW-04-HIGH_06052014	Total/NA	Water	8270D	333829
680-102049-14	SW-02-HIGH_06052014	Total/NA	Water	8270D	333829
680-102049-15	SW-01-HIGH_06052014	Total/NA	Water	8270D	333829
LCS 680-333829/19-A	Lab Control Sample	Total/NA	Water	8270D	333829
LCSD 680-333829/20-A	Lab Control Sample Dup	Total/NA	Water	8270D	333829
MB 680-333829/18-A	Method Blank	Total/NA	Water	8270D	333829

Metals

Prep Batch: 332912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-6	PDMW-26T_06052014	Total/NA	Water	3010A	
680-102049-7	MW-3R_06052014	Total/NA	Water	3010A	
680-102049-9	PDMW-10R_06052014	Total/NA	Water	3010A	
680-102049-11	PDMW-13P_06052014	Total/NA	Water	3010A	
LCS 680-332912/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-332912/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 332949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-1	SW-04-LOW_06052014	Dissolved	Water	3005A	
680-102049-2	SW-03-LOW_06052014	Dissolved	Water	3005A	
680-102049-4	SW-01-LOW_06052014	Dissolved	Water	3005A	
680-102049-5	SW-02-LOW_06052014	Dissolved	Water	3005A	
680-102049-12	SW-03-HIGH_06052014	Dissolved	Water	3005A	
680-102049-13	SW-04-HIGH_06052014	Dissolved	Water	3005A	
680-102049-14	SW-02-HIGH_06052014	Dissolved	Water	3005A	
680-102049-15	SW-01-HIGH_06052014	Dissolved	Water	3005A	
680-102049-15 MS	SW-01-HIGH_06052014	Dissolved	Water	3005A	
680-102049-15 MSD	SW-01-HIGH_06052014	Dissolved	Water	3005A	
LCS 680-332949/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-332949/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 333550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-6	PDMW-26T_06052014	Total/NA	Water	6010C	332912
680-102049-7	MW-3R_06052014	Total/NA	Water	6010C	332912
680-102049-9	PDMW-10R_06052014	Total/NA	Water	6010C	332912
680-102049-11	PDMW-13P_06052014	Total/NA	Water	6010C	332912
LCS 680-332912/2-A	Lab Control Sample	Total/NA	Water	6010C	332912
MB 680-332912/1-A	Method Blank	Total/NA	Water	6010C	332912

Prep Batch: 333618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-3	TMW-01_06052014	Total/NA	Water	3010A	
680-102049-3 MS	TMW-01_06052014	Total/NA	Water	3010A	
680-102049-3 MSD	TMW-01_06052014	Total/NA	Water	3010A	
LCS 680-333618/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-333618/1-A	Method Blank	Total/NA	Water	3010A	

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Metals (Continued)

Analysis Batch: 334039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-3	TMW-01_06052014	Total/NA	Water	6010C	333618
680-102049-3 MS	TMW-01_06052014	Total/NA	Water	6010C	333618
680-102049-3 MSD	TMW-01_06052014	Total/NA	Water	6010C	333618
LCS 680-333618/2-A	Lab Control Sample	Total/NA	Water	6010C	333618
MB 680-333618/1-A	Method Blank	Total/NA	Water	6010C	333618

Analysis Batch: 334904

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-1	SW-04-LOW_06052014	Dissolved	Water	6010C	332949
680-102049-2	SW-03-LOW_06052014	Dissolved	Water	6010C	332949
680-102049-4	SW-01-LOW_06052014	Dissolved	Water	6010C	332949
680-102049-5	SW-02-LOW_06052014	Dissolved	Water	6010C	332949
680-102049-12	SW-03-HIGH_06052014	Dissolved	Water	6010C	332949
680-102049-13	SW-04-HIGH_06052014	Dissolved	Water	6010C	332949
680-102049-14	SW-02-HIGH_06052014	Dissolved	Water	6010C	332949
680-102049-15	SW-01-HIGH_06052014	Dissolved	Water	6010C	332949
680-102049-15 MS	SW-01-HIGH_06052014	Dissolved	Water	6010C	332949
680-102049-15 MSD	SW-01-HIGH_06052014	Dissolved	Water	6010C	332949
LCS 680-332949/2-A	Lab Control Sample	Total Recoverable	Water	6010C	332949
MB 680-332949/1-A	Method Blank	Total Recoverable	Water	6010C	332949

General Chemistry

Analysis Batch: 332872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-1	SW-04-LOW_06052014	Total/NA	Water	353.2	
680-102049-2	SW-03-LOW_06052014	Total/NA	Water	353.2	
680-102049-2 DU	SW-03-LOW_06052014	Total/NA	Water	353.2	
680-102049-3	TMW-01_06052014	Total/NA	Water	353.2	
680-102049-4	SW-01-LOW_06052014	Total/NA	Water	353.2	
680-102049-5	SW-02-LOW_06052014	Total/NA	Water	353.2	
680-102049-6	PDMW-26T_06052014	Total/NA	Water	353.2	
680-102049-7	MW-3R_06052014	Total/NA	Water	353.2	
680-102049-8	PDMW-52_06052014	Total/NA	Water	353.2	
680-102049-9	PDMW-10R_06052014	Total/NA	Water	353.2	
680-102049-10	DUP-03_06052014	Total/NA	Water	353.2	
680-102049-11	PDMW-13P_06052014	Total/NA	Water	353.2	
680-102049-12	SW-03-HIGH_06052014	Total/NA	Water	353.2	
LCS 680-332872/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-332872/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 332873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-13	SW-04-HIGH_06052014	Total/NA	Water	353.2	
680-102049-14	SW-02-HIGH_06052014	Total/NA	Water	353.2	
680-102049-14 MS	SW-02-HIGH_06052014	Total/NA	Water	353.2	
680-102049-14 MSD	SW-02-HIGH_06052014	Total/NA	Water	353.2	
680-102049-15	SW-01-HIGH_06052014	Total/NA	Water	353.2	
LCS 680-332873/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-332873/11	Method Blank	Total/NA	Water	353.2	

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

General Chemistry (Continued)

Analysis Batch: 334026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-1	SW-04-LOW_06052014	Total/NA	Water	310.1	
680-102049-2	SW-03-LOW_06052014	Total/NA	Water	310.1	
680-102049-4	SW-01-LOW_06052014	Total/NA	Water	310.1	
680-102049-5	SW-02-LOW_06052014	Total/NA	Water	310.1	
LCS 680-334026/4	Lab Control Sample	Total/NA	Water	310.1	
MB 680-334026/3	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 334251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-1	SW-04-LOW_06052014	Total/NA	Water	350.1	
680-102049-2	SW-03-LOW_06052014	Total/NA	Water	350.1	
680-102049-3	TMW-01_06052014	Total/NA	Water	350.1	
680-102049-4	SW-01-LOW_06052014	Total/NA	Water	350.1	
680-102049-5	SW-02-LOW_06052014	Total/NA	Water	350.1	
680-102049-6	PDMW-26T_06052014	Total/NA	Water	350.1	
680-102049-7	MW-3R_06052014	Total/NA	Water	350.1	
680-102049-8	PDMW-52_06052014	Total/NA	Water	350.1	
LCS 680-334251/1	Lab Control Sample	Total/NA	Water	350.1	
MB 680-334251/51	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 334252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-9	PDMW-10R_06052014	Total/NA	Water	350.1	
680-102049-10	DUP-03_06052014	Total/NA	Water	350.1	
680-102049-11	PDMW-13P_06052014	Total/NA	Water	350.1	
680-102049-12	SW-03-HIGH_06052014	Total/NA	Water	350.1	
680-102049-13	SW-04-HIGH_06052014	Total/NA	Water	350.1	
680-102049-14	SW-02-HIGH_06052014	Total/NA	Water	350.1	
680-102049-15	SW-01-HIGH_06052014	Total/NA	Water	350.1	
LCS 680-334252/46	Lab Control Sample	Total/NA	Water	350.1	
MB 680-334252/52	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 334396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102049-12	SW-03-HIGH_06052014	Total/NA	Water	310.1	
680-102049-13	SW-04-HIGH_06052014	Total/NA	Water	310.1	
680-102049-14	SW-02-HIGH_06052014	Total/NA	Water	310.1	
680-102049-15	SW-01-HIGH_06052014	Total/NA	Water	310.1	
LCS 680-334396/4	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-334396/30	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-334396/3	Method Blank	Total/NA	Water	310.1	

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-04-LOW_06052014

Date Collected: 06/05/14 09:30

Date Received: 06/06/14 08:35

Lab Sample ID: 680-102049-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 14:31	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			246 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	246 mL	0.5 mL	334440	06/16/14 15:38	LEG	TAL SAV
		Instrument ID: CMSG								
Dissolved	Prep	3005A			50 mL	50 mL	332949	06/07/14 11:38	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	334904	06/17/14 18:48	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	310.1		1			334026	06/12/14 21:21	TAR	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	334251	06/13/14 16:29	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332872	06/06/14 16:25	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-03-LOW_06052014

Date Collected: 06/05/14 09:40

Date Received: 06/06/14 08:35

Lab Sample ID: 680-102049-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 14:55	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			259.4 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	259.4 mL	0.5 mL	334440	06/16/14 16:03	LEG	TAL SAV
		Instrument ID: CMSG								
Dissolved	Prep	3005A			50 mL	50 mL	332949	06/07/14 11:38	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	334904	06/17/14 18:53	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	310.1		1			334026	06/12/14 21:27	TAR	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	334251	06/13/14 12:39	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332872	06/06/14 16:26	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: TMW-01_06052014

Date Collected: 06/05/14 09:55

Date Received: 06/06/14 08:35

Lab Sample ID: 680-102049-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	5 mL	5 mL	334022	06/13/14 15:20	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			256.4 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: TMW-01_06052014

Lab Sample ID: 680-102049-3

Date Collected: 06/05/14 09:55

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270D		1	256.4 mL	0.5 mL	334440	06/16/14 16:27	LEG	TAL SAV
		Instrument ID: CMSG								
Total/NA	Prep	3010A			50 mL	50 mL	333618	06/11/14 11:17	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	334039	06/12/14 21:03	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		2000	2 mL	2 mL	334251	06/13/14 17:23	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		250	2 mL	2 mL	332872	06/06/14 16:32	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-01-LOW_06052014

Lab Sample ID: 680-102049-4

Date Collected: 06/05/14 10:40

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 15:44	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			249.5 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	249.5 mL	0.5 mL	334440	06/16/14 17:16	LEG	TAL SAV
		Instrument ID: CMSG								
Dissolved	Prep	3005A			50 mL	50 mL	332949	06/07/14 11:38	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	334904	06/17/14 18:57	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	310.1		1			334026	06/12/14 21:42	TAR	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		2	2 mL	2 mL	334251	06/13/14 16:46	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332872	06/06/14 16:33	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-02-LOW_06052014

Lab Sample ID: 680-102049-5

Date Collected: 06/05/14 10:45

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 16:08	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			258.9 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	258.9 mL	0.5 mL	334440	06/16/14 17:41	LEG	TAL SAV
		Instrument ID: CMSG								
Dissolved	Prep	3005A			50 mL	50 mL	332949	06/07/14 11:38	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	334904	06/17/14 19:02	BCB	TAL SAV
		Instrument ID: ICPF								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-02-LOW_06052014

Lab Sample ID: 680-102049-5

Date Collected: 06/05/14 10:45

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			334026	06/12/14 21:34	TAR	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		2	2 mL	2 mL	334251	06/13/14 16:46	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332872	06/06/14 16:34	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-26T_06052014

Lab Sample ID: 680-102049-6

Date Collected: 06/05/14 11:35

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 16:32	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			255.9 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	255.9 mL	0.5 mL	334440	06/16/14 18:06	LEG	TAL SAV
		Instrument ID: CMSG								
Total/NA	Prep	3010A			50 mL	50 mL	332912	06/07/14 09:43	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 19:51	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		500	2 mL	2 mL	334251	06/13/14 16:37	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332872	06/06/14 16:38	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: MW-3R_06052014

Lab Sample ID: 680-102049-7

Date Collected: 06/05/14 13:25

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 16:57	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			246.7 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	246.7 mL	0.5 mL	334440	06/16/14 18:30	LEG	TAL SAV
		Instrument ID: CMSG								
Total/NA	Prep	3010A			50 mL	50 mL	332912	06/07/14 09:43	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 19:55	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		5	2 mL	2 mL	334251	06/13/14 16:46	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332872	06/06/14 16:39	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: PDMW-52_06052014

Lab Sample ID: 680-102049-8

Date Collected: 06/05/14 12:50

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		10	2 mL	2 mL	334251	06/13/14 14:56	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332872	06/06/14 16:40	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-10R_06052014

Lab Sample ID: 680-102049-9

Date Collected: 06/05/14 13:05

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 17:21	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			254.2 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	254.2 mL	0.5 mL	334440	06/16/14 18:54	LEG	TAL SAV
		Instrument ID: CMSG								
Total/NA	Prep	3010A			50 mL	50 mL	332912	06/07/14 09:43	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 19:59	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	334252	06/13/14 15:06	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332872	06/06/14 16:42	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: DUP-03_06052014

Lab Sample ID: 680-102049-10

Date Collected: 06/05/14 00:00

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		5	2 mL	2 mL	334252	06/13/14 15:16	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332872	06/06/14 16:43	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-13P_06052014

Lab Sample ID: 680-102049-11

Date Collected: 06/05/14 14:50

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 17:45	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			257 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	257 mL	0.5 mL	334440	06/16/14 19:18	LEG	TAL SAV
		Instrument ID: CMSG								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: PDMW-13P_06052014

Lab Sample ID: 680-102049-11

Date Collected: 06/05/14 14:50

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	332912	06/07/14 09:43	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	333550	06/10/14 20:03	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		2	2 mL	2 mL	334252	06/13/14 17:11	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332872	06/06/14 16:44	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-03-HIGH_06052014

Lab Sample ID: 680-102049-12

Date Collected: 06/05/14 14:25

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 18:10	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			257.6 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	257.6 mL	0.5 mL	334440	06/16/14 19:42	LEG	TAL SAV
		Instrument ID: CMSG								
Dissolved	Prep	3005A			50 mL	50 mL	332949	06/07/14 11:38	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	334904	06/17/14 19:07	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	310.1		1			334396	06/15/14 22:12	LBH	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	334252	06/13/14 12:21	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332872	06/06/14 16:45	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-04-HIGH_06052014

Lab Sample ID: 680-102049-13

Date Collected: 06/05/14 14:45

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 18:34	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			242.8 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	242.8 mL	0.5 mL	334440	06/16/14 20:07	LEG	TAL SAV
		Instrument ID: CMSG								
Dissolved	Prep	3005A			50 mL	50 mL	332949	06/07/14 11:38	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	334904	06/17/14 19:11	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	310.1		1			334396	06/15/14 22:06	LBH	TAL SAV
		Instrument ID: MANTECH								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-04-HIGH_06052014

Lab Sample ID: 680-102049-13

Date Collected: 06/05/14 14:45

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	2 mL	2 mL	334252	06/13/14 12:21	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332873	06/06/14 17:10	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-02-HIGH_06052014

Lab Sample ID: 680-102049-14

Date Collected: 06/05/14 15:15

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 18:58	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			262.3 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	262.3 mL	0.5 mL	334440	06/16/14 20:30	LEG	TAL SAV
		Instrument ID: CMSG								
Dissolved	Prep	3005A			50 mL	50 mL	332949	06/07/14 11:38	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	334904	06/17/14 19:16	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	310.1		1			334396	06/16/14 00:06	LBH	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	334252	06/13/14 12:21	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	332873	06/06/14 16:54	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-01-HIGH_06052014

Lab Sample ID: 680-102049-15

Date Collected: 06/05/14 15:30

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 19:23	MMT	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			244.7 mL	0.5 mL	333829	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	244.7 mL	0.5 mL	334440	06/16/14 20:55	LEG	TAL SAV
		Instrument ID: CMSG								
Dissolved	Prep	3005A			50 mL	50 mL	332949	06/07/14 11:38	BJB	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	334904	06/17/14 19:21	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	310.1		1			334396	06/16/14 00:13	LBH	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	334252	06/13/14 12:21	JME	TAL SAV
		Instrument ID: KONELAB1								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Client Sample ID: SW-01-HIGH_06052014

Lab Sample ID: 680-102049-15

Date Collected: 06/05/14 15:30

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	353.2		1	2 mL	2 mL	332873	06/06/14 17:11	GRX	TAL SAV
Instrument ID: LACHAT2										

Client Sample ID: TRIPBLANK_06052014

Lab Sample ID: 680-102049-16

Date Collected: 06/05/14 00:00

Matrix: Water

Date Received: 06/06/14 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	334022	06/13/14 12:56	MMT	TAL SAV
Instrument ID: CMSAC										

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14 *
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14 *
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14 *
GA Dept. of Agriculture	State Program	4	N/A	06-30-14 *
Georgia	State Program	4	N/A	06-30-14 *
Georgia	State Program	4	803	06-30-14 *
Guam	State Program	9	09-005r	04-16-15
Hawaii	State Program	9	N/A	06-30-14 *
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14 *
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	02-28-15
Louisiana	NELAP	6	30690	06-30-14 *
Louisiana (DW)	NELAP	6	LA140023	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14 *
Michigan	State Program	5	9925	06-30-14 *
Mississippi	State Program	4	N/A	06-30-14 *
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14 *
New Jersey	NELAP	2	GA769	06-30-14 *
New Mexico	State Program	6	N/A	06-30-14 *
New York	NELAP	2	10842	03-31-15
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14 *
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-15
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14 *
Tennessee	State Program	4	TN02961	06-30-14 *
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-15
Washington	State Program	10	C805	06-10-15
West Virginia DEP	State Program	3	94	06-30-14 *
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14 *

* Certification renewal pending - certification considered valid.

TestAmerica Savannah

Method Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102049-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858



CHAIN OF CUSTODY

TRANSPORTATION

LABORATORY INFORMATION

TestAmerica Savannah - 5102 LaRue Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165
☒ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
☐ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

COC

SHIPMENT INFORMATION

Shipment Method: Lab Courier
Shipment Tracking No: _____

CSXT PROJECT INFORMATION

CSXT Project Number: 9415575

CSXT Project Name: Hutchinson Island

CSXT Contact: Sam Ross

CONSULTANT INFORMATION

Proj. State (State of Origin): GA

Proj. City: Savannah

Company: Amec E&I

Address: 3800 Ezell Rd Ste 100

City, State, Zip: Nashville, TN 37211

Phone: (615) 389-1582

Fax: (615) 389-1582

PROJECT INFORMATION

Project: 6-4300-5240

PM: Pat Harrison

Email: Pat.harrison@amec.com

Comments: _____

Turnaround Time: ☐ Standard 6-13 Days
☐ 1 Day Rush
☒ 2 Day Rush
☐ 3 Day Rush
Specify # Days: _____
Standard 14 Days
Other: _____

Deliverables: ☒ CSXT Standard (Level II)
☐ Level III
☐ Level IV
Other Deliv: _____
EDD Required, Format: _____

Preservative Codes: 3 = Sulfuric Acid
0 = No Preservatives
1 = Hydrochloric Acid
2 = Nitric Acid
4 = Sodium Thiosulfate
5 = Sodium Hydroxide
6 = Other

Matrix Codes: SO = Soil
GW = Groundwater
WW = Waste Water
SW = Surface Water
SL = Sludge
OI = Oil
SOL = Other Solid

SAMPLE INFORMATION

Sample Identification	Containers Number & Type	Date	Time	Sampler	Filtered Y or N	Type Comp or Grab	Matrix Code
SW-04-LDW-06052014	10	6/5/14	0930	JJ	Y(N)	G	SW
SW-03-LDW-06052014	10	6/5/14	0940	SF	Y(N)	G	SW
TMW-01-06052014	9	6/5/14	0955	PG	N	G	GW
SW-01-LDW-06052014	10	6/5/14	1040	JJ	Y(N)	G	SW
SW-02-LDW-06052014	10	6/5/14	1045	SF	Y(N)	G	SW
PDMW-26T-06052014	9	6/5/14	1135	PG	N	G	GW
MMW-3R-06052014	9	6/5/14	1325	JJ	N	G	GW
PDMW-52-06052014	9	6/5/14	1250	SF	N	G	GW
PDMW-10R-06052014	9	6/5/14	1305	PG	N	G	GW
DUP-03-06052014	9	6/5/14	-	-	N	G	GW

Sample Collection	Filtered Y or N	Type Comp or Grab	Matrix Code
SW-04-LDW-06052014	Y(N)	G	SW
SW-03-LDW-06052014	Y(N)	G	SW
TMW-01-06052014	N	G	GW
SW-01-LDW-06052014	Y(N)	G	SW
SW-02-LDW-06052014	Y(N)	G	SW
PDMW-26T-06052014	N	G	GW
MMW-3R-06052014	N	G	GW
PDMW-52-06052014	N	G	GW
PDMW-10R-06052014	N	G	GW
DUP-03-06052014	N	G	GW

680-102049 Chain of Custody



Relinquished By:	Date/Time:	Received By:	Date/Time:
<u>Pat Harrison</u>	<u>6/6/14 0800</u>	<u>Sam Ross</u>	<u>6/6/14 0835</u>
Relinquished By:	Date/Time:	Received By:	Date/Time:
<u>Pat Harrison</u>	<u>6/6/14 0835</u>	<u>Sam Ross</u>	<u>6/6/14 0835</u>
Relinquished By:	Date/Time:	Received By:	Date/Time:
<u>Pat Harrison</u>	<u>6/6/14 0835</u>	<u>Sam Ross</u>	<u>6/6/14 0835</u>
Relinquished By:	Date/Time:	Received By:	Date/Time:
<u>Pat Harrison</u>	<u>6/6/14 0835</u>	<u>Sam Ross</u>	<u>6/6/14 0835</u>

Comments & Special Analytical Requirements:
680-102049
0.8/5.2/5.7

 CHAIN OF CUSTODY		LABORATORY INFORMATION TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165 <input type="checkbox"/> TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772 <input type="checkbox"/> TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049 <input type="checkbox"/> TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671 <input type="checkbox"/> TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991 <input type="checkbox"/> TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211		SHIPMENT INFORMATION Shipment Method: <u>Lab Courier</u> Shipment Tracking No:	
		COC #			
CSXT PROJECT INFORMATION CSXT Project Number: <u>9415575</u> CSXT Project Name: <u>Hutchinson Island</u> CSXT Contact: <u>Sam Ross</u>		CONSULTANT INFORMATION Company: <u>AMEC E&I</u> Address: <u>3800 Ezell Rd Ste 100</u> City, State, Zip: <u>Nashville, TN 37211</u> Phone: <u>(615) 658-1374</u> Email: <u>pat.harrison@amec.com</u>			
Project #: <u>6-4300-5240</u> PM: <u>Pat Harrison</u> Project Name: <u>6-4300-5240</u>		Project #: <u>6-4300-5240</u> PM: <u>Pat Harrison</u> Project Name: <u>6-4300-5240</u>			
Turnaround Time: <input type="checkbox"/> Standard 6-13 Days <input type="checkbox"/> 1 Day Rush <input checked="" type="checkbox"/> Standard 14 Days <input type="checkbox"/> 2 Day Rush <input type="checkbox"/> 3 Day Rush		Preservative Codes: 0 = No Preservatives 1 = Hydrochloric Acid 2 = Nitric Acid 3 = Sulfuric Acid 4 = Sodium Thiosulfate 5 = Sodium Hydroxide 6 = Other			
Deliverables: <input checked="" type="checkbox"/> CSXT Standard (Level II) <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/> EDD Required, Format:		Matrix Codes: GW = Groundwater WW = Waste Water SW = Surface Water SO = Soil SL = Sludge OL = Oil SOL = Other Solid			
SAMPLE INFORMATION		METHODS FOR ANALYSIS			
Sample Identification		Note: <u>33001220</u>			
Containers Number & Type		Filtered Y or N			
Date		Sampler			
Time		Type Comp or Grab			
Matrix Code		Matrix Code			
Date		Date			
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Login Sample Receipt Checklist

Client: AMEC Environment & Infrastructure, Inc.

Job Number: 680-102049-1

Login Number: 102049

List Source: TestAmerica Savannah

List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	False	COC mistakenly reads 10 bottles each for -8 and -10
Samples are received within Holding Time.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-102080-2

Client Project/Site: CSX Hutchinson Island VRP

For:

AMEC Environment & Infrastructure, Inc.

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Mr. Steve Foley



Authorized for release by:

6/24/2014 6:05:27 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

LINKS

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results through

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Job ID: 680-102080-2

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Environment & Infrastructure, Inc.

Project: CSX Hutchinson Island VRP

Report Number: 680-102080-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 06/06/2014; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.0 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples ERB-03-060620214 (680-102080-5) and trip blank_-03-060620214 (680-102080-6) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Sample ERB-03-060620214 (680-102080-5) was analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D.

Acenaphthylene exceeded the RPD limit for LCSD 680-333823/5-A. Refer to the QC report for details.

METALS (ICP)

Sample ERB-03-060620214 (680-102080-5) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C.

AMMONIA

Samples PDMW-49_06062014 (680-102080-3), PDMW-51_06062014 (680-102080-4) and ERB-03-060620214 (680-102080-5) were analyzed for ammonia in accordance with EPA Method 350.1.

Sample PDMW-51_06062014 (680-102080-4)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

NITRATE-NITRITE AS NITROGEN

Samples PDMW-49_06062014 (680-102080-3), PDMW-51_06062014 (680-102080-4) and ERB-03-060620214 (680-102080-5) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 06/10/2014 and 06/11/2014.

Method(s) 353.2: Nitrate has a 48-hour hold time. The following sample(s) was analyzed outside hold time due to laboratory error: PDMW-51_06062014 (680-102080-4), ERB-03-060620214 (680-102080-5), PDMW-49_06062014 (680-102080-3).

Definitions/Glossary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	RPD of the LCS and LCSD exceeds the control limits

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-102080-3	PDMW-49_06062014	Water	06/06/14 10:25	06/06/14 12:45
680-102080-4	PDMW-51_06062014	Water	06/06/14 10:46	06/06/14 12:45
680-102080-5	ERB-03-060620214	Water	06/06/14 10:45	06/06/14 12:45
680-102080-6	trip blank_-03-060620214	Water	06/06/14 00:00	06/06/14 12:45

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Client Sample ID: PDMW-49_06062014

Lab Sample ID: 680-102080-3

Date Collected: 06/06/14 10:25

Matrix: Water

Date Received: 06/06/14 12:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.42		0.050		mg/L			06/13/14 12:31	1
Nitrate as N	0.050	U H	0.050		mg/L			06/11/14 17:26	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Client Sample ID: PDMW-51_06062014

Lab Sample ID: 680-102080-4

Date Collected: 06/06/14 10:46

Matrix: Water

Date Received: 06/06/14 12:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	7.0		0.25		mg/L			06/13/14 16:46	5
Nitrate as N	0.050	U H	0.050		mg/L			06/10/14 16:24	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Client Sample ID: ERB-03-060620214

Lab Sample ID: 680-102080-5

Date Collected: 06/06/14 10:45

Matrix: Water

Date Received: 06/06/14 12:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 18:04	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 18:04	1
Toluene	1.0	U	1.0		ug/L			06/11/14 18:04	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 18:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		70 - 130					06/11/14 18:04	1
Dibromofluoromethane	93		70 - 130					06/11/14 18:04	1
Toluene-d8 (Surr)	102		70 - 130					06/11/14 18:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Acenaphthylene	9.7	U *	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Anthracene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Benzo[a]anthracene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Benzo[a]pyrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Benzo[b]fluoranthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Benzo[g,h,i]perylene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Benzo[k]fluoranthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Chrysene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Dibenz[a,h]anthracene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Fluoranthene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Fluorene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Indeno[1,2,3-cd]pyrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
1-Methylnaphthalene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
2-Methylnaphthalene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Naphthalene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Phenanthrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Pyrene	9.7	U	9.7		ug/L		06/12/14 15:41	06/17/14 11:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	74		38 - 130				06/12/14 15:41	06/17/14 11:26	1
Nitrobenzene-d5 (Surr)	83		39 - 130				06/12/14 15:41	06/17/14 11:26	1
Terphenyl-d14 (Surr)	111		10 - 143				06/12/14 15:41	06/17/14 11:26	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/11/14 11:17	06/12/14 21:43	1
Chromium	10	U	10		ug/L		06/11/14 11:17	06/12/14 21:43	1
Lead	10	U	10		ug/L		06/11/14 11:17	06/12/14 21:43	1
Nickel	40	U	40		ug/L		06/11/14 11:17	06/12/14 21:43	1
Zinc	20	U	20		ug/L		06/11/14 11:17	06/12/14 21:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.050	U	0.050		mg/L			06/13/14 12:31	1
Nitrate as N	0.14	H	0.050		mg/L			06/10/14 16:16	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Client Sample ID: trip blank_-03-060620214

Lab Sample ID: 680-102080-6

Date Collected: 06/06/14 00:00

Matrix: Water

Date Received: 06/06/14 12:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 12:39	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 12:39	1
Toluene	1.0	U	1.0		ug/L			06/11/14 12:39	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 12:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		70 - 130					06/11/14 12:39	1
Dibromofluoromethane	98		70 - 130					06/11/14 12:39	1
Toluene-d8 (Surr)	102		70 - 130					06/11/14 12:39	1

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-333526/8

Matrix: Water

Analysis Batch: 333526

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			06/11/14 11:42	1
Ethylbenzene	1.0	U	1.0		ug/L			06/11/14 11:42	1
Toluene	1.0	U	1.0		ug/L			06/11/14 11:42	1
Xylenes, Total	2.0	U	2.0		ug/L			06/11/14 11:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	96		70 - 130		06/11/14 11:42	1
Dibromofluoromethane	101		70 - 130		06/11/14 11:42	1
Toluene-d8 (Surr)	104		70 - 130		06/11/14 11:42	1

Lab Sample ID: LCS 680-333526/4

Matrix: Water

Analysis Batch: 333526

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	51.3		ug/L		103	74 - 123
Ethylbenzene	50.0	49.2		ug/L		98	78 - 125
Toluene	50.0	50.9		ug/L		102	77 - 125
Xylenes, Total	150	145		ug/L		96	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	96		70 - 130
Dibromofluoromethane	108		70 - 130
Toluene-d8 (Surr)	103		70 - 130

Lab Sample ID: LCSD 680-333526/6

Matrix: Water

Analysis Batch: 333526

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	49.1		ug/L		98	74 - 123	4	30
Ethylbenzene	50.0	46.6		ug/L		93	78 - 125	6	30
Toluene	50.0	47.0		ug/L		94	77 - 125	8	30
Xylenes, Total	150	140		ug/L		93	80 - 124	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	93		70 - 130
Dibromofluoromethane	106		70 - 130
Toluene-d8 (Surr)	97		70 - 130

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

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

Lab Sample ID: MB 680-333823/3-A

Matrix: Water

Analysis Batch: 334386

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 333823

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Acenaphthylene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Benzo[a]anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Benzo[a]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Benzo[b]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Benzo[g,h,i]perylene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Benzo[k]fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Chrysene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Dibenz(a,h)anthracene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Fluoranthene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Fluorene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
1-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
2-Methylnaphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Naphthalene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Phenanthrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1
Pyrene	10	U	10		ug/L		06/12/14 15:41	06/16/14 16:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	100		38 - 130	06/12/14 15:41	06/16/14 16:41	1
Nitrobenzene-d5 (Surr)	107		39 - 130	06/12/14 15:41	06/16/14 16:41	1
Terphenyl-d14 (Surr)	128		10 - 143	06/12/14 15:41	06/16/14 16:41	1

Lab Sample ID: LCS 680-333823/4-A

Matrix: Water

Analysis Batch: 334386

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 333823

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	66.7		ug/L		67	41 - 99
Acenaphthylene	100	55.0		ug/L		55	32 - 118
Anthracene	100	76.3		ug/L		76	50 - 103
Benzo[a]anthracene	100	78.3		ug/L		78	53 - 109
Benzo[a]pyrene	100	72.7		ug/L		73	38 - 111
Benzo[b]fluoranthene	100	86.3		ug/L		86	53 - 108
Benzo[g,h,i]perylene	100	77.5		ug/L		77	42 - 114
Benzo[k]fluoranthene	100	73.8		ug/L		74	49 - 108
Chrysene	100	78.1		ug/L		78	54 - 111
Dibenz(a,h)anthracene	100	85.3		ug/L		85	48 - 110
Fluoranthene	100	80.7		ug/L		81	48 - 111
Fluorene	100	75.8		ug/L		76	50 - 105
Indeno[1,2,3-cd]pyrene	100	82.9		ug/L		83	34 - 115
1-Methylnaphthalene	100	63.9		ug/L		64	50 - 130
2-Methylnaphthalene	100	62.8		ug/L		63	32 - 92
Naphthalene	100	63.5		ug/L		64	29 - 91
Phenanthrene	100	74.8		ug/L		75	52 - 108
Pyrene	100	74.3		ug/L		74	50 - 111

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

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

Lab Sample ID: LCS 680-333823/4-A

Matrix: Water

Analysis Batch: 334386

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 333823

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	98		38 - 130
Nitrobenzene-d5 (Surr)	102		39 - 130
Terphenyl-d14 (Surr)	116		10 - 143

Lab Sample ID: LCSD 680-333823/5-A

Matrix: Water

Analysis Batch: 334386

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 333823

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	100	63.9		ug/L		64	41 - 99	4	20
Acenaphthylene	100	38.8	*	ug/L		39	32 - 118	34	20
Anthracene	100	78.7		ug/L		79	50 - 103	3	20
Benzo[a]anthracene	100	83.9		ug/L		84	53 - 109	7	40
Benzo[a]pyrene	100	71.8		ug/L		72	38 - 111	1	40
Benzo[b]fluoranthene	100	89.6		ug/L		90	53 - 108	4	50
Benzo[g,h,i]perylene	100	78.3		ug/L		78	42 - 114	1	50
Benzo[k]fluoranthene	100	70.7		ug/L		71	49 - 108	4	40
Chrysene	100	81.3		ug/L		81	54 - 111	4	50
Dibenz(a,h)anthracene	100	85.2		ug/L		85	48 - 110	0	40
Fluoranthene	100	85.2		ug/L		85	48 - 111	6	40
Fluorene	100	78.5		ug/L		79	50 - 105	3	20
Indeno[1,2,3-cd]pyrene	100	86.7		ug/L		87	34 - 115	5	40
1-Methylnaphthalene	100	63.2		ug/L		63	50 - 130	1	50
2-Methylnaphthalene	100	61.2		ug/L		61	32 - 92	2	30
Naphthalene	100	60.5		ug/L		61	29 - 91	5	40
Phenanthrene	100	77.9		ug/L		78	52 - 108	4	40
Pyrene	100	76.9		ug/L		77	50 - 111	3	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl	90		38 - 130
Nitrobenzene-d5 (Surr)	97		39 - 130
Terphenyl-d14 (Surr)	120		10 - 143

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-333618/1-A

Matrix: Water

Analysis Batch: 334039

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 333618

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		06/11/14 11:17	06/12/14 20:54	1
Chromium	10	U	10		ug/L		06/11/14 11:17	06/12/14 20:54	1
Lead	10	U	10		ug/L		06/11/14 11:17	06/12/14 20:54	1
Nickel	40	U	40		ug/L		06/11/14 11:17	06/12/14 20:54	1
Zinc	20	U	20		ug/L		06/11/14 11:17	06/12/14 20:54	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 680-333618/2-A

Matrix: Water

Analysis Batch: 334039

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 333618

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	99.3		ug/L		99	75 - 125
Chromium	100	95.8		ug/L		96	75 - 125
Lead	50.0	48.3		ug/L		97	75 - 125
Nickel	100	94.0		ug/L		94	75 - 125
Zinc	100	96.7		ug/L		97	75 - 125

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-334252/52

Matrix: Water

Analysis Batch: 334252

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.050	U	0.050		mg/L			06/13/14 17:14	1

Lab Sample ID: LCS 680-334252/46

Matrix: Water

Analysis Batch: 334252

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	0.946		mg/L		95	90 - 110

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-333489/11

Matrix: Water

Analysis Batch: 333489

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			06/10/14 16:11	1

Lab Sample ID: LCS 680-333489/14

Matrix: Water

Analysis Batch: 333489

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.541		mg/L		108	75 - 125

Lab Sample ID: LLCS 680-333489/13

Matrix: Water

Analysis Batch: 333489

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.0500	0.0598		mg/L		120	50 - 150

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: 680-102080-5 MS

Matrix: Water

Analysis Batch: 333489

Client Sample ID: ERB-03-060620214

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.14	H	0.500	0.671		mg/L		107	75 - 125

Lab Sample ID: 680-102080-5 MSD

Matrix: Water

Analysis Batch: 333489

Client Sample ID: ERB-03-060620214

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.14	H	0.500	0.665		mg/L		106	75 - 125	1	30

Lab Sample ID: MB 680-333748/12

Matrix: Water

Analysis Batch: 333748

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			06/11/14 17:05	1

Lab Sample ID: LCS 680-333748/11

Matrix: Water

Analysis Batch: 333748

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.544		mg/L		109	75 - 125

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

GC/MS VOA

Analysis Batch: 333526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102080-5	ERB-03-060620214	Total/NA	Water	8260B	
680-102080-6	trip blank_-03-060620214	Total/NA	Water	8260B	
LCS 680-333526/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-333526/6	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-333526/8	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 333823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102080-5	ERB-03-060620214	Total/NA	Water	3520C	
LCS 680-333823/4-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-333823/5-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-333823/3-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 334386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-333823/4-A	Lab Control Sample	Total/NA	Water	8270D	333823
LCSD 680-333823/5-A	Lab Control Sample Dup	Total/NA	Water	8270D	333823
MB 680-333823/3-A	Method Blank	Total/NA	Water	8270D	333823

Analysis Batch: 334608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102080-5	ERB-03-060620214	Total/NA	Water	8270D	333823

Metals

Prep Batch: 333618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102080-5	ERB-03-060620214	Total/NA	Water	3010A	
LCS 680-333618/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-333618/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 334039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102080-5	ERB-03-060620214	Total/NA	Water	6010C	333618
LCS 680-333618/2-A	Lab Control Sample	Total/NA	Water	6010C	333618
MB 680-333618/1-A	Method Blank	Total/NA	Water	6010C	333618

General Chemistry

Analysis Batch: 333489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102080-4	PDMW-51_06062014	Total/NA	Water	353.2	
680-102080-5	ERB-03-060620214	Total/NA	Water	353.2	
680-102080-5 MS	ERB-03-060620214	Total/NA	Water	353.2	
680-102080-5 MSD	ERB-03-060620214	Total/NA	Water	353.2	
LCS 680-333489/14	Lab Control Sample	Total/NA	Water	353.2	
LLCS 680-333489/13	Lab Control Sample	Total/NA	Water	353.2	
MB 680-333489/11	Method Blank	Total/NA	Water	353.2	

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

General Chemistry (Continued)

Analysis Batch: 333748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102080-3	PDMW-49_06062014	Total/NA	Water	353.2	
LCS 680-333748/11	Lab Control Sample	Total/NA	Water	353.2	
MB 680-333748/12	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 334252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-102080-3	PDMW-49_06062014	Total/NA	Water	350.1	
680-102080-4	PDMW-51_06062014	Total/NA	Water	350.1	
680-102080-5	ERB-03-060620214	Total/NA	Water	350.1	
LCS 680-334252/46	Lab Control Sample	Total/NA	Water	350.1	
MB 680-334252/52	Method Blank	Total/NA	Water	350.1	

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Client Sample ID: PDMW-49_06062014

Date Collected: 06/06/14 10:25

Date Received: 06/06/14 12:45

Lab Sample ID: 680-102080-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	2 mL	2 mL	334252	06/13/14 12:31	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	333748	06/11/14 17:26	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-51_06062014

Date Collected: 06/06/14 10:46

Date Received: 06/06/14 12:45

Lab Sample ID: 680-102080-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		5	2 mL	2 mL	334252	06/13/14 16:46	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	333489	06/10/14 16:24	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: ERB-03-060620214

Date Collected: 06/06/14 10:45

Date Received: 06/06/14 12:45

Lab Sample ID: 680-102080-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333526	06/11/14 18:04	CAR	TAL SAV
		Instrument ID: CMSAD								
Total/NA	Prep	3520C			256.9 mL	0.5 mL	333823	06/12/14 15:41	RBS	TAL SAV
Total/NA	Analysis	8270D		1	256.9 mL	0.5 mL	334608	06/17/14 11:26	SMC	TAL SAV
		Instrument ID: CMST								
Total/NA	Prep	3010A			50 mL	50 mL	333618	06/11/14 11:17	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	334039	06/12/14 21:43	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		1	2 mL	2 mL	334252	06/13/14 12:31	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	333489	06/10/14 16:16	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: trip blank_-03-060620214

Date Collected: 06/06/14 00:00

Date Received: 06/06/14 12:45

Lab Sample ID: 680-102080-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	333526	06/11/14 12:39	CAR	TAL SAV
		Instrument ID: CMSAD								

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah

Certification Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-14 *

* Certification renewal pending - certification considered valid.

TestAmerica Savannah

Method Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-102080-2

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Login Sample Receipt Checklist

Client: AMEC Environment & Infrastructure, Inc.

Job Number: 680-102080-2

Login Number: 102080

List Source: TestAmerica Savannah

List Number: 1

Creator: Kicklighter, Marilyn D

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-104723-1

Client Project/Site: CSX Hutchinson Island VRP

For:

AMEC Environment & Infrastructure, Inc.

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Mr. Steve Foley



Authorized for release by:

9/11/2014 5:59:50 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Job ID: 680-104723-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Environment & Infrastructure, Inc.

Project: CSX Hutchinson Island VRP

Report Number: 680-104723-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

RECEIPT

The samples were received on 08/28/2014; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.0 C.

METALS (ICP)

Sample PDMW-13P_08272014 (680-104723-6) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C.

METALS (ICP)

Sample PDMW-13P_08272014 (680-104723-6) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C.

TOTAL ORGANIC CARBON (TOC)

Samples HA-01 (3.5-4.0) (680-104723-1), HA-02 (2.5-3.0) (680-104723-2), HA-02 (5.5-6.0) (680-104723-3), HA-03 (2.0-2.5) (680-104723-4) and HA-03 (4.5-5.0) (680-104723-5) were analyzed for Total Organic Carbon (TOC) in accordance with EPA SW-846 9060A.

PERCENT SOLIDS/MOISTURE

Samples HA-01 (3.5-4.0) (680-104723-1), HA-02 (2.5-3.0) (680-104723-2), HA-02 (5.5-6.0) (680-104723-3), HA-03 (2.0-2.5) (680-104723-4) and HA-03 (4.5-5.0) (680-104723-5) were analyzed for Percent Solids/Moisture in accordance with TestAmerica SOP.

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

Definitions/Glossary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-104723-1	HA-01 (3.5-4.0)	Solid	08/27/14 12:30	08/28/14 09:30
680-104723-2	HA-02 (2.5-3.0)	Solid	08/27/14 14:30	08/28/14 09:30
680-104723-3	HA-02 (5.5-6.0)	Solid	08/27/14 15:00	08/28/14 09:30
680-104723-4	HA-03 (2.0-2.5)	Solid	08/27/14 15:55	08/28/14 09:30
680-104723-5	HA-03 (4.5-5.0)	Solid	08/27/14 16:10	08/28/14 09:30
680-104723-6	PDMW-13P_08272014	Water	08/27/14 11:20	08/28/14 09:30

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Client Sample ID: HA-01 (3.5-4.0)

Lab Sample ID: 680-104723-1

Date Collected: 08/27/14 12:30

Matrix: Solid

Date Received: 08/28/14 09:30

General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	1.0	U	1.0		mg/L			09/08/14 15:07	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Client Sample ID: HA-02 (2.5-3.0)

Lab Sample ID: 680-104723-2

Date Collected: 08/27/14 14:30

Matrix: Solid

Date Received: 08/28/14 09:30

General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	1.4		1.0		mg/L			09/08/14 15:33	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Client Sample ID: HA-02 (5.5-6.0)

Date Collected: 08/27/14 15:00

Date Received: 08/28/14 09:30

Lab Sample ID: 680-104723-3

Matrix: Solid

General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	5.3		1.0		mg/L			09/08/14 15:58	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Client Sample ID: HA-03 (2.0-2.5)

Lab Sample ID: 680-104723-4

Date Collected: 08/27/14 15:55

Matrix: Solid

Date Received: 08/28/14 09:30

General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	7.0		1.0		mg/L			09/08/14 16:24	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Client Sample ID: HA-03 (4.5-5.0)

Date Collected: 08/27/14 16:10

Date Received: 08/28/14 09:30

Lab Sample ID: 680-104723-5

Matrix: Solid

General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	9.3		1.0		mg/L			09/08/14 16:51	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Client Sample ID: PDMW-13P_08272014

Lab Sample ID: 680-104723-6

Date Collected: 08/27/14 11:20

Matrix: Water

Date Received: 08/28/14 09:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	23		10		ug/L		09/10/14 12:52	09/11/14 11:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	10	U	10		ug/L		09/10/14 13:06	09/11/14 12:00	1

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-348266/1-A
Matrix: Water
Analysis Batch: 348494

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 348266

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	10	U	10		ug/L		09/10/14 12:52	09/11/14 10:11	1

Lab Sample ID: LCS 680-348266/2-A
Matrix: Water
Analysis Batch: 348494

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 348266

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	52.7		ug/L		105	75 - 125

Lab Sample ID: MB 680-348272/1-A
Matrix: Water
Analysis Batch: 348494

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 348272

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	10	U	10		ug/L		09/10/14 13:06	09/11/14 11:37	1

Lab Sample ID: LCS 680-348272/2-A
Matrix: Water
Analysis Batch: 348494

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 348272

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	53.4		ug/L		107	75 - 125

Lab Sample ID: LCSD 680-348272/3-A
Matrix: Water
Analysis Batch: 348494

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 348272

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	50.0	50.4		ug/L		101	75 - 125	6	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 180-117391/6
Matrix: Solid
Analysis Batch: 117391

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	1.0	U	1.0		mg/L			09/08/14 14:33	1

Lab Sample ID: LCS 180-117391/4
Matrix: Solid
Analysis Batch: 117391

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Quad	20.0	19.3		mg/L		96	80 - 120

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QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 180-117391/5

Matrix: Solid

Analysis Batch: 117391

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Quad	20.0	19.2		mg/L		96	80 - 120	0	20

Lab Sample ID: LB3 180-117159/6-A

Matrix: Solid

Analysis Batch: 117391

Client Sample ID: Method Blank

Prep Type: ASTM Leach

Analyte	LB3 Result	LB3 Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	1.0	U	1.0		mg/L			09/08/14 17:16	1

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Metals

Prep Batch: 348266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-104723-6	PDMW-13P_08272014	Total/NA	Water	3010A	
LCS 680-348266/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-348266/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 348272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-104723-6	PDMW-13P_08272014	Dissolved	Water	3005A	
LCS 680-348272/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 680-348272/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	
MB 680-348272/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 348494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-104723-6	PDMW-13P_08272014	Dissolved	Water	6010C	348272
680-104723-6	PDMW-13P_08272014	Total/NA	Water	6010C	348266
LCS 680-348266/2-A	Lab Control Sample	Total/NA	Water	6010C	348266
LCS 680-348272/2-A	Lab Control Sample	Total Recoverable	Water	6010C	348272
LCSD 680-348272/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	348272
MB 680-348266/1-A	Method Blank	Total/NA	Water	6010C	348266
MB 680-348272/1-A	Method Blank	Total Recoverable	Water	6010C	348272

General Chemistry

Analysis Batch: 116615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-104723-1	HA-01 (3.5-4.0)	Total/NA	Solid	2540G	
680-104723-2	HA-02 (2.5-3.0)	Total/NA	Solid	2540G	
680-104723-3	HA-02 (5.5-6.0)	Total/NA	Solid	2540G	
680-104723-4	HA-03 (2.0-2.5)	Total/NA	Solid	2540G	
680-104723-5	HA-03 (4.5-5.0)	Total/NA	Solid	2540G	

Leach Batch: 117159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-104723-1	HA-01 (3.5-4.0)	ASTM Leach	Solid	D3987-85	
680-104723-2	HA-02 (2.5-3.0)	ASTM Leach	Solid	D3987-85	
680-104723-3	HA-02 (5.5-6.0)	ASTM Leach	Solid	D3987-85	
680-104723-4	HA-03 (2.0-2.5)	ASTM Leach	Solid	D3987-85	
680-104723-5	HA-03 (4.5-5.0)	ASTM Leach	Solid	D3987-85	
LB3 180-117159/6-A	Method Blank	ASTM Leach	Solid	D3987-85	

Analysis Batch: 117391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-104723-1	HA-01 (3.5-4.0)	ASTM Leach	Solid	9060A	117159
680-104723-2	HA-02 (2.5-3.0)	ASTM Leach	Solid	9060A	117159
680-104723-3	HA-02 (5.5-6.0)	ASTM Leach	Solid	9060A	117159
680-104723-4	HA-03 (2.0-2.5)	ASTM Leach	Solid	9060A	117159
680-104723-5	HA-03 (4.5-5.0)	ASTM Leach	Solid	9060A	117159
LB3 180-117159/6-A	Method Blank	ASTM Leach	Solid	9060A	117159
LCS 180-117391/4	Lab Control Sample	Total/NA	Solid	9060A	
LCSD 180-117391/5	Lab Control Sample Dup	Total/NA	Solid	9060A	

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QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

General Chemistry (Continued)

Analysis Batch: 117391 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-117391/6	Method Blank	Total/NA	Solid	9060A	

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Client Sample ID: HA-01 (3.5-4.0)

Date Collected: 08/27/14 12:30

Date Received: 08/28/14 09:30

Lab Sample ID: 680-104723-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			116615	08/30/14 13:30	NAK	TAL PIT
		Instrument ID: NOEQUIP								
ASTM Leach	Leach	D3987-85			00100.12 g	2000 mL	117159	09/05/14 12:22	JWS	TAL PIT
ASTM Leach	Analysis	9060A		1			117391	09/08/14 15:07	CLL	TAL PIT
		Instrument ID: TOC1030								

Client Sample ID: HA-02 (2.5-3.0)

Date Collected: 08/27/14 14:30

Date Received: 08/28/14 09:30

Lab Sample ID: 680-104723-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			116615	08/30/14 13:30	NAK	TAL PIT
		Instrument ID: NOEQUIP								
ASTM Leach	Leach	D3987-85			00100.02 g	2000 mL	117159	09/05/14 12:22	JWS	TAL PIT
ASTM Leach	Analysis	9060A		1			117391	09/08/14 15:33	CLL	TAL PIT
		Instrument ID: TOC1030								

Client Sample ID: HA-02 (5.5-6.0)

Date Collected: 08/27/14 15:00

Date Received: 08/28/14 09:30

Lab Sample ID: 680-104723-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			116615	08/30/14 13:30	NAK	TAL PIT
		Instrument ID: NOEQUIP								
ASTM Leach	Leach	D3987-85			00100.33 g	2000 mL	117159	09/05/14 12:22	JWS	TAL PIT
ASTM Leach	Analysis	9060A		1			117391	09/08/14 15:58	CLL	TAL PIT
		Instrument ID: TOC1030								

Client Sample ID: HA-03 (2.0-2.5)

Date Collected: 08/27/14 15:55

Date Received: 08/28/14 09:30

Lab Sample ID: 680-104723-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			116615	08/30/14 13:30	NAK	TAL PIT
		Instrument ID: NOEQUIP								
ASTM Leach	Leach	D3987-85			00100.06 g	2000 mL	117159	09/05/14 12:22	JWS	TAL PIT
ASTM Leach	Analysis	9060A		1			117391	09/08/14 16:24	CLL	TAL PIT
		Instrument ID: TOC1030								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Client Sample ID: HA-03 (4.5-5.0)

Date Collected: 08/27/14 16:10

Date Received: 08/28/14 09:30

Lab Sample ID: 680-104723-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			116615	08/30/14 13:30	NAK	TAL PIT
Instrument ID: NOEQUIP										
ASTM Leach	Leach	D3987-85			00100.02 g	2000 mL	117159	09/05/14 12:22	JWS	TAL PIT
ASTM Leach	Analysis	9060A		1			117391	09/08/14 16:51	CLL	TAL PIT
Instrument ID: TOC1030										

Client Sample ID: PDMW-13P_08272014

Date Collected: 08/27/14 11:20

Date Received: 08/28/14 09:30

Lab Sample ID: 680-104723-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	348272	09/10/14 13:06	SP	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	348494	09/11/14 12:00	BCB	TAL SAV
Instrument ID: ICPF										
Total/NA	Prep	3010A			50 mL	50 mL	348266	09/10/14 12:52	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	348494	09/11/14 11:13	BCB	TAL SAV
Instrument ID: ICPF										

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-15

Laboratory: TestAmerica Pittsburgh

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-15
California	State Program	9	2891	03-31-15
Connecticut	State Program	1	PH-0688	09-30-14 *
Florida	NELAP	4	E871008	06-30-15
Illinois	NELAP	5	002602	06-30-15
Kansas	NELAP	7	E-10350	01-31-15
Louisiana	NELAP	6	04041	06-30-15
New Hampshire	NELAP	1	203011	04-04-15
New Jersey	NELAP	2	PA005	06-30-15
New York	NELAP	2	11182	03-31-15
North Carolina (WW/SW)	State Program	4	434	12-31-14
Pennsylvania	NELAP	3	02-00416	04-30-15
South Carolina	State Program	4	89014	04-30-15
Texas	NELAP	6	T104704528	03-31-15
US Fish & Wildlife	Federal		LE94312A-1	11-30-14
USDA	Federal		P330-10-00139	05-23-16
Utah	NELAP	8	STLP	05-31-15
Virginia	NELAP	3	460189	09-14-14 *
West Virginia DEP	State Program	3	142	01-31-15
Wisconsin	State Program	5	998027800	08-31-14 *

* Certification renewal pending - certification considered valid.

TestAmerica Savannah

Method Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-104723-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SAV
2540G	SM 2540G	SM22	TAL PIT
9060A	Organic Carbon, Total (TOC)	SW846	TAL PIT

Protocol References:

SM22 = SM22

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

<div style="display: inline-block; text-align: center; vertical-align: middle;"> CHAIN OF CUSTODY </div>		LABORATORY INFORMATION <input checked="" type="checkbox"/> TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165 <input type="checkbox"/> TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9996 F: 330-497-0772 <input type="checkbox"/> TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049 <input type="checkbox"/> TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671 <input type="checkbox"/> TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991 <input type="checkbox"/> TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211		COC # <div style="border: 1px solid black; padding: 5px; width: fit-content;">SHIPMENT INFORMATION</div> Shipment Method: FedEx Shipment Tracking No:	
CSXT PROJECT INFORMATION CSXT Project Number: 9415575 CSXT Project Name: Hutchinson Island CSXT Contact: Sam Ross		CONSULTANT INFORMATION Proj. State (State of Origin): GA Proj. City: Savannah Company: AMEC E&I Address: 3800 Ezell Rd Ste 100 City/State/Zip: Nashville, TN 37211 Email: pat.harrison@amec.com Phone: (615) 658-1374 Fax:		Project #: 6-4300-5244 PM: Pat Harrison	
Turnaround Time: <input type="checkbox"/> Standard 6-13 Days <input type="checkbox"/> Specify # Days <input checked="" type="checkbox"/> Standard 14 Days <input type="checkbox"/> Other		Preservative Codes: 0 = No Preservatives 1 = Hydrochloric Acid 2 = Nitric Acid 3 = Sulfuric Acid 4 = Sodium Thiosulfate 5 = Sodium Hydroxide 6 = Other		Methods for Analysis <div style="border: 1px solid black; padding: 5px;"> Total Pb Dissolved Pb </div>	
Deliverables: <input checked="" type="checkbox"/> CSXT Standard (Level II) <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/> EDD Required, Format:		Matrix Codes: GW = Groundwater WW = Waste Water SW = Surface Water SO = Soil SL = Sludge OL = Oil LIQ = Liquid		Comments 	
SAMPLE INFORMATION Sample Identification PDMW-13P-08272014		Containers Number & Type 2		Sample Collection Date: 8/27/14 Time: 1120 Sampler: JJ Filtered: Y Type: G Matrix: GW	
Relinquished By:		Date/Time: 8/27/14 1900		Received By:	
Relinquished By:		Date/Time:		Received By:	
Relinquished By:		Date/Time:		Received By:	
Relinquished By:		Date/Time: 8/28/14 9:30		Lab Remarks: TA 8/28/14 9:30 2.0pc 680-104723	
Lab Log Number		Custody Seal #		Lab USE: <input type="checkbox"/> Yes <input type="checkbox"/> No	

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

ORIGINAL - RETURN TO LABORATORY WITH SAMPLES

TAL-6006 (0509)

Login Sample Receipt Checklist

Client: AMEC Environment & Infrastructure, Inc.

Job Number: 680-104723-1

Login Number: 104723

List Source: TestAmerica Savannah

List Number: 1

Creator: White, Menica R

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: AMEC Environment & Infrastructure, Inc.

Job Number: 680-104723-1

Login Number: 104723

List Number: 2

Creator: Butcher, Ryan M

List Source: TestAmerica Pittsburgh

List Creation: 08/29/14 11:47 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 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.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-106890-1

Client Project/Site: CSX Hutchinson Island VRP

For:

AMEC Environment & Infrastructure, Inc.

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Mr. Steve Foley



Authorized for release by:

11/12/2014 12:52:04 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Job ID: 680-106890-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Environment & Infrastructure, Inc.
Project: CSX Hutchinson Island VRP
Report Number: 680-106890-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

RECEIPT

The samples were received on 11/4/2014 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

METALS (ICP)

Samples PDMW-46_11032014 (680-106890-1), PDMW-19P_11032014 (680-106890-2), PDMW-30P_11032014 (680-106890-3), MW-1_11032014 (680-106890-4), PDMW-45R_11032014 (680-106890-5) and MW-2_11042014 (680-106890-6) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C.

AMMONIA

Samples PDMW-46_11032014 (680-106890-1), PDMW-19P_11032014 (680-106890-2), PDMW-30P_11032014 (680-106890-3), MW-1_11032014 (680-106890-4), PDMW-45R_11032014 (680-106890-5) and MW-2_11042014 (680-106890-6) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were analyzed on 11/06/2014.

Ammonia recovery is outside criteria high for the MS and MSD of sample PDMW-19P_11032014 (680-106890-2) in batch 680-357501.

Samples PDMW-46_11032014 (680-106890-1)[2X], PDMW-19P_11032014 (680-106890-2)[5X], PDMW-30P_11032014 (680-106890-3)[2X], MW-1_11032014 (680-106890-4)[20X], PDMW-45R_11032014 (680-106890-5)[5X] and MW-2_11042014 (680-106890-6)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

NITRATE-NITRITE AS NITROGEN

Samples PDMW-46_11032014 (680-106890-1), PDMW-19P_11032014 (680-106890-2), PDMW-30P_11032014 (680-106890-3), MW-1_11032014 (680-106890-4), PDMW-45R_11032014 (680-106890-5) and MW-2_11042014 (680-106890-6) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2.

Definitions/Glossary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-106890-1	PDMW-46_11032014	Water	11/03/14 14:15	11/04/14 09:20
680-106890-2	PDMW-19P_11032014	Water	11/03/14 14:35	11/04/14 09:20
680-106890-3	PDMW-30P_11032014	Water	11/03/14 15:31	11/04/14 09:20
680-106890-4	MW-1_11032014	Water	11/03/14 15:55	11/04/14 09:20
680-106890-5	PDMW-45R_11032014	Water	11/03/14 17:03	11/04/14 09:20
680-106890-6	MW-2_11042014	Water	11/04/14 08:30	11/04/14 09:20

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Client Sample ID: PDMW-46_11032014

Lab Sample ID: 680-106890-1

Date Collected: 11/03/14 14:15

Matrix: Water

Date Received: 11/04/14 09:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 17:19	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 17:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	2.2		0.10		mg/L			11/06/14 17:39	2
Nitrate as N	0.050	U	0.050		mg/L			11/04/14 16:12	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Client Sample ID: PDMW-19P_11032014

Lab Sample ID: 680-106890-2

Date Collected: 11/03/14 14:35

Matrix: Water

Date Received: 11/04/14 09:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 17:41	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 17:41	1
Nickel	40	U	40		ug/L		11/07/14 14:19	11/10/14 17:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	4.5		0.25		mg/L			11/06/14 17:49	5
Nitrate as N	0.050	U	0.050		mg/L			11/04/14 16:13	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Client Sample ID: PDMW-30P_11032014

Lab Sample ID: 680-106890-3

Date Collected: 11/03/14 15:31

Matrix: Water

Date Received: 11/04/14 09:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 17:46	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 17:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	2.2		0.10		mg/L			11/06/14 17:39	2
Nitrate as N	0.050	U	0.050		mg/L			11/04/14 16:14	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Client Sample ID: MW-1_11032014

Lab Sample ID: 680-106890-4

Date Collected: 11/03/14 15:55

Matrix: Water

Date Received: 11/04/14 09:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 17:51	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 17:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	25		1.0		mg/L			11/06/14 18:35	20
Nitrate as N	0.050	U	0.050		mg/L			11/04/14 16:15	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Client Sample ID: PDMW-45R_11032014

Lab Sample ID: 680-106890-5

Date Collected: 11/03/14 17:03

Matrix: Water

Date Received: 11/04/14 09:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 18:04	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 18:04	1
Nickel	40	U	40		ug/L		11/07/14 14:19	11/10/14 18:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	4.7		0.25		mg/L			11/06/14 17:59	5
Nitrate as N	0.050	U	0.050		mg/L			11/04/14 16:16	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Client Sample ID: MW-2_11042014

Lab Sample ID: 680-106890-6

Date Collected: 11/04/14 08:30

Matrix: Water

Date Received: 11/04/14 09:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 18:09	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 18:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	23		1.0		mg/L			11/06/14 18:35	20
Nitrate as N	0.050	U	0.050		mg/L			11/04/14 16:20	1

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-357578/1-A
Matrix: Water
Analysis Batch: 358031

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 357578

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 17:10	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 17:10	1
Nickel	40	U	40		ug/L		11/07/14 14:19	11/10/14 17:10	1

Lab Sample ID: LCS 680-357578/2-A
Matrix: Water
Analysis Batch: 358031

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 357578

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	101		ug/L		101	80 - 120
Lead	500	486		ug/L		97	80 - 120
Nickel	100	98.4		ug/L		98	80 - 120

Lab Sample ID: 680-106890-1 MS
Matrix: Water
Analysis Batch: 358031

Client Sample ID: PDMW-46_11032014
Prep Type: Total/NA
Prep Batch: 357578

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	20	U	100	109		ug/L		101	75 - 125
Lead	10	U	500	492		ug/L		98	75 - 125
Nickel	40	U	100	108		ug/L		98	75 - 125

Lab Sample ID: 680-106890-1 MSD
Matrix: Water
Analysis Batch: 358031

Client Sample ID: PDMW-46_11032014
Prep Type: Total/NA
Prep Batch: 357578

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	20	U	100	107		ug/L		99	75 - 125	2	20
Lead	10	U	500	480		ug/L		96	75 - 125	3	20
Nickel	40	U	100	105		ug/L		96	75 - 125	2	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-357501/15
Matrix: Water
Analysis Batch: 357501

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.050	U	0.050		mg/L			11/06/14 16:59	1

Lab Sample ID: LCS 680-357501/16
Matrix: Water
Analysis Batch: 357501

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.00		mg/L		100	90 - 110

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 680-106890-2 MS

Matrix: Water

Analysis Batch: 357501

Client Sample ID: PDMW-19P_11032014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	4.5		1.00	5.68	4	mg/L		115	90 - 110

Lab Sample ID: 680-106890-2 MSD

Matrix: Water

Analysis Batch: 357501

Client Sample ID: PDMW-19P_11032014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	4.5		1.00	5.70	4	mg/L		116	90 - 110	0	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-356938/13

Matrix: Water

Analysis Batch: 356938

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			11/04/14 15:51	1

Lab Sample ID: LCS 680-356938/16

Matrix: Water

Analysis Batch: 356938

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.513		mg/L		103	75 - 125

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Metals

Prep Batch: 357578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106890-1	PDMW-46_11032014	Total/NA	Water	3010A	
680-106890-1 MS	PDMW-46_11032014	Total/NA	Water	3010A	
680-106890-1 MSD	PDMW-46_11032014	Total/NA	Water	3010A	
680-106890-2	PDMW-19P_11032014	Total/NA	Water	3010A	
680-106890-3	PDMW-30P_11032014	Total/NA	Water	3010A	
680-106890-4	MW-1_11032014	Total/NA	Water	3010A	
680-106890-5	PDMW-45R_11032014	Total/NA	Water	3010A	
680-106890-6	MW-2_11042014	Total/NA	Water	3010A	
LCS 680-357578/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-357578/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 358031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106890-1	PDMW-46_11032014	Total/NA	Water	6010C	357578
680-106890-1 MS	PDMW-46_11032014	Total/NA	Water	6010C	357578
680-106890-1 MSD	PDMW-46_11032014	Total/NA	Water	6010C	357578
680-106890-2	PDMW-19P_11032014	Total/NA	Water	6010C	357578
680-106890-3	PDMW-30P_11032014	Total/NA	Water	6010C	357578
680-106890-4	MW-1_11032014	Total/NA	Water	6010C	357578
680-106890-5	PDMW-45R_11032014	Total/NA	Water	6010C	357578
680-106890-6	MW-2_11042014	Total/NA	Water	6010C	357578
LCS 680-357578/2-A	Lab Control Sample	Total/NA	Water	6010C	357578
MB 680-357578/1-A	Method Blank	Total/NA	Water	6010C	357578

General Chemistry

Analysis Batch: 356938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106890-1	PDMW-46_11032014	Total/NA	Water	353.2	
680-106890-2	PDMW-19P_11032014	Total/NA	Water	353.2	
680-106890-3	PDMW-30P_11032014	Total/NA	Water	353.2	
680-106890-4	MW-1_11032014	Total/NA	Water	353.2	
680-106890-5	PDMW-45R_11032014	Total/NA	Water	353.2	
680-106890-6	MW-2_11042014	Total/NA	Water	353.2	
LCS 680-356938/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-356938/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 357501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106890-1	PDMW-46_11032014	Total/NA	Water	350.1	
680-106890-2	PDMW-19P_11032014	Total/NA	Water	350.1	
680-106890-2 MS	PDMW-19P_11032014	Total/NA	Water	350.1	
680-106890-2 MSD	PDMW-19P_11032014	Total/NA	Water	350.1	
680-106890-3	PDMW-30P_11032014	Total/NA	Water	350.1	
680-106890-4	MW-1_11032014	Total/NA	Water	350.1	
680-106890-5	PDMW-45R_11032014	Total/NA	Water	350.1	
680-106890-6	MW-2_11042014	Total/NA	Water	350.1	
LCS 680-357501/16	Lab Control Sample	Total/NA	Water	350.1	
MB 680-357501/15	Method Blank	Total/NA	Water	350.1	

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Client Sample ID: PDMW-46_11032014

Date Collected: 11/03/14 14:15

Date Received: 11/04/14 09:20

Lab Sample ID: 680-106890-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 17:19	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		2	2 mL	2 mL	357501	11/06/14 17:39	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	356938	11/04/14 16:12	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-19P_11032014

Date Collected: 11/03/14 14:35

Date Received: 11/04/14 09:20

Lab Sample ID: 680-106890-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 17:41	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		5	2 mL	2 mL	357501	11/06/14 17:49	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	356938	11/04/14 16:13	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-30P_11032014

Date Collected: 11/03/14 15:31

Date Received: 11/04/14 09:20

Lab Sample ID: 680-106890-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 17:46	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		2	2 mL	2 mL	357501	11/06/14 17:39	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	356938	11/04/14 16:14	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: MW-1_11032014

Date Collected: 11/03/14 15:55

Date Received: 11/04/14 09:20

Lab Sample ID: 680-106890-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 17:51	BCB	TAL SAV
		Instrument ID: ICPF								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Client Sample ID: MW-1_11032014

Lab Sample ID: 680-106890-4

Date Collected: 11/03/14 15:55

Matrix: Water

Date Received: 11/04/14 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		20	2 mL	2 mL	357501	11/06/14 18:35	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	356938	11/04/14 16:15	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-45R_11032014

Lab Sample ID: 680-106890-5

Date Collected: 11/03/14 17:03

Matrix: Water

Date Received: 11/04/14 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 18:04	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		5	2 mL	2 mL	357501	11/06/14 17:59	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	356938	11/04/14 16:16	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: MW-2_11042014

Lab Sample ID: 680-106890-6

Date Collected: 11/04/14 08:30

Matrix: Water

Date Received: 11/04/14 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 18:09	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		20	2 mL	2 mL	357501	11/06/14 18:35	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	356938	11/04/14 16:20	GRX	TAL SAV
		Instrument ID: LACHAT2								

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-15

1

2

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12

Method Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106890-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Login Sample Receipt Checklist

Client: AMEC Environment & Infrastructure, Inc.

Job Number: 680-106890-1

Login Number: 106890

List Source: TestAmerica Savannah

List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-106920-1

Client Project/Site: CSX Hutchinson Island VRP

For:

AMEC Environment & Infrastructure, Inc.

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Mr. Steve Foley



Authorized for release by:

11/13/2014 6:11:12 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Job ID: 680-106920-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Environment & Infrastructure, Inc.

Project: CSX Hutchinson Island VRP

Report Number: 680-106920-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

RECEIPT

The samples were received on 11/5/2014 8:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.2° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples PDMW-48_11042014 (680-106920-7) and TRIP_BLANK_11042014 (680-106920-10) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

Method(s) 8260B: The matrix spike and matrix spike duplicate were double spiked with internal standards. Internal standards recovered double as would be expected, but spiked analytes are within control limits when adjustment is made for the double spike.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Sample PDMW-48_11042014 (680-106920-7) was analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D.

METALS (ICP)

Samples PDMW-33R2_11042014 (680-106920-1), PDMW-47_11042014 (680-106920-2), TMW-4R_11042014 (680-106920-5), PDMW-7P_11042014 (680-106920-6), PDMW-48_11042014 (680-106920-7), EW-1_11042014 (680-106920-8) and MW-202_11042014 (680-106920-9) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C.

AMMONIA

Samples PDMW-33R2_11042014 (680-106920-1), PDMW-47_11042014 (680-106920-2), PDMW-49_11042014 (680-106920-3), PDMW-53_11042014 (680-106920-4), TMW-4R_11042014 (680-106920-5), PDMW-7P_11042014 (680-106920-6), PDMW-48_11042014 (680-106920-7), EW-1_11042014 (680-106920-8) and MW-202_11042014 (680-106920-9) were analyzed for ammonia in accordance with EPA Method 350.1.

Samples PDMW-33R2_11042014 (680-106920-1)[10X], PDMW-47_11042014 (680-106920-2)[100X], PDMW-53_11042014 (680-106920-4)[5X], TMW-4R_11042014 (680-106920-5)[5X], PDMW-7P_11042014 (680-106920-6)[10X], PDMW-48_11042014 (680-106920-7)[20X] and EW-1_11042014 (680-106920-8)[500X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

NITRATE-NITRITE AS NITROGEN

Samples PDMW-33R2_11042014 (680-106920-1), PDMW-47_11042014 (680-106920-2), PDMW-49_11042014 (680-106920-3), PDMW-53_11042014 (680-106920-4), TMW-4R_11042014 (680-106920-5), PDMW-7P_11042014 (680-106920-6), PDMW-48_11042014 (680-106920-7), EW-1_11042014 (680-106920-8) and MW-202_11042014 (680-106920-9) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2.

Definitions/Glossary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-106920-1	PDMW-33R2_11042014	Water	11/04/14 10:27	11/05/14 08:30
680-106920-2	PDMW-47_11042014	Water	11/04/14 11:49	11/05/14 08:30
680-106920-3	PDMW-49_11042014	Water	11/04/14 14:57	11/05/14 08:30
680-106920-4	PDMW-53_11042014	Water	11/04/14 16:30	11/05/14 08:30
680-106920-5	TMW-4R_11042014	Water	11/04/14 09:50	11/05/14 08:30
680-106920-6	PDMW-7P_11042014	Water	11/04/14 11:25	11/05/14 08:30
680-106920-7	PDMW-48_11042014	Water	11/04/14 14:25	11/05/14 08:30
680-106920-8	EW-1_11042014	Water	11/04/14 15:55	11/05/14 08:30
680-106920-9	MW-202_11042014	Water	11/04/14 17:00	11/05/14 08:30
680-106920-10	TRIP_BLANK_11042014	Water	11/04/14 00:00	11/05/14 08:30

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: PDMW-33R2_11042014

Lab Sample ID: 680-106920-1

Date Collected: 11/04/14 10:27

Matrix: Water

Date Received: 11/05/14 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 18:22	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 18:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	20		0.50		mg/L			11/07/14 09:38	10
Nitrate as N	0.050	U	0.050		mg/L			11/05/14 16:32	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: PDMW-47_11042014

Lab Sample ID: 680-106920-2

Date Collected: 11/04/14 11:49

Matrix: Water

Date Received: 11/05/14 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 18:26	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 18:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	110		5.0		mg/L			11/07/14 09:18	100
Nitrate as N	0.050	U	0.050		mg/L			11/05/14 16:36	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: PDMW-49_11042014

Lab Sample ID: 680-106920-3

Date Collected: 11/04/14 14:57

Matrix: Water

Date Received: 11/05/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.7		0.050		mg/L			11/07/14 09:11	1
Nitrate as N	0.050	U	0.050		mg/L			11/05/14 16:38	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: PDMW-53_11042014

Lab Sample ID: 680-106920-4

Date Collected: 11/04/14 16:30

Matrix: Water

Date Received: 11/05/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	5.5		0.25		mg/L			11/07/14 09:48	5
Nitrate as N	0.050	U	0.050		mg/L			11/05/14 16:42	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: TMW-4R_11042014

Lab Sample ID: 680-106920-5

Date Collected: 11/04/14 09:50

Matrix: Water

Date Received: 11/05/14 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 18:31	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 18:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	7.8		0.25		mg/L			11/07/14 09:48	5
Nitrate as N	0.050	U	0.050		mg/L			11/05/14 16:43	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: PDMW-7P_11042014

Lab Sample ID: 680-106920-6

Date Collected: 11/04/14 11:25

Matrix: Water

Date Received: 11/05/14 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 18:35	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 18:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	16		0.50		mg/L			11/07/14 09:48	10
Nitrate as N	0.050	U	0.050		mg/L			11/05/14 16:44	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: PDMW-48_11042014

Lab Sample ID: 680-106920-7

Date Collected: 11/04/14 14:25

Matrix: Water

Date Received: 11/05/14 08:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/10/14 00:22	1
Ethylbenzene	1.0	U	1.0		ug/L			11/10/14 00:22	1
Toluene	1.0	U	1.0		ug/L			11/10/14 00:22	1
Xylenes, Total	2.0	U	2.0		ug/L			11/10/14 00:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		70 - 130		11/10/14 00:22	1
1,2-Dichloroethane-d4 (Surr)	91		70 - 130		11/10/14 00:22	1
Dibromofluoromethane (Surr)	100		70 - 130		11/10/14 00:22	1
4-Bromofluorobenzene (Surr)	111		70 - 130		11/10/14 00:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Acenaphthylene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Anthracene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Benzo[a]anthracene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Benzo[a]pyrene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Benzo[b]fluoranthene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Benzo[g,h,i]perylene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Benzo[k]fluoranthene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Chrysene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Dibenz[a,h]anthracene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Fluoranthene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Fluorene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Indeno[1,2,3-cd]pyrene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
1-Methylnaphthalene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
2-Methylnaphthalene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Naphthalene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Phenanthrene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1
Pyrene	9.8	U	9.8		ug/L		11/10/14 15:53	11/11/14 18:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	59		32 - 114	11/10/14 15:53	11/11/14 18:00	1
Nitrobenzene-d5 (Surr)	68		30 - 117	11/10/14 15:53	11/11/14 18:00	1
Terphenyl-d14 (Surr)	78		10 - 132	11/10/14 15:53	11/11/14 18:00	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 18:40	1
Chromium	10	U	10		ug/L		11/07/14 14:19	11/10/14 18:40	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 18:40	1
Nickel	40	U	40		ug/L		11/07/14 14:19	11/10/14 18:40	1
Zinc	20	U	20		ug/L		11/07/14 14:19	11/10/14 18:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	22		1.0		mg/L			11/07/14 10:31	20
Nitrate as N	0.050	U	0.050		mg/L			11/05/14 16:45	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: EW-1_11042014

Lab Sample ID: 680-106920-8

Date Collected: 11/04/14 15:55

Matrix: Water

Date Received: 11/05/14 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20		20		ug/L		11/07/14 14:19	11/10/14 18:44	1
Chromium	13		10		ug/L		11/07/14 14:19	11/10/14 18:44	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 18:44	1
Nickel	100		40		ug/L		11/07/14 14:19	11/10/14 18:44	1
Zinc	470		20		ug/L		11/07/14 14:19	11/10/14 18:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	540		25		mg/L			11/07/14 09:48	500
Nitrate as N	0.29		0.050		mg/L			11/05/14 16:46	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: MW-202_11042014

Lab Sample ID: 680-106920-9

Date Collected: 11/04/14 17:00

Matrix: Water

Date Received: 11/05/14 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 18:58	1
Nickel	40	U	40		ug/L		11/07/14 14:19	11/10/14 18:58	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 18:58	1
Zinc	20	U	20		ug/L		11/07/14 14:19	11/10/14 18:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.0		0.050		mg/L			11/07/14 09:11	1
Nitrate as N	0.050	U	0.050		mg/L			11/05/14 16:48	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: TRIP_BLANK_11042014

Lab Sample ID: 680-106920-10

Date Collected: 11/04/14 00:00

Matrix: Water

Date Received: 11/05/14 08:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/10/14 23:40	1
Ethylbenzene	1.0	U	1.0		ug/L			11/10/14 23:40	1
Toluene	1.0	U	1.0		ug/L			11/10/14 23:40	1
Xylenes, Total	2.0	U	2.0		ug/L			11/10/14 23:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		70 - 130		11/10/14 23:40	1
1,2-Dichloroethane-d4 (Surr)	88		70 - 130		11/10/14 23:40	1
Dibromofluoromethane (Surr)	101		70 - 130		11/10/14 23:40	1
4-Bromofluorobenzene (Surr)	103		70 - 130		11/10/14 23:40	1

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-357964/8

Matrix: Water

Analysis Batch: 357964

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/10/14 23:19	1
Ethylbenzene	1.0	U	1.0		ug/L			11/10/14 23:19	1
Toluene	1.0	U	1.0		ug/L			11/10/14 23:19	1
Xylenes, Total	2.0	U	2.0		ug/L			11/10/14 23:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		11/10/14 23:19	1
1,2-Dichloroethane-d4 (Surr)	87		70 - 130		11/10/14 23:19	1
Dibromofluoromethane (Surr)	106		70 - 130		11/10/14 23:19	1
4-Bromofluorobenzene (Surr)	105		70 - 130		11/10/14 23:19	1

Lab Sample ID: LCS 680-357964/4

Matrix: Water

Analysis Batch: 357964

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	45.5		ug/L		91	74 - 123
Ethylbenzene	50.0	49.1		ug/L		98	78 - 125
Toluene	50.0	44.4		ug/L		89	77 - 125
Xylenes, Total	100	102		ug/L		102	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		70 - 130
1,2-Dichloroethane-d4 (Surr)	98		70 - 130
Dibromofluoromethane (Surr)	92		70 - 130
4-Bromofluorobenzene (Surr)	109		70 - 130

Lab Sample ID: LCSD 680-357964/5

Matrix: Water

Analysis Batch: 357964

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	44.3		ug/L		89	74 - 123	3	30
Ethylbenzene	50.0	49.0		ug/L		98	78 - 125	0	30
Toluene	50.0	43.9		ug/L		88	77 - 125	1	30
Xylenes, Total	100	102		ug/L		102	80 - 124	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	99		70 - 130
1,2-Dichloroethane-d4 (Surr)	97		70 - 130
Dibromofluoromethane (Surr)	95		70 - 130
4-Bromofluorobenzene (Surr)	107		70 - 130

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

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

Lab Sample ID: MB 680-357797/10-A

Matrix: Water

Analysis Batch: 358280

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 357797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Acenaphthylene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Anthracene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Benzo[a]anthracene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Benzo[a]pyrene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Benzo[b]fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Benzo[g,h,i]perylene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Benzo[k]fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Chrysene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Dibenz(a,h)anthracene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Fluorene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
1-Methylnaphthalene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
2-Methylnaphthalene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Naphthalene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Phenanthrene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Pyrene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	61		32 - 114	11/10/14 15:53	11/12/14 13:03	1
Nitrobenzene-d5 (Surr)	70		30 - 117	11/10/14 15:53	11/12/14 13:03	1
Terphenyl-d14 (Surr)	106		10 - 132	11/10/14 15:53	11/12/14 13:03	1

Lab Sample ID: LCS 680-357797/11-A

Matrix: Water

Analysis Batch: 357998

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 357797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	59.3		ug/L		59	32 - 107
Acenaphthylene	100	60.3		ug/L		60	10 - 119
Anthracene	100	66.1		ug/L		66	38 - 112
Benzo[a]anthracene	100	66.5		ug/L		66	36 - 115
Benzo[a]pyrene	100	65.3		ug/L		65	13 - 120
Benzo[b]fluoranthene	100	65.4		ug/L		65	32 - 117
Benzo[g,h,i]perylene	100	62.4		ug/L		62	21 - 118
Benzo[k]fluoranthene	100	65.7		ug/L		66	28 - 125
Chrysene	100	65.2		ug/L		65	36 - 113
Dibenz(a,h)anthracene	100	63.5		ug/L		64	32 - 115
Fluoranthene	100	69.8		ug/L		70	41 - 113
Fluorene	100	62.3		ug/L		62	39 - 115
Indeno[1,2,3-cd]pyrene	100	56.4		ug/L		56	16 - 119
1-Methylnaphthalene	100	53.9		ug/L		54	26 - 94
2-Methylnaphthalene	100	54.4		ug/L		54	24 - 92
Naphthalene	100	50.5		ug/L		50	24 - 85
Phenanthrene	100	65.1		ug/L		65	40 - 114
Pyrene	100	66.6		ug/L		67	29 - 118

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

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

Lab Sample ID: LCS 680-357797/11-A

Matrix: Water

Analysis Batch: 357998

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 357797

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	58		32 - 114
Nitrobenzene-d5 (Surr)	60		30 - 117
Terphenyl-d14 (Surr)	91		10 - 132

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-357578/1-A

Matrix: Water

Analysis Batch: 358031

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 357578

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/07/14 14:19	11/10/14 17:10	1
Chromium	10	U	10		ug/L		11/07/14 14:19	11/10/14 17:10	1
Lead	10	U	10		ug/L		11/07/14 14:19	11/10/14 17:10	1
Nickel	40	U	40		ug/L		11/07/14 14:19	11/10/14 17:10	1
Zinc	20	U	20		ug/L		11/07/14 14:19	11/10/14 17:10	1

Lab Sample ID: LCS 680-357578/2-A

Matrix: Water

Analysis Batch: 358031

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 357578

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	101		ug/L		101	80 - 120
Chromium	100	100		ug/L		100	80 - 120
Lead	500	486		ug/L		97	80 - 120
Nickel	100	98.4		ug/L		98	80 - 120
Zinc	100	97.6		ug/L		98	80 - 120

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-357503/5

Matrix: Water

Analysis Batch: 357503

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.050	U	0.050		mg/L			11/06/14 16:31	1

Lab Sample ID: LCS 680-357503/4

Matrix: Water

Analysis Batch: 357503

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	0.997		mg/L		100	90 - 110

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-357132/13

Matrix: Water

Analysis Batch: 357132

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			11/05/14 16:27	1

Lab Sample ID: LCS 680-357132/16

Matrix: Water

Analysis Batch: 357132

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.516		mg/L		103	75 - 125

Lab Sample ID: 680-106920-1 MS

Matrix: Water

Analysis Batch: 357132

Client Sample ID: PDMW-33R2_11042014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.050	U	0.500	0.460		mg/L		92	75 - 125

Lab Sample ID: 680-106920-1 MSD

Matrix: Water

Analysis Batch: 357132

Client Sample ID: PDMW-33R2_11042014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.050	U	0.500	0.465		mg/L		93	75 - 125	1	30

Lab Sample ID: 680-106920-2 DU

Matrix: Water

Analysis Batch: 357132

Client Sample ID: PDMW-47_11042014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	0.050	U	0.050	U	mg/L		NC	30

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

GC/MS VOA

Analysis Batch: 357964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106920-7	PDMW-48_11042014	Total/NA	Water	8260B	
680-106920-10	TRIP_BLANK_11042014	Total/NA	Water	8260B	
LCS 680-357964/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-357964/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-357964/8	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 357797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106920-7	PDMW-48_11042014	Total/NA	Water	3520C	
LCS 680-357797/11-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-357797/10-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 357998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106920-7	PDMW-48_11042014	Total/NA	Water	8270D	357797
LCS 680-357797/11-A	Lab Control Sample	Total/NA	Water	8270D	357797

Analysis Batch: 358280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-357797/10-A	Method Blank	Total/NA	Water	8270D	357797

Metals

Prep Batch: 357578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106920-1	PDMW-33R2_11042014	Total/NA	Water	3010A	
680-106920-2	PDMW-47_11042014	Total/NA	Water	3010A	
680-106920-5	TMW-4R_11042014	Total/NA	Water	3010A	
680-106920-6	PDMW-7P_11042014	Total/NA	Water	3010A	
680-106920-7	PDMW-48_11042014	Total/NA	Water	3010A	
680-106920-8	EW-1_11042014	Total/NA	Water	3010A	
680-106920-9	MW-202_11042014	Total/NA	Water	3010A	
LCS 680-357578/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-357578/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 358031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106920-1	PDMW-33R2_11042014	Total/NA	Water	6010C	357578
680-106920-2	PDMW-47_11042014	Total/NA	Water	6010C	357578
680-106920-5	TMW-4R_11042014	Total/NA	Water	6010C	357578
680-106920-6	PDMW-7P_11042014	Total/NA	Water	6010C	357578
680-106920-7	PDMW-48_11042014	Total/NA	Water	6010C	357578
680-106920-8	EW-1_11042014	Total/NA	Water	6010C	357578
680-106920-9	MW-202_11042014	Total/NA	Water	6010C	357578
LCS 680-357578/2-A	Lab Control Sample	Total/NA	Water	6010C	357578
MB 680-357578/1-A	Method Blank	Total/NA	Water	6010C	357578

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

General Chemistry

Analysis Batch: 357132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106920-1	PDMW-33R2_11042014	Total/NA	Water	353.2	
680-106920-1 MS	PDMW-33R2_11042014	Total/NA	Water	353.2	
680-106920-1 MSD	PDMW-33R2_11042014	Total/NA	Water	353.2	
680-106920-2	PDMW-47_11042014	Total/NA	Water	353.2	
680-106920-2 DU	PDMW-47_11042014	Total/NA	Water	353.2	
680-106920-3	PDMW-49_11042014	Total/NA	Water	353.2	
680-106920-4	PDMW-53_11042014	Total/NA	Water	353.2	
680-106920-5	TMW-4R_11042014	Total/NA	Water	353.2	
680-106920-6	PDMW-7P_11042014	Total/NA	Water	353.2	
680-106920-7	PDMW-48_11042014	Total/NA	Water	353.2	
680-106920-8	EW-1_11042014	Total/NA	Water	353.2	
680-106920-9	MW-202_11042014	Total/NA	Water	353.2	
LCS 680-357132/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-357132/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 357503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106920-1	PDMW-33R2_11042014	Total/NA	Water	350.1	
680-106920-2	PDMW-47_11042014	Total/NA	Water	350.1	
680-106920-3	PDMW-49_11042014	Total/NA	Water	350.1	
680-106920-4	PDMW-53_11042014	Total/NA	Water	350.1	
680-106920-5	TMW-4R_11042014	Total/NA	Water	350.1	
680-106920-6	PDMW-7P_11042014	Total/NA	Water	350.1	
680-106920-7	PDMW-48_11042014	Total/NA	Water	350.1	
680-106920-8	EW-1_11042014	Total/NA	Water	350.1	
680-106920-9	MW-202_11042014	Total/NA	Water	350.1	
LCS 680-357503/4	Lab Control Sample	Total/NA	Water	350.1	
MB 680-357503/5	Method Blank	Total/NA	Water	350.1	

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: PDMW-33R2_11042014

Date Collected: 11/04/14 10:27

Date Received: 11/05/14 08:30

Lab Sample ID: 680-106920-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 18:22	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		10	2 mL	2 mL	357503	11/07/14 09:38	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357132	11/05/14 16:32	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-47_11042014

Date Collected: 11/04/14 11:49

Date Received: 11/05/14 08:30

Lab Sample ID: 680-106920-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 18:26	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		100	2 mL	2 mL	357503	11/07/14 09:18	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357132	11/05/14 16:36	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-49_11042014

Date Collected: 11/04/14 14:57

Date Received: 11/05/14 08:30

Lab Sample ID: 680-106920-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	2 mL	2 mL	357503	11/07/14 09:11	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357132	11/05/14 16:38	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-53_11042014

Date Collected: 11/04/14 16:30

Date Received: 11/05/14 08:30

Lab Sample ID: 680-106920-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		5	2 mL	2 mL	357503	11/07/14 09:48	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357132	11/05/14 16:42	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: TMW-4R_11042014

Lab Sample ID: 680-106920-5

Date Collected: 11/04/14 09:50

Matrix: Water

Date Received: 11/05/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 18:31	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		5	2 mL	2 mL	357503	11/07/14 09:48	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357132	11/05/14 16:43	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-7P_11042014

Lab Sample ID: 680-106920-6

Date Collected: 11/04/14 11:25

Matrix: Water

Date Received: 11/05/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 18:35	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		10	2 mL	2 mL	357503	11/07/14 09:48	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357132	11/05/14 16:44	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-48_11042014

Lab Sample ID: 680-106920-7

Date Collected: 11/04/14 14:25

Matrix: Water

Date Received: 11/05/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	357964	11/10/14 00:22	CAR	TAL SAV
		Instrument ID: CMSB								
Total/NA	Prep	3520C			255.3 mL	0.5 mL	357797	11/10/14 15:53	RBS	TAL SAV
Total/NA	Analysis	8270D		1	255.3 mL	0.5 mL	357998	11/11/14 18:00	LEG	TAL SAV
		Instrument ID: CMSE								
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 18:40	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		20	2 mL	2 mL	357503	11/07/14 10:31	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357132	11/05/14 16:45	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Client Sample ID: EW-1_11042014

Date Collected: 11/04/14 15:55

Date Received: 11/05/14 08:30

Lab Sample ID: 680-106920-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 18:44	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		500	2 mL	2 mL	357503	11/07/14 09:48	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357132	11/05/14 16:46	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: MW-202_11042014

Date Collected: 11/04/14 17:00

Date Received: 11/05/14 08:30

Lab Sample ID: 680-106920-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	357578	11/07/14 14:19	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358031	11/10/14 18:58	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		1	2 mL	2 mL	357503	11/07/14 09:11	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357132	11/05/14 16:48	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: TRIP_BLANK_11042014

Date Collected: 11/04/14 00:00

Date Received: 11/05/14 08:30

Lab Sample ID: 680-106920-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	357964	11/10/14 23:40	CAR	TAL SAV
		Instrument ID: CMSB								

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-15

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Method Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106920-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

 CHAIN OF CUSTODY		LABORATORY INFORMATION <input checked="" type="checkbox"/> TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165 <input type="checkbox"/> TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772 <input type="checkbox"/> TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049 <input type="checkbox"/> TestAmerica Pensacola - 3355 McLenore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671 <input type="checkbox"/> TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991 <input type="checkbox"/> TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211									
		SHIPMENT INFORMATION Shipment Method: <u>Lab Courier</u> Shipment Tracking No.: _____									
		COC # _____									
		Project #: <u>6-4300-5244</u>									
CSXT PROJECT INFORMATION CSXT Project Number: <u>9413575</u> CSXT Project Name: <u>Hutchinson Island</u> CSXT Contact: <u>Sam Ross</u>		CONSULTANT INFORMATION Proj. State (State of Origin): <u>GA</u> Proj. City: <u>Savannah</u> Company: <u>AMEC E&S</u> Address: <u>3800 Brail Rd Ste 100</u> City, State, Zip: <u>Nashville, TN 37211</u>		PM: <u>Pat Harrison</u> Email: <u>pat.harrison@amec.com</u> Phone: <u>(678) 658-1374</u> Fax: _____		LAB USE _____					
Turnaround Time: <input type="checkbox"/> Standard 6-13 Days <input type="checkbox"/> 1 Day Rush <input checked="" type="checkbox"/> 2 Day Rush <input type="checkbox"/> 3 Day Rush <input type="checkbox"/> Other: _____		Preservative Codes: 0 = No Preservatives 1 = Hydrochloric Acid 2 = Nitric Acid 3 = Sulfuric Acid 4 = Sodium Thiosulfate 5 = Sodium Hydroxide 6 = Other: _____		Matrix Codes: GW = Groundwater WW = Waste Water SW = Surface Water SO = Soil SL = Sludge OL = Oil SOL = Other Solid		Deliverables: <input checked="" type="checkbox"/> CSXT Standard (Level II) <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/> EDD Required, Format: _____					
SAMPLE INFORMATION											
Containers Number & Type		Sample Collection Date Time Sampler		Filtered Y or N		Type Comp or Grab		Matrix Code			
PDMW-33R 2-11042014 4 poly		11/4/14 1027 JTS		N		G		GW			
PDMW-47-11042014 4 poly		11/4/14 1149 JTS		N		G		GW			
PDMW-49-11042014 3 poly		11/4/14 1457 JTS		N		G		GW			
PDMW-53-11042014 3 poly		11/4/14 1630 JTS		N		G		GW			
TMW-4R-11042014 4 poly		11/4/14 0950 PG		N		G		GW			
PDMW-7P-11042014 4 poly		11/4/14 1125 PG		N		G		GW			
PDMW-48-11042014 9		11/4/14 1425 PG		N		G		GW			
EW-1-11042014 4 poly		11/4/14 1555 PG		N		G		GW			
MW-202-11042014 4 poly		11/4/14 1700 PG		N		G		GW			
TRIP-BLANK-11042014 2 vials		11/4/14 -		N		-		GW			
Relinquished By: <u>Pat Harrison</u> Date/Time: <u>11/5/14 0735</u>		Received By: <u>M. Williams</u> Date/Time: <u>11/5/14 0830</u>		Relinquished By: <u>Pat Harrison</u> Date/Time: _____		Received By: <u>M. Williams</u> Date/Time: _____		Relinquished By: _____ Date/Time: _____			
Received By Laboratory: <u>AMEC</u> Date/Time: <u>11/05/14 0830</u>		Lab Remarks: _____		LAB USE: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal # _____		LAB Log Number # _____	
Comments & Special Analytical Requirements: <u>4.2 °C</u> <u>630-106920</u>											



680-106920 Chain of Custody

Login Sample Receipt Checklist

Client: AMEC Environment & Infrastructure, Inc.

Job Number: 680-106920-1

Login Number: 106920

List Source: TestAmerica Savannah

List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-106992-1

Client Project/Site: CSX Hutchinson Island VRP

For:

AMEC Environment & Infrastructure, Inc.

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Mr. Steve Foley



Authorized for release by:

11/18/2014 3:49:21 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Job ID: 680-106992-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Environment & Infrastructure, Inc.
Project: CSX Hutchinson Island VRP
Report Number: 680-106992-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

RECEIPT

The samples were received on 11/6/2014 9:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.8° C and 2.8° C.

PDMW-24T_11052014 (680-106992-5): A container for dissolved lead and total lead were received. The lab was instructed to run both analyses.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples TMW-1_11052014 (680-106992-6), DUP-1_11052014 (680-106992-7) and TRIP-BLANK_11052014 (680-106992-12) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

Method(s) 8260B: The following sample were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory DUP-1_11052014 (680-106992-7), TMW-1_11052014 (680-106992-6), TMW-1_11052014 (680-106992-6 MS), TMW-1_11052014 (680-106992-6 MSD).

Samples TMW-1_11052014 (680-106992-6)[5X] and DUP-1_11052014 (680-106992-7)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples PDMW-40R_11052014 (680-106992-1), MW-204_11052014 (680-106992-2), TMW-1_11052014 (680-106992-6) and DUP-1_11052014 (680-106992-7) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D.

Method(s) 3520C: Samples took more then 2 mL of 1:1 Sulfuric Acid to get to <2.

Naphthalene recovery is outside criteria high for the MSD of sample TMW-1_11052014 (680-106992-6) in batch 680-357998.

Refer to the QC report for details.

METALS (ICP)

Samples PDMW-24T_11052014 (680-106992-5), PDMW-13P_11052014 (680-106992-10) and DUP-2_11052014 (680-106992-11) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C.

METALS (ICP)

Samples PDMW-23R_11052014 (680-106992-3), MW-3R_11052014 (680-106992-4), PDMW-24T_11052014 (680-106992-5), TMW-1_11052014 (680-106992-6), DUP-1_11052014 (680-106992-7), PDMW-8R_11052014 (680-106992-8), PDMW-10R_11052014 (680-106992-9), PDMW-13P_11052014 (680-106992-10) and DUP-2_11052014 (680-106992-11) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C.

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Job ID: 680-106992-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Arsenic recovery is outside criteria low for the MSD of sample TMW-1_11052014 (680-106992-6) in batch 680-358681. Arsenic and Chromium exceeded the RPD limit.

Refer to the QC report for details.

AMMONIA

Samples PDMW-40R_11052014 (680-106992-1), MW-204_11052014 (680-106992-2), PDMW-23R_11052014 (680-106992-3), MW-3R_11052014 (680-106992-4), TMW-1_11052014 (680-106992-6), DUP-1_11052014 (680-106992-7), PDMW-8R_11052014 (680-106992-8), PDMW-10R_11052014 (680-106992-9), PDMW-13P_11052014 (680-106992-10) and DUP-2_11052014 (680-106992-11) were analyzed for ammonia in accordance with EPA Method 350.1.

Ammonia is outside recovery criteria low for the MS and MSD of sample PDMW-23R_11052014 (680-106992-3) in batch 680-358344.

Ammonia is outside recovery criteria high for the MS and MSD of sample TMW-1_11052014 (680-106992-6) in batch 680-358344.

Refer to the QC report for details.

Samples PDMW-40R_11052014 (680-106992-1)[50X], MW-204_11052014 (680-106992-2)[500X], PDMW-23R_11052014 (680-106992-3)[10X], MW-3R_11052014 (680-106992-4)[5X], TMW-1_11052014 (680-106992-6)[5000X], DUP-1_11052014 (680-106992-7)[2000X], PDMW-8R_11052014 (680-106992-8)[50X], PDMW-10R_11052014 (680-106992-9)[10X] and DUP-2_11052014 (680-106992-11)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

NITRATE-NITRITE AS NITROGEN

Samples PDMW-40R_11052014 (680-106992-1), MW-204_11052014 (680-106992-2), PDMW-23R_11052014 (680-106992-3), MW-3R_11052014 (680-106992-4), TMW-1_11052014 (680-106992-6), DUP-1_11052014 (680-106992-7), PDMW-8R_11052014 (680-106992-8), PDMW-10R_11052014 (680-106992-9), PDMW-13P_11052014 (680-106992-10) and DUP-2_11052014 (680-106992-11) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2.

Samples TMW-1_11052014 (680-106992-6)[500X] and DUP-1_11052014 (680-106992-7)[500X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Definitions/Glossary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery exceeds the control limits

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery exceeds the control limits
F2	MS/MSD RPD exceeds control limits

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-106992-1	PDMW-40R_11052014	Water	11/05/14 09:30	11/06/14 09:55
680-106992-2	MW-204_11052014	Water	11/05/14 09:20	11/06/14 09:55
680-106992-3	PDMW-23R_11052014	Water	11/05/14 10:35	11/06/14 09:55
680-106992-4	MW-3R_11052014	Water	11/05/14 14:48	11/06/14 09:55
680-106992-5	PDMW-24T_11052014	Water	11/05/14 17:07	11/06/14 09:55
680-106992-6	TMW-1_11052014	Water	11/05/14 15:20	11/06/14 09:55
680-106992-7	DUP-1_11052014	Water	11/05/14 00:00	11/06/14 09:55
680-106992-8	PDMW-8R_11052014	Water	11/05/14 10:25	11/06/14 09:55
680-106992-9	PDMW-10R_11052014	Water	11/05/14 11:15	11/06/14 09:55
680-106992-10	PDMW-13P_11052014	Water	11/05/14 13:50	11/06/14 09:55
680-106992-11	DUP-2_11052014	Water	11/05/14 00:00	11/06/14 09:55
680-106992-12	TRIP-BLANK_11052014	Water	11/05/14 00:00	11/06/14 09:55

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: PDMW-40R_11052014

Lab Sample ID: 680-106992-1

Date Collected: 11/05/14 09:30

Matrix: Water

Date Received: 11/06/14 09:55

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Acenaphthylene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Anthracene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Benzo[a]anthracene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Benzo[a]pyrene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Benzo[b]fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Benzo[g,h,i]perylene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Benzo[k]fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Chrysene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Dibenz[a,h]anthracene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Fluorene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
1-Methylnaphthalene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
2-Methylnaphthalene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Naphthalene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Phenanthrene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1
Pyrene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	54		32 - 114	11/10/14 15:53	11/11/14 18:25	1
Nitrobenzene-d5 (Surr)	60		30 - 117	11/10/14 15:53	11/11/14 18:25	1
Terphenyl-d14 (Surr)	83		10 - 132	11/10/14 15:53	11/11/14 18:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	44		2.5		mg/L			11/12/14 11:50	50
Nitrate as N	0.050	U	0.050		mg/L			11/06/14 16:04	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: MW-204_11052014

Lab Sample ID: 680-106992-2

Date Collected: 11/05/14 09:20

Matrix: Water

Date Received: 11/06/14 09:55

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Acenaphthylene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Anthracene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Benzo[a]anthracene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Benzo[a]pyrene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Benzo[b]fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Benzo[g,h,i]perylene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Benzo[k]fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Chrysene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Dibenz[a,h]anthracene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Fluorene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
1-Methylnaphthalene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
2-Methylnaphthalene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Naphthalene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Phenanthrene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1
Pyrene	10	U	10		ug/L		11/10/14 15:53	11/11/14 18:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	51		32 - 114	11/10/14 15:53	11/11/14 18:51	1
Nitrobenzene-d5 (Surr)	51		30 - 117	11/10/14 15:53	11/11/14 18:51	1
Terphenyl-d14 (Surr)	78		10 - 132	11/10/14 15:53	11/11/14 18:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	340		25		mg/L			11/12/14 11:30	500
Nitrate as N	0.050	U	0.050		mg/L			11/06/14 16:06	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: PDMW-23R_11052014

Lab Sample ID: 680-106992-3

Date Collected: 11/05/14 10:35

Matrix: Water

Date Received: 11/06/14 09:55

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/11/14 10:47	11/13/14 19:45	1
Lead	10	U	10		ug/L		11/11/14 10:47	11/13/14 19:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	2.3		0.50		mg/L			11/12/14 11:30	10
Nitrate as N	0.050	U	0.050		mg/L			11/06/14 15:40	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: MW-3R_11052014

Lab Sample ID: 680-106992-4

Date Collected: 11/05/14 14:48

Matrix: Water

Date Received: 11/06/14 09:55

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/11/14 10:47	11/13/14 20:15	1
Nickel	40	U	40		ug/L		11/11/14 10:47	11/13/14 20:15	1
Lead	10	U	10		ug/L		11/11/14 10:47	11/13/14 20:15	1
Zinc	20	U	20		ug/L		11/11/14 10:47	11/13/14 20:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	6.5		0.25		mg/L			11/11/14 21:00	5
Nitrate as N	0.050	U	0.050		mg/L			11/06/14 16:07	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: PDMW-24T_11052014

Lab Sample ID: 680-106992-5

Date Collected: 11/05/14 17:07

Matrix: Water

Date Received: 11/06/14 09:55

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	10	U	10		ug/L		11/11/14 10:47	11/13/14 20:19	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	10	U	10		ug/L		11/11/14 14:28	11/13/14 17:52	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: TMW-1_11052014

Lab Sample ID: 680-106992-6

Date Collected: 11/05/14 15:20

Matrix: Water

Date Received: 11/06/14 09:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	80		5.0		ug/L			11/11/14 14:01	5
Ethylbenzene	5.0	U	5.0		ug/L			11/11/14 14:01	5
Toluene	5.0	U	5.0		ug/L			11/11/14 14:01	5
Xylenes, Total	420		10		ug/L			11/11/14 14:01	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		11/11/14 14:01	5
1,2-Dichloroethane-d4 (Surr)	81		70 - 130		11/11/14 14:01	5
Dibromofluoromethane (Surr)	91		70 - 130		11/11/14 14:01	5
4-Bromofluorobenzene (Surr)	110		70 - 130		11/11/14 14:01	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Acenaphthylene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Anthracene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Benzo[a]anthracene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Benzo[a]pyrene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Benzo[b]fluoranthene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Benzo[g,h,i]perylene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Benzo[k]fluoranthene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Chrysene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Dibenz[a,h]anthracene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Fluoranthene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Fluorene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Indeno[1,2,3-cd]pyrene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
1-Methylnaphthalene	12		9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
2-Methylnaphthalene	16		9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Naphthalene	44		9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Phenanthrene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1
Pyrene	9.7	U	9.7		ug/L		11/10/14 15:53	11/13/14 20:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	57		32 - 114	11/10/14 15:53	11/13/14 20:43	1
Nitrobenzene-d5 (Surr)	56		30 - 117	11/10/14 15:53	11/13/14 20:43	1
Terphenyl-d14 (Surr)	54		10 - 132	11/10/14 15:53	11/13/14 20:43	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	130		20		ug/L		11/12/14 10:58	11/13/14 13:15	1
Chromium	26		10		ug/L		11/12/14 10:58	11/13/14 13:15	1
Lead	10	U	10		ug/L		11/12/14 10:58	11/13/14 13:15	1
Nickel	41		40		ug/L		11/12/14 10:58	11/13/14 13:15	1
Zinc	97		20		ug/L		11/12/14 10:58	11/13/14 13:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	3800		250		mg/L			11/12/14 12:35	5000
Nitrate as N	120		25		mg/L			11/06/14 15:44	500

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: DUP-1_11052014

Lab Sample ID: 680-106992-7

Date Collected: 11/05/14 00:00

Matrix: Water

Date Received: 11/06/14 09:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	77		5.0		ug/L			11/11/14 14:23	5
Ethylbenzene	5.0	U	5.0		ug/L			11/11/14 14:23	5
Toluene	5.0	U	5.0		ug/L			11/11/14 14:23	5
Xylenes, Total	420		10		ug/L			11/11/14 14:23	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130					11/11/14 14:23	5
1,2-Dichloroethane-d4 (Surr)	79		70 - 130					11/11/14 14:23	5
Dibromofluoromethane (Surr)	90		70 - 130					11/11/14 14:23	5
4-Bromofluorobenzene (Surr)	115		70 - 130					11/11/14 14:23	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Acenaphthylene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Anthracene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Benzo[a]anthracene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Benzo[a]pyrene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Benzo[b]fluoranthene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Benzo[g,h,i]perylene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Benzo[k]fluoranthene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Chrysene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Dibenz[a,h]anthracene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Fluoranthene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Fluorene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Indeno[1,2,3-cd]pyrene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
1-Methylnaphthalene	12		9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
2-Methylnaphthalene	16		9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Naphthalene	40		9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Phenanthrene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Pyrene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	59		32 - 114				11/10/14 15:53	11/13/14 21:08	1
Nitrobenzene-d5 (Surr)	55		30 - 117				11/10/14 15:53	11/13/14 21:08	1
Terphenyl-d14 (Surr)	69		10 - 132				11/10/14 15:53	11/13/14 21:08	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	150		20		ug/L		11/12/14 10:58	11/13/14 13:37	1
Chromium	30		10		ug/L		11/12/14 10:58	11/13/14 13:37	1
Lead	10	U	10		ug/L		11/12/14 10:58	11/13/14 13:37	1
Nickel	40	U	40		ug/L		11/12/14 10:58	11/13/14 13:37	1
Zinc	94		20		ug/L		11/12/14 10:58	11/13/14 13:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	3900		100		mg/L			11/12/14 12:09	2000
Nitrate as N	100		25		mg/L			11/06/14 15:56	500

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: PDMW-8R_11052014

Lab Sample ID: 680-106992-8

Date Collected: 11/05/14 10:25

Matrix: Water

Date Received: 11/06/14 09:55

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/11/14 10:47	11/13/14 20:23	1
Lead	10	U	10		ug/L		11/11/14 10:47	11/13/14 20:23	1
Nickel	40	U	40		ug/L		11/11/14 10:47	11/13/14 20:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	94		2.5		mg/L			11/11/14 21:00	50
Nitrate as N	0.050	U	0.050		mg/L			11/06/14 16:08	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: PDMW-10R_11052014

Lab Sample ID: 680-106992-9

Date Collected: 11/05/14 11:15

Matrix: Water

Date Received: 11/06/14 09:55

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/11/14 10:47	11/13/14 20:28	1
Lead	10	U	10		ug/L		11/11/14 10:47	11/13/14 20:28	1
Nickel	40	U	40		ug/L		11/11/14 10:47	11/13/14 20:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	12		0.50		mg/L			11/11/14 21:00	10
Nitrate as N	0.050	U	0.050		mg/L			11/06/14 16:09	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: PDMW-13P_11052014

Lab Sample ID: 680-106992-10

Date Collected: 11/05/14 13:50

Matrix: Water

Date Received: 11/06/14 09:55

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/11/14 10:47	11/13/14 20:32	1
Nickel	40	U	40		ug/L		11/11/14 10:47	11/13/14 20:32	1
Lead	33		10		ug/L		11/11/14 10:47	11/13/14 20:32	1
Zinc	20	U	20		ug/L		11/11/14 10:47	11/13/14 20:32	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	10	U	10		ug/L		11/11/14 14:28	11/13/14 17:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	2.0		0.050		mg/L			11/12/14 11:21	1
Nitrate as N	0.050	U	0.050		mg/L			11/06/14 16:12	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: DUP-2_11052014

Lab Sample ID: 680-106992-11

Date Collected: 11/05/14 00:00

Matrix: Water

Date Received: 11/06/14 09:55

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/11/14 10:47	11/13/14 20:36	1
Nickel	40	U	40		ug/L		11/11/14 10:47	11/13/14 20:36	1
Lead	39		10		ug/L		11/11/14 10:47	11/13/14 20:36	1
Zinc	20	U	20		ug/L		11/11/14 10:47	11/13/14 20:36	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	10	U	10		ug/L		11/11/14 14:28	11/13/14 18:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	2.2		0.10		mg/L			11/12/14 12:00	2
Nitrate as N	0.050	U	0.050		mg/L			11/06/14 16:13	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: TRIP-BLANK_11052014

Lab Sample ID: 680-106992-12

Date Collected: 11/05/14 00:00

Matrix: Water

Date Received: 11/06/14 09:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/11/14 16:51	1
Ethylbenzene	1.0	U	1.0		ug/L			11/11/14 16:51	1
Toluene	1.0	U	1.0		ug/L			11/11/14 16:51	1
Xylenes, Total	2.0	U	2.0		ug/L			11/11/14 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		11/11/14 16:51	1
1,2-Dichloroethane-d4 (Surr)	83		70 - 130		11/11/14 16:51	1
Dibromofluoromethane (Surr)	92		70 - 130		11/11/14 16:51	1
4-Bromofluorobenzene (Surr)	129		70 - 130		11/11/14 16:51	1

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-357980/7

Matrix: Water

Analysis Batch: 357980

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/11/14 11:40	1
Ethylbenzene	1.0	U	1.0		ug/L			11/11/14 11:40	1
Toluene	1.0	U	1.0		ug/L			11/11/14 11:40	1
Xylenes, Total	2.0	U	2.0		ug/L			11/11/14 11:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		11/11/14 11:40	1
1,2-Dichloroethane-d4 (Surr)	82		70 - 130		11/11/14 11:40	1
Dibromofluoromethane (Surr)	99		70 - 130		11/11/14 11:40	1
4-Bromofluorobenzene (Surr)	124		70 - 130		11/11/14 11:40	1

Lab Sample ID: LCS 680-357980/3

Matrix: Water

Analysis Batch: 357980

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	51.5		ug/L		103	74 - 123
Ethylbenzene	50.0	50.1		ug/L		100	78 - 125
Toluene	50.0	49.9		ug/L		100	77 - 125
Xylenes, Total	100	104		ug/L		104	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		70 - 130
1,2-Dichloroethane-d4 (Surr)	105		70 - 130
Dibromofluoromethane (Surr)	103		70 - 130
4-Bromofluorobenzene (Surr)	109		70 - 130

Lab Sample ID: LCSD 680-357980/4

Matrix: Water

Analysis Batch: 357980

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	51.8		ug/L		104	74 - 123	1	30
Ethylbenzene	50.0	51.2		ug/L		102	78 - 125	2	30
Toluene	50.0	49.7		ug/L		99	77 - 125	0	30
Xylenes, Total	100	107		ug/L		107	80 - 124	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	106		70 - 130
1,2-Dichloroethane-d4 (Surr)	105		70 - 130
Dibromofluoromethane (Surr)	104		70 - 130
4-Bromofluorobenzene (Surr)	108		70 - 130

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

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

Lab Sample ID: 680-106992-6 MS

Matrix: Water

Analysis Batch: 357980

Client Sample ID: TMW-1_11052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	80		250	287		ug/L		83	74 - 123
Ethylbenzene	5.0	U	250	242		ug/L		95	78 - 125
Toluene	5.0	U	250	223		ug/L		89	77 - 125
Xylenes, Total	420		500	916		ug/L		98	80 - 124

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	102		70 - 130
1,2-Dichloroethane-d4 (Surr)	92		70 - 130
Dibromofluoromethane (Surr)	89		70 - 130
4-Bromofluorobenzene (Surr)	109		70 - 130

Lab Sample ID: 680-106992-6 MSD

Matrix: Water

Analysis Batch: 357980

Client Sample ID: TMW-1_11052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	80		250	287		ug/L		83	74 - 123	0	30
Ethylbenzene	5.0	U	250	249		ug/L		98	78 - 125	3	30
Toluene	5.0	U	250	224		ug/L		89	77 - 125	0	30
Xylenes, Total	420		500	939		ug/L		103	80 - 124	3	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	104		70 - 130
1,2-Dichloroethane-d4 (Surr)	94		70 - 130
Dibromofluoromethane (Surr)	91		70 - 130
4-Bromofluorobenzene (Surr)	108		70 - 130

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

Lab Sample ID: MB 680-357797/10-A

Matrix: Water

Analysis Batch: 358280

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 357797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Acenaphthylene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Anthracene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Benzo[a]anthracene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Benzo[a]pyrene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Benzo[b]fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Benzo[g,h,i]perylene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Benzo[k]fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Chrysene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Dibenz(a,h)anthracene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Fluorene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1

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QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

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

Lab Sample ID: MB 680-357797/10-A

Matrix: Water

Analysis Batch: 358280

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 357797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
2-Methylnaphthalene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Naphthalene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Phenanthrene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1
Pyrene	10	U	10		ug/L		11/10/14 15:53	11/12/14 13:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	61		32 - 114	11/10/14 15:53	11/12/14 13:03	1
Nitrobenzene-d5 (Surr)	70		30 - 117	11/10/14 15:53	11/12/14 13:03	1
Terphenyl-d14 (Surr)	106		10 - 132	11/10/14 15:53	11/12/14 13:03	1

Lab Sample ID: MB 680-357797/10-A

Matrix: Water

Analysis Batch: 358569

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 357797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Acenaphthylene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Anthracene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Benzo[a]anthracene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Benzo[a]pyrene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Benzo[b]fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Benzo[g,h,i]perylene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Benzo[k]fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Chrysene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Dibenz[a,h]anthracene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Fluorene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
1-Methylnaphthalene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
2-Methylnaphthalene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Naphthalene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Phenanthrene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Pyrene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	65		32 - 114	11/10/14 15:53	11/13/14 19:55	1
Nitrobenzene-d5 (Surr)	60		30 - 117	11/10/14 15:53	11/13/14 19:55	1
Terphenyl-d14 (Surr)	109		10 - 132	11/10/14 15:53	11/13/14 19:55	1

Lab Sample ID: LCS 680-357797/11-A

Matrix: Water

Analysis Batch: 357998

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 357797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	59.3		ug/L		59	32 - 107
Acenaphthylene	100	60.3		ug/L		60	10 - 119
Anthracene	100	66.1		ug/L		66	38 - 112

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QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

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

Lab Sample ID: LCS 680-357797/11-A

Matrix: Water

Analysis Batch: 357998

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 357797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	100	66.5		ug/L		66	36 - 115
Benzo[a]pyrene	100	65.3		ug/L		65	13 - 120
Benzo[b]fluoranthene	100	65.4		ug/L		65	32 - 117
Benzo[g,h,i]perylene	100	62.4		ug/L		62	21 - 118
Benzo[k]fluoranthene	100	65.7		ug/L		66	28 - 125
Chrysene	100	65.2		ug/L		65	36 - 113
Dibenz(a,h)anthracene	100	63.5		ug/L		64	32 - 115
Fluoranthene	100	69.8		ug/L		70	41 - 113
Fluorene	100	62.3		ug/L		62	39 - 115
Indeno[1,2,3-cd]pyrene	100	56.4		ug/L		56	16 - 119
1-Methylnaphthalene	100	53.9		ug/L		54	26 - 94
2-Methylnaphthalene	100	54.4		ug/L		54	24 - 92
Naphthalene	100	50.5		ug/L		50	24 - 85
Phenanthrene	100	65.1		ug/L		65	40 - 114
Pyrene	100	66.6		ug/L		67	29 - 118

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	58		32 - 114
Nitrobenzene-d5 (Surr)	60		30 - 117
Terphenyl-d14 (Surr)	91		10 - 132

Lab Sample ID: 680-106992-6 MS

Matrix: Water

Analysis Batch: 357998

Client Sample ID: TMW-1_11052014

Prep Type: Total/NA

Prep Batch: 357797

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	9.7	U	94.9	62.9		ug/L		66	32 - 107
Acenaphthylene	9.7	U	94.9	53.6		ug/L		56	10 - 119
Anthracene	9.7	U	94.9	59.2		ug/L		62	38 - 112
Benzo[a]anthracene	9.7	U	94.9	49.2		ug/L		52	36 - 115
Benzo[a]pyrene	9.7	U	94.9	40.9		ug/L		43	13 - 120
Benzo[b]fluoranthene	9.7	U	94.9	39.4		ug/L		42	32 - 117
Benzo[g,h,i]perylene	9.7	U	94.9	38.9		ug/L		41	21 - 118
Benzo[k]fluoranthene	9.7	U	94.9	40.7		ug/L		43	28 - 125
Chrysene	9.7	U	94.9	47.2		ug/L		50	36 - 113
Dibenz(a,h)anthracene	9.7	U	94.9	35.6		ug/L		38	32 - 115
Fluoranthene	9.7	U	94.9	60.4		ug/L		64	41 - 113
Fluorene	9.7	U	94.9	69.0		ug/L		73	39 - 115
Indeno[1,2,3-cd]pyrene	9.7	U	94.9	35.3		ug/L		37	16 - 119
1-Methylnaphthalene	12		94.9	64.5		ug/L		54	26 - 94
2-Methylnaphthalene	16		94.9	66.9		ug/L		56	24 - 92
Naphthalene	44		94.9	92.0		ug/L		52	24 - 85
Phenanthrene	9.7	U	94.9	67.3		ug/L		71	40 - 114
Pyrene	9.7	U	94.9	60.8		ug/L		64	29 - 118

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Fluorobiphenyl	63		32 - 114

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QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

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

Lab Sample ID: 680-106992-6 MS

Matrix: Water

Analysis Batch: 357998

Client Sample ID: TMW-1_11052014

Prep Type: Total/NA

Prep Batch: 357797

Surrogate	MS %Recovery	MS Qualifier	Limits
Nitrobenzene-d5 (Surr)	64		30 - 117
Terphenyl-d14 (Surr)	53		10 - 132

Lab Sample ID: 680-106992-6 MSD

Matrix: Water

Analysis Batch: 357998

Client Sample ID: TMW-1_11052014

Prep Type: Total/NA

Prep Batch: 357797

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	9.7	U	93.0	58.2		ug/L		63	32 - 107	8	20
Acenaphthylene	9.7	U	93.0	54.2		ug/L		58	10 - 119	1	20
Anthracene	9.7	U	93.0	55.8		ug/L		60	38 - 112	6	20
Benzo[a]anthracene	9.7	U	93.0	46.1		ug/L		50	36 - 115	6	40
Benzo[a]pyrene	9.7	U	93.0	38.3		ug/L		41	13 - 120	7	40
Benzo[b]fluoranthene	9.7	U	93.0	38.9		ug/L		42	32 - 117	1	50
Benzo[g,h,i]perylene	9.7	U	93.0	36.5		ug/L		39	21 - 118	6	50
Benzo[k]fluoranthene	9.7	U	93.0	35.4		ug/L		38	28 - 125	14	40
Chrysene	9.7	U	93.0	44.6		ug/L		48	36 - 113	6	50
Dibenz(a,h)anthracene	9.7	U	93.0	32.9		ug/L		35	32 - 115	8	40
Fluoranthene	9.7	U	93.0	54.3		ug/L		58	41 - 113	11	40
Fluorene	9.7	U	93.0	63.2		ug/L		68	39 - 115	9	20
Indeno[1,2,3-cd]pyrene	9.7	U	93.0	33.0		ug/L		35	16 - 119	7	40
1-Methylnaphthalene	12		93.0	67.4		ug/L		58	26 - 94	4	50
2-Methylnaphthalene	16		93.0	71.4		ug/L		62	24 - 92	6	30
Naphthalene	44		93.0	129	F1	ug/L		93	24 - 85	34	40
Phenanthrene	9.7	U	93.0	61.6		ug/L		66	40 - 114	9	40
Pyrene	9.7	U	93.0	58.6		ug/L		63	29 - 118	4	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2-Fluorobiphenyl	60		32 - 114
Nitrobenzene-d5 (Surr)	61		30 - 117
Terphenyl-d14 (Surr)	57		10 - 132

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-358064/1-A

Matrix: Water

Analysis Batch: 358678

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358064

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/11/14 10:47	11/13/14 19:36	1
Lead	10	U	10		ug/L		11/11/14 10:47	11/13/14 19:36	1
Nickel	40	U	40		ug/L		11/11/14 10:47	11/13/14 19:36	1
Zinc	20	U	20		ug/L		11/11/14 10:47	11/13/14 19:36	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 680-358064/2-A

Matrix: Water

Analysis Batch: 358678

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 358064

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	101		ug/L		101	80 - 120
Lead	500	492		ug/L		98	80 - 120
Nickel	100	101		ug/L		101	80 - 120
Zinc	100	104		ug/L		104	80 - 120

Lab Sample ID: 680-106992-3 MS

Matrix: Water

Analysis Batch: 358678

Client Sample ID: PDMW-23R_11052014

Prep Type: Total/NA

Prep Batch: 358064

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	20	U	100	112		ug/L		101	75 - 125
Lead	10	U	500	484		ug/L		97	75 - 125

Lab Sample ID: 680-106992-3 MSD

Matrix: Water

Analysis Batch: 358678

Client Sample ID: PDMW-23R_11052014

Prep Type: Total/NA

Prep Batch: 358064

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	20	U	100	116		ug/L		104	75 - 125	3	20
Lead	10	U	500	480		ug/L		96	75 - 125	1	20

Lab Sample ID: MB 680-358284/1-A

Matrix: Water

Analysis Batch: 358681

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358284

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/12/14 10:58	11/13/14 13:06	1
Chromium	10	U	10		ug/L		11/12/14 10:58	11/13/14 13:06	1
Lead	10	U	10		ug/L		11/12/14 10:58	11/13/14 13:06	1
Nickel	40	U	40		ug/L		11/12/14 10:58	11/13/14 13:06	1
Zinc	20	U	20		ug/L		11/12/14 10:58	11/13/14 13:06	1

Lab Sample ID: LCS 680-358284/2-A

Matrix: Water

Analysis Batch: 358681

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 358284

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	97.9		ug/L		98	80 - 120
Chromium	100	101		ug/L		101	80 - 120
Lead	500	488		ug/L		98	80 - 120
Nickel	100	99.9		ug/L		100	80 - 120
Zinc	100	101		ug/L		101	80 - 120

Lab Sample ID: 680-106992-6 MS

Matrix: Water

Analysis Batch: 358681

Client Sample ID: TMW-1_11052014

Prep Type: Total/NA

Prep Batch: 358284

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	130		100	247		ug/L		118	75 - 125

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-106992-6 MS

Matrix: Water

Analysis Batch: 358681

Client Sample ID: TMW-1_11052014

Prep Type: Total/NA

Prep Batch: 358284

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	26		100	130		ug/L		103	75 - 125
Lead	10	U	500	484		ug/L		97	75 - 125
Nickel	41		100	136		ug/L		96	75 - 125
Zinc	97		100	200		ug/L		103	75 - 125

Lab Sample ID: 680-106992-6 MSD

Matrix: Water

Analysis Batch: 358681

Client Sample ID: TMW-1_11052014

Prep Type: Total/NA

Prep Batch: 358284

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	130		100	178	F1 F2	ug/L		50	75 - 125	32	20
Chromium	26		100	105	F2	ug/L		79	75 - 125	21	20
Lead	10	U	500	430		ug/L		86	75 - 125	12	20
Nickel	41		100	123		ug/L		83	75 - 125	10	20
Zinc	97		100	180		ug/L		83	75 - 125	10	20

Lab Sample ID: MB 680-358110/1-A

Matrix: Water

Analysis Batch: 358681

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 358110

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	10	U	10		ug/L		11/11/14 14:28	11/13/14 17:02	1

Lab Sample ID: LCS 680-358110/2-A

Matrix: Water

Analysis Batch: 358681

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 358110

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	500	495		ug/L		99	80 - 120

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-358344/39

Matrix: Water

Analysis Batch: 358344

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.050	U	0.050		mg/L			11/12/14 12:00	1

Lab Sample ID: LCS 680-358344/38

Matrix: Water

Analysis Batch: 358344

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	0.998		mg/L		100	90 - 110

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 680-106992-3 MS

Matrix: Water

Analysis Batch: 358344

Client Sample ID: PDMW-23R_11052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.3		10.0	8.56	F1	mg/L		63	90 - 110

Lab Sample ID: 680-106992-3 MSD

Matrix: Water

Analysis Batch: 358344

Client Sample ID: PDMW-23R_11052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	2.3		10.0	9.72	F1	mg/L		74	90 - 110	13	30

Lab Sample ID: 680-106992-6 MS

Matrix: Water

Analysis Batch: 358344

Client Sample ID: TMW-1_11052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	3800		1000	4890	F1	mg/L		111	90 - 110

Lab Sample ID: 680-106992-6 MSD

Matrix: Water

Analysis Batch: 358344

Client Sample ID: TMW-1_11052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	3800		1000	4030	F1	mg/L		26	90 - 110	19	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-357378/13

Matrix: Water

Analysis Batch: 357378

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			11/06/14 15:36	1

Lab Sample ID: LCS 680-357378/16

Matrix: Water

Analysis Batch: 357378

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.483		mg/L		97	75 - 125

Lab Sample ID: 680-106992-3 MS

Matrix: Water

Analysis Batch: 357378

Client Sample ID: PDMW-23R_11052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.050	U	0.500	0.454		mg/L		91	75 - 125

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: 680-106992-3 MSD

Matrix: Water

Analysis Batch: 357378

Client Sample ID: PDMW-23R_11052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.050	U	0.500	0.456		mg/L		91	75 - 125	0	30

Lab Sample ID: 680-106992-6 MS

Matrix: Water

Analysis Batch: 357378

Client Sample ID: TMW-1_11052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	120		250	328		mg/L		81	75 - 125		

Lab Sample ID: 680-106992-6 MSD

Matrix: Water

Analysis Batch: 357378

Client Sample ID: TMW-1_11052014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	120		250	326		mg/L		81	75 - 125	0	30

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

GC/MS VOA

Analysis Batch: 357980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106992-6	TMW-1_11052014	Total/NA	Water	8260B	
680-106992-6 MS	TMW-1_11052014	Total/NA	Water	8260B	
680-106992-6 MSD	TMW-1_11052014	Total/NA	Water	8260B	
680-106992-7	DUP-1_11052014	Total/NA	Water	8260B	
680-106992-12	TRIP-BLANK_11052014	Total/NA	Water	8260B	
LCS 680-357980/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-357980/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-357980/7	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 357797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106992-1	PDMW-40R_11052014	Total/NA	Water	3520C	
680-106992-2	MW-204_11052014	Total/NA	Water	3520C	
680-106992-6	TMW-1_11052014	Total/NA	Water	3520C	
680-106992-6 MS	TMW-1_11052014	Total/NA	Water	3520C	
680-106992-6 MSD	TMW-1_11052014	Total/NA	Water	3520C	
680-106992-7	DUP-1_11052014	Total/NA	Water	3520C	
LCS 680-357797/11-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-357797/10-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 357998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106992-1	PDMW-40R_11052014	Total/NA	Water	8270D	357797
680-106992-2	MW-204_11052014	Total/NA	Water	8270D	357797
680-106992-6 MS	TMW-1_11052014	Total/NA	Water	8270D	357797
680-106992-6 MSD	TMW-1_11052014	Total/NA	Water	8270D	357797
LCS 680-357797/11-A	Lab Control Sample	Total/NA	Water	8270D	357797

Analysis Batch: 358280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-357797/10-A	Method Blank	Total/NA	Water	8270D	357797

Analysis Batch: 358569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106992-6	TMW-1_11052014	Total/NA	Water	8270D	357797
680-106992-7	DUP-1_11052014	Total/NA	Water	8270D	357797
MB 680-357797/10-A	Method Blank	Total/NA	Water	8270D	357797

Metals

Prep Batch: 358064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106992-3	PDMW-23R_11052014	Total/NA	Water	3010A	
680-106992-3 MS	PDMW-23R_11052014	Total/NA	Water	3010A	
680-106992-3 MSD	PDMW-23R_11052014	Total/NA	Water	3010A	
680-106992-4	MW-3R_11052014	Total/NA	Water	3010A	
680-106992-5	PDMW-24T_11052014	Total/NA	Water	3010A	
680-106992-8	PDMW-8R_11052014	Total/NA	Water	3010A	

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Metals (Continued)

Prep Batch: 358064 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106992-9	PDMW-10R_11052014	Total/NA	Water	3010A	
680-106992-10	PDMW-13P_11052014	Total/NA	Water	3010A	
680-106992-11	DUP-2_11052014	Total/NA	Water	3010A	
LCS 680-358064/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-358064/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 358110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106992-5	PDMW-24T_11052014	Dissolved	Water	3005A	
680-106992-10	PDMW-13P_11052014	Dissolved	Water	3005A	
680-106992-11	DUP-2_11052014	Dissolved	Water	3005A	
LCS 680-358110/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-358110/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 358284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106992-6	TMW-1_11052014	Total/NA	Water	3010A	
680-106992-6 MS	TMW-1_11052014	Total/NA	Water	3010A	
680-106992-6 MSD	TMW-1_11052014	Total/NA	Water	3010A	
680-106992-7	DUP-1_11052014	Total/NA	Water	3010A	
LCS 680-358284/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-358284/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 358678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106992-3	PDMW-23R_11052014	Total/NA	Water	6010C	358064
680-106992-3 MS	PDMW-23R_11052014	Total/NA	Water	6010C	358064
680-106992-3 MSD	PDMW-23R_11052014	Total/NA	Water	6010C	358064
680-106992-4	MW-3R_11052014	Total/NA	Water	6010C	358064
680-106992-5	PDMW-24T_11052014	Total/NA	Water	6010C	358064
680-106992-8	PDMW-8R_11052014	Total/NA	Water	6010C	358064
680-106992-9	PDMW-10R_11052014	Total/NA	Water	6010C	358064
680-106992-10	PDMW-13P_11052014	Total/NA	Water	6010C	358064
680-106992-11	DUP-2_11052014	Total/NA	Water	6010C	358064
LCS 680-358064/2-A	Lab Control Sample	Total/NA	Water	6010C	358064
MB 680-358064/1-A	Method Blank	Total/NA	Water	6010C	358064

Analysis Batch: 358681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106992-5	PDMW-24T_11052014	Dissolved	Water	6010C	358110
680-106992-6	TMW-1_11052014	Total/NA	Water	6010C	358284
680-106992-6 MS	TMW-1_11052014	Total/NA	Water	6010C	358284
680-106992-6 MSD	TMW-1_11052014	Total/NA	Water	6010C	358284
680-106992-7	DUP-1_11052014	Total/NA	Water	6010C	358284
680-106992-10	PDMW-13P_11052014	Dissolved	Water	6010C	358110
680-106992-11	DUP-2_11052014	Dissolved	Water	6010C	358110
LCS 680-358110/2-A	Lab Control Sample	Total Recoverable	Water	6010C	358110
LCS 680-358284/2-A	Lab Control Sample	Total/NA	Water	6010C	358284
MB 680-358110/1-A	Method Blank	Total Recoverable	Water	6010C	358110
MB 680-358284/1-A	Method Blank	Total/NA	Water	6010C	358284

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

General Chemistry

Analysis Batch: 357378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106992-1	PDMW-40R_11052014	Total/NA	Water	353.2	
680-106992-2	MW-204_11052014	Total/NA	Water	353.2	
680-106992-3	PDMW-23R_11052014	Total/NA	Water	353.2	
680-106992-3 MS	PDMW-23R_11052014	Total/NA	Water	353.2	
680-106992-3 MSD	PDMW-23R_11052014	Total/NA	Water	353.2	
680-106992-4	MW-3R_11052014	Total/NA	Water	353.2	
680-106992-6	TMW-1_11052014	Total/NA	Water	353.2	
680-106992-6 MS	TMW-1_11052014	Total/NA	Water	353.2	
680-106992-6 MSD	TMW-1_11052014	Total/NA	Water	353.2	
680-106992-7	DUP-1_11052014	Total/NA	Water	353.2	
680-106992-8	PDMW-8R_11052014	Total/NA	Water	353.2	
680-106992-9	PDMW-10R_11052014	Total/NA	Water	353.2	
680-106992-10	PDMW-13P_11052014	Total/NA	Water	353.2	
680-106992-11	DUP-2_11052014	Total/NA	Water	353.2	
LCS 680-357378/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-357378/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 358344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-106992-1	PDMW-40R_11052014	Total/NA	Water	350.1	
680-106992-2	MW-204_11052014	Total/NA	Water	350.1	
680-106992-3	PDMW-23R_11052014	Total/NA	Water	350.1	
680-106992-3 MS	PDMW-23R_11052014	Total/NA	Water	350.1	
680-106992-3 MSD	PDMW-23R_11052014	Total/NA	Water	350.1	
680-106992-4	MW-3R_11052014	Total/NA	Water	350.1	
680-106992-6	TMW-1_11052014	Total/NA	Water	350.1	
680-106992-6 MS	TMW-1_11052014	Total/NA	Water	350.1	
680-106992-6 MSD	TMW-1_11052014	Total/NA	Water	350.1	
680-106992-7	DUP-1_11052014	Total/NA	Water	350.1	
680-106992-8	PDMW-8R_11052014	Total/NA	Water	350.1	
680-106992-9	PDMW-10R_11052014	Total/NA	Water	350.1	
680-106992-10	PDMW-13P_11052014	Total/NA	Water	350.1	
680-106992-11	DUP-2_11052014	Total/NA	Water	350.1	
LCS 680-358344/38	Lab Control Sample	Total/NA	Water	350.1	
MB 680-358344/39	Method Blank	Total/NA	Water	350.1	

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: PDMW-40R_11052014

Date Collected: 11/05/14 09:30

Date Received: 11/06/14 09:55

Lab Sample ID: 680-106992-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			250.5 mL	0.5 mL	357797	11/10/14 15:53	RBS	TAL SAV
Total/NA	Analysis	8270D		1	250.5 mL	0.5 mL	357998	11/11/14 18:25	LEG	TAL SAV
		Instrument ID: CMSE								
Total/NA	Analysis	350.1		50	2 mL	2 mL	358344	11/12/14 11:50	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357378	11/06/14 16:04	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: MW-204_11052014

Date Collected: 11/05/14 09:20

Date Received: 11/06/14 09:55

Lab Sample ID: 680-106992-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			247 mL	0.5 mL	357797	11/10/14 15:53	RBS	TAL SAV
Total/NA	Analysis	8270D		1	247 mL	0.5 mL	357998	11/11/14 18:51	LEG	TAL SAV
		Instrument ID: CMSE								
Total/NA	Analysis	350.1		500	2 mL	2 mL	358344	11/12/14 11:30	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357378	11/06/14 16:06	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-23R_11052014

Date Collected: 11/05/14 10:35

Date Received: 11/06/14 09:55

Lab Sample ID: 680-106992-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	358064	11/11/14 10:47	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358678	11/13/14 19:45	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	358344	11/12/14 11:30	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357378	11/06/14 15:40	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: MW-3R_11052014

Date Collected: 11/05/14 14:48

Date Received: 11/06/14 09:55

Lab Sample ID: 680-106992-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	358064	11/11/14 10:47	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358678	11/13/14 20:15	BCB	TAL SAV
		Instrument ID: ICPE								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: MW-3R_11052014

Lab Sample ID: 680-106992-4

Date Collected: 11/05/14 14:48

Matrix: Water

Date Received: 11/06/14 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		5	2 mL	2 mL	358344	11/11/14 21:00	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357378	11/06/14 16:07	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-24T_11052014

Lab Sample ID: 680-106992-5

Date Collected: 11/05/14 17:07

Matrix: Water

Date Received: 11/06/14 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	358110	11/11/14 14:28	SP	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	358681	11/13/14 17:52	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Prep	3010A			50 mL	50 mL	358064	11/11/14 10:47	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358678	11/13/14 20:19	BCB	TAL SAV
		Instrument ID: ICPE								

Client Sample ID: TMW-1_11052014

Lab Sample ID: 680-106992-6

Date Collected: 11/05/14 15:20

Matrix: Water

Date Received: 11/06/14 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	5 mL	5 mL	357980	11/11/14 14:01	CAR	TAL SAV
		Instrument ID: CMSB								
Total/NA	Prep	3520C			259 mL	0.5 mL	357797	11/10/14 15:53	RBS	TAL SAV
Total/NA	Analysis	8270D		1	259 mL	0.5 mL	358569	11/13/14 20:43	LEG	TAL SAV
		Instrument ID: CMST								
Total/NA	Prep	3010A			50 mL	50 mL	358284	11/12/14 10:58	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358681	11/13/14 13:15	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		5000	2 mL	2 mL	358344	11/12/14 12:35	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		500	2 mL	2 mL	357378	11/06/14 15:44	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: DUP-1_11052014

Lab Sample ID: 680-106992-7

Date Collected: 11/05/14 00:00

Matrix: Water

Date Received: 11/06/14 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	5 mL	5 mL	357980	11/11/14 14:23	CAR	TAL SAV
		Instrument ID: CMSB								
Total/NA	Prep	3520C			254 mL	0.5 mL	357797	11/10/14 15:53	RBS	TAL SAV

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: DUP-1_11052014

Date Collected: 11/05/14 00:00

Date Received: 11/06/14 09:55

Lab Sample ID: 680-106992-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270D		1	254 mL	0.5 mL	358569	11/13/14 21:08	LEG	TAL SAV
		Instrument ID: CMST								
Total/NA	Prep	3010A			50 mL	50 mL	358284	11/12/14 10:58	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358681	11/13/14 13:37	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		2000	2 mL	2 mL	358344	11/12/14 12:09	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		500	2 mL	2 mL	357378	11/06/14 15:56	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-8R_11052014

Date Collected: 11/05/14 10:25

Date Received: 11/06/14 09:55

Lab Sample ID: 680-106992-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	358064	11/11/14 10:47	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358678	11/13/14 20:23	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		50	2 mL	2 mL	358344	11/11/14 21:00	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357378	11/06/14 16:08	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-10R_11052014

Date Collected: 11/05/14 11:15

Date Received: 11/06/14 09:55

Lab Sample ID: 680-106992-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	358064	11/11/14 10:47	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358678	11/13/14 20:28	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	358344	11/11/14 21:00	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357378	11/06/14 16:09	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-13P_11052014

Date Collected: 11/05/14 13:50

Date Received: 11/06/14 09:55

Lab Sample ID: 680-106992-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	358110	11/11/14 14:28	SP	TAL SAV

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Client Sample ID: PDMW-13P_11052014

Lab Sample ID: 680-106992-10

Date Collected: 11/05/14 13:50

Matrix: Water

Date Received: 11/06/14 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	6010C		1	50 mL	50 mL	358681	11/13/14 17:56	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Prep	3010A			50 mL	50 mL	358064	11/11/14 10:47	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358678	11/13/14 20:32	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	358344	11/12/14 11:21	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357378	11/06/14 16:12	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: DUP-2_11052014

Lab Sample ID: 680-106992-11

Date Collected: 11/05/14 00:00

Matrix: Water

Date Received: 11/06/14 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	358110	11/11/14 14:28	SP	TAL SAV
Dissolved	Analysis	6010C		1	50 mL	50 mL	358681	11/13/14 18:00	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Prep	3010A			50 mL	50 mL	358064	11/11/14 10:47	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358678	11/13/14 20:36	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		2	2 mL	2 mL	358344	11/12/14 12:00	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357378	11/06/14 16:13	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: TRIP-BLANK_11052014

Lab Sample ID: 680-106992-12

Date Collected: 11/05/14 00:00

Matrix: Water

Date Received: 11/06/14 09:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	357980	11/11/14 16:51	CAR	TAL SAV
		Instrument ID: CMSB								

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah

Certification Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-15

1

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3

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12

Method Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-106992-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

		LABORATORY INFORMATION		COC #	
		TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165 <input type="checkbox"/> TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772 <input type="checkbox"/> TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049 <input type="checkbox"/> TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671 <input type="checkbox"/> TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991 <input type="checkbox"/> TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211		SHIPMENT INFORMATION Shipment Method: <u>Lab Courier</u> Shipment Tracking No:	
CSXT PROJECT INFORMATION		CONSULTANT INFORMATION		Project #	
CSXT Project Number: <u>9415575</u>		Company: <u>Amee E&I</u>		PM: <u>Pat Harrison</u>	
CSXT Project Name: <u>Hutchinson Island</u>		Address: <u>3800 Ezell Rd, Ste 100</u>		Email: <u>pat.harrison@amee.com</u>	
CSXT Contact: <u>Sam Ross</u>		City, State, Zip: <u>Savannah, GA 30458</u>		Phone: <u>678-658-1374</u>	
Turnaround Time: <input type="checkbox"/> Standard 6-13 Days <input type="checkbox"/> 1 Day Rush <input type="checkbox"/> 2 Day Rush <input checked="" type="checkbox"/> Standard 14 Days <input type="checkbox"/> 3 Day Rush <input type="checkbox"/> Other		Preservative Codes: 3 = Sulfuric Acid 0 = No Preservatives 4 = Sodium Thiosulfate 1 = Hydrochloric Acid 5 = Sodium Hydroxide 2 = Nitric Acid 6 = Other		Note: <u>330A</u>	
Deliverables: <input type="checkbox"/> Other Deliv: _____ <input checked="" type="checkbox"/> CSXT Standard (Level II) <input type="checkbox"/> Level III <input type="checkbox"/> EDD Required, Format: _____ <input type="checkbox"/> Level IV		Matrix Codes: SO = Soil LIQ = Liquid GW = Groundwater SL = Sludge WW = Waste Water OI = Oil SW = Surface Water SOL = Other Solid		Barcode:	
SAMPLE INFORMATION					
Sample Identification		Sample Collection		Matrix	
Containers Number & Type	Date	Time	Sampler	Filtered Y or N	Type Comp or Grab
PDMW-40R-11052014 3 POLY 2 AMBER	11/5/14	0930	JJ	N	G GW
MW-204-11052014 3 POLY 2 AMBER	11/5/14	0920	PG	N	G GW
PDMW-23R-11052014 12 POLY	11/5/14	1035	JJ	N	G GW
MW-3R-11052014 4 POLY	11/5/14	1448	JJ	N	G GW
PDMW-24T-11052014 2 POLY	11/5/14	1707	JJ	Y	G GW
TMW-1-11052014 27	11/5/14	1520	PG	W	G GW
DUP-1-11052014 9	11/5/14	-	PG	W	G GW
PDMW-8R-11052014 4 POLY	11/5/14	1025	PG	N	G GW
PDMW-10R-11052014 4 POLY	11/5/14	1115	PG	N	G GW
PDMW-13P-11052014 5 POLY	11/5/14	1350	PG	Y	G GW
Relinquished By: <u>Sam Ross</u>		Date/Time: <u>11/6/14 0915</u>		Received By: <u>Mike Chalk</u>	
Relinquished By: <u>Sam Ross</u>		Date/Time: <u>11/6/14 0935</u>		Received By:	
Relinquished By:		Date/Time:		Received By:	
Received By: <u>Sam Ross</u>		Date/Time: <u>11/06/14 0955</u>		Lab Remarks: <u>28c 28c</u>	

Comments & Special Analytical Requirements:
 Total and Dissolved Pb for PDMW-24T & PDMW-13P were filtered in field. Analyzed PDMW-24T for total & diss. Pb only.

Custody Seal # 680-106992
 LAB Log Number 680-106992

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC



CHAIN OF CUSTODY

LABORATORY INFORMATION

☒ TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-352-7858 F: 912-352-0165
☐ TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772
☐ TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049
☐ TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671
☐ TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991
☐ TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

CSXT PROJECT INFORMATION

CSXT Project Number: **9415575**

CSXT Project Name: **Hutchinson Island**

CSXT Contact: **Sam Ross**

CONSULTANT INFORMATION

Proj. State (State of Origin): **GA**

Proj. City: **Savannah**

Company: **AmeC E&I**

Address: **3800 Ezell Rd, Ste 100**

City, State, Zip: **Nashville, TN 37211**

Phone: **(615) 658-1374**

Fax: **(615) 658-1374**

SHIPMENT INFORMATION

Project #: **6-4300-5244**

PM: **Pat Harrison**

Email: **pat.harrison@amec.com**

Shipment Method: **Lab Courier**

Shipment Tracking No:

COC

SHIPMENT INFORMATION

Shipment Method: **Lab Courier**

Shipment Tracking No:

Turnaround Time:
☐ Standard 6-13 Days
☐ Specify # Days
☒ Standard 14 Days
☐ Other

Deliverables:
☒ CSXT Standard (Level II)
☐ Level III
☐ EDD Required, Format:
☐ Level IV

Preservative Codes:
0 = No Preservatives
1 = Hydrochloric Acid
2 = Nitric Acid
3 = Sulfuric Acid
4 = Sodium Thiosulfate
5 = Sodium Hydroxide
6 = Other

Matrix Codes:
GW = Groundwater
WW = Waste Water
SW = Surface Water
SO = Soil
SL = Sludge
OI = Oil
SOL = Other Solid

METHODS FOR ANALYSIS

Note

Pres.

Code

Ammonia

Nitrate

Total Pb

Dissolved Pb

Ni

Zn

BTEX

SAMPLE INFORMATION

Sample Identification

Containers Number & Type

Date

Time

Sampler

Filtered Y or N

Type

Comp or Grab

Matrix Code

DUP-2-11052014

TRIP-BLANK-11052014

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Date/Time: 11/6/14 7:45

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Date/Time: 11/6/14 07:45

Date/Time: 11/6/14 07:45

Comments & Special Analytical Requirements:

Dissolved Pb for

DUP-2 was filtered

in field.

</

Login Sample Receipt Checklist

Client: AMEC Environment & Infrastructure, Inc.

Job Number: 680-106992-1

Login Number: 106992

List Source: TestAmerica Savannah

List Number: 1

Creator: Kicklighter, Marilyn D

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-107032-1

Client Project/Site: CSX Hutchinson Island VRP

For:

AMEC Environment & Infrastructure, Inc.

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Mr. Steve Foley



Authorized for release by:

11/18/2014 4:41:39 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

LINKS

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results through

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Job ID: 680-107032-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Environment & Infrastructure, Inc.

Project: CSX Hutchinson Island VRP

Report Number: 680-107032-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

RECEIPT

The samples were received on 11/7/2014 8:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 4.6° C and 5.0° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples FB-01_11062014 (680-107032-16), ERB-01_11062014 (680-107032-17) and TRIP-BLANK_11062014 (680-107032-19) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples FB-01_11062014 (680-107032-16), ERB-01_11062014 (680-107032-17) and ERB-02_11062014 (680-107032-18) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D.

Method(s) 8270D: Six surrogates are used for this analysis. The laboratory's SOP allows 2 of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample(s) contained an allowable number of surrogate compounds outside limits: FB-01_11062014 (680-107032-16). These results have been reported and qualified.

METALS (ICP)

Samples PDMW-29D_11062014 (680-107032-12), PDMW-26T_11062014 (680-107032-13), DUP-03_11062014 (680-107032-14), PDMW-32R_11062014 (680-107032-15), FB-01_11062014 (680-107032-16), ERB-01_11062014 (680-107032-17) and ERB-02_11062014 (680-107032-18) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C.

ALKALINITY

Samples SW-01_11062014_HIGH (680-107032-1), SW-02_11062014_HIGH (680-107032-2), SW-03_11062014_HIGH (680-107032-3), SW-04_11062014_HIGH (680-107032-4), SW-01_11062014_LOW (680-107032-5), SW-02_11062014_LOW (680-107032-6), SW-03_11062014_LOW (680-107032-7) and SW-04_11062014_LOW (680-107032-8) were analyzed for alkalinity in accordance with EPA Method 310.1.

AMMONIA

Samples SW-01_11062014_HIGH (680-107032-1), SW-02_11062014_HIGH (680-107032-2), SW-03_11062014_HIGH (680-107032-3), SW-04_11062014_HIGH (680-107032-4), SW-01_11062014_LOW (680-107032-5), SW-02_11062014_LOW (680-107032-6), SW-03_11062014_LOW (680-107032-7), SW-04_11062014_LOW (680-107032-8), PDMW-51_11062014 (680-107032-9), PDMW-52_11062014 (680-107032-10), PDMW-50_11062014 (680-107032-11), PDMW-29D_11062014 (680-107032-12), PDMW-26T_11062014 (680-107032-13), DUP-03_11062014 (680-107032-14), PDMW-32R_11062014 (680-107032-15), FB-01_11062014 (680-107032-16), ERB-01_11062014 (680-107032-17) and ERB-02_11062014 (680-107032-18) were analyzed for ammonia in accordance with EPA Method 350.1.

Ammonia recovery is outside criteria high for the MS and MSD of sample PDMW-52_11062014 (680-107032-10) in batch 680-359110. Refer to the QC report for details.

Samples PDMW-51_11062014 (680-107032-9)[5X], PDMW-52_11062014 (680-107032-10)[2X], PDMW-50_11062014 (680-107032-11)[10X], PDMW-29D_11062014 (680-107032-12)[10X], PDMW-26T_11062014 (680-107032-13)[500X], DUP-03_11062014

Case Narrative

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Job ID: 680-107032-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

(680-107032-14)[500X] and PDMW-32R_11062014 (680-107032-15)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

NITRATE-NITRITE AS NITROGEN

Samples SW-01_11062014_HIGH (680-107032-1), SW-02_11062014_HIGH (680-107032-2), SW-03_11062014_HIGH (680-107032-3), SW-04_11062014_HIGH (680-107032-4), SW-01_11062014_LOW (680-107032-5), SW-02_11062014_LOW (680-107032-6), SW-03_11062014_LOW (680-107032-7), SW-04_11062014_LOW (680-107032-8), PDMW-51_11062014 (680-107032-9), PDMW-52_11062014 (680-107032-10), PDMW-50_11062014 (680-107032-11), PDMW-29D_11062014 (680-107032-12), PDMW-26T_11062014 (680-107032-13), DUP-03_11062014 (680-107032-14), PDMW-32R_11062014 (680-107032-15), FB-01_11062014 (680-107032-16), ERB-01_11062014 (680-107032-17) and ERB-02_11062014 (680-107032-18) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2.

Definitions/Glossary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-107032-1	SW-01_11062014_HIGH	Water	11/06/14 09:25	11/07/14 08:30
680-107032-2	SW-02_11062014_HIGH	Water	11/06/14 09:50	11/07/14 08:30
680-107032-3	SW-03_11062014_HIGH	Water	11/06/14 09:45	11/07/14 08:30
680-107032-4	SW-04_11062014_HIGH	Water	11/06/14 09:20	11/07/14 08:30
680-107032-5	SW-01_11062014_LOW	Water	11/06/14 13:45	11/07/14 08:30
680-107032-6	SW-02_11062014_LOW	Water	11/06/14 14:28	11/07/14 08:30
680-107032-7	SW-03_11062014_LOW	Water	11/06/14 14:35	11/07/14 08:30
680-107032-8	SW-04_11062014_LOW	Water	11/06/14 14:15	11/07/14 08:30
680-107032-9	PDMW-51_11062014	Water	11/06/14 10:35	11/07/14 08:30
680-107032-10	PDMW-52_11062014	Water	11/06/14 11:45	11/07/14 08:30
680-107032-11	PDMW-50_11062014	Water	11/06/14 10:51	11/07/14 08:30
680-107032-12	PDMW-29D_11062014	Water	11/06/14 15:37	11/07/14 08:30
680-107032-13	PDMW-26T_11062014	Water	11/06/14 16:53	11/07/14 08:30
680-107032-14	DUP-03_11062014	Water	11/06/14 00:00	11/07/14 08:30
680-107032-15	PDMW-32R_11062014	Water	11/06/14 15:30	11/07/14 08:30
680-107032-16	FB-01_11062014	Water	11/06/14 16:45	11/07/14 08:30
680-107032-17	ERB-01_11062014	Water	11/06/14 17:00	11/07/14 08:30
680-107032-18	ERB-02_11062014	Water	11/06/14 17:20	11/07/14 08:30
680-107032-19	TRIP-BLANK_11062014	Water	11/06/14 00:00	11/07/14 08:30

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: SW-01_11062014_HIGH

Lab Sample ID: 680-107032-1

Date Collected: 11/06/14 09:25

Matrix: Water

Date Received: 11/07/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.16		0.050		mg/L			11/15/14 13:03	1
Nitrate as N	0.25		0.050		mg/L			11/07/14 11:44	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	62		5.0		mg/L			11/13/14 17:01	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: SW-02_11062014_HIGH

Lab Sample ID: 680-107032-2

Date Collected: 11/06/14 09:50

Matrix: Water

Date Received: 11/07/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.20		0.050		mg/L			11/15/14 13:03	1
Nitrate as N	0.24		0.050		mg/L			11/07/14 11:48	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	62		5.0		mg/L			11/13/14 16:54	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: SW-03_11062014_HIGH

Lab Sample ID: 680-107032-3

Date Collected: 11/06/14 09:45

Matrix: Water

Date Received: 11/07/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.22		0.050		mg/L			11/15/14 13:03	1
Nitrate as N	0.25		0.050		mg/L			11/07/14 11:50	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	60		5.0		mg/L			11/13/14 16:40	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: SW-04_11062014_HIGH

Lab Sample ID: 680-107032-4

Date Collected: 11/06/14 09:20

Matrix: Water

Date Received: 11/07/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.16		0.050		mg/L			11/15/14 13:13	1
Nitrate as N	0.24		0.050		mg/L			11/07/14 11:54	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	58		5.0		mg/L			11/13/14 17:16	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: SW-01_11062014_LOW

Lab Sample ID: 680-107032-5

Date Collected: 11/06/14 13:45

Matrix: Water

Date Received: 11/07/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.29		0.050		mg/L			11/15/14 13:13	1
Nitrate as N	0.12		0.050		mg/L			11/07/14 11:55	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	88		5.0		mg/L			11/13/14 16:48	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: SW-02_11062014_LOW

Lab Sample ID: 680-107032-6

Date Collected: 11/06/14 14:28

Matrix: Water

Date Received: 11/07/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.40		0.050		mg/L			11/15/14 13:35	1
Nitrate as N	0.085		0.050		mg/L			11/07/14 11:56	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	87		5.0		mg/L			11/15/14 18:40	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: SW-03_11062014_LOW

Lab Sample ID: 680-107032-7

Date Collected: 11/06/14 14:35

Matrix: Water

Date Received: 11/07/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.19		0.050		mg/L			11/15/14 13:35	1
Nitrate as N	0.083		0.050		mg/L			11/07/14 12:00	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	100		5.0		mg/L			11/15/14 18:48	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: SW-04_11062014_LOW

Lab Sample ID: 680-107032-8

Date Collected: 11/06/14 14:15

Matrix: Water

Date Received: 11/07/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.13		0.050		mg/L			11/15/14 13:35	1
Nitrate as N	0.078		0.050		mg/L			11/07/14 12:01	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	84		5.0		mg/L			11/15/14 17:05	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: PDMW-51_11062014

Lab Sample ID: 680-107032-9

Date Collected: 11/06/14 10:35

Matrix: Water

Date Received: 11/07/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	5.7		0.25		mg/L			11/15/14 13:44	5
Nitrate as N	0.050	U	0.050		mg/L			11/07/14 12:02	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: PDMW-52_11062014

Lab Sample ID: 680-107032-10

Date Collected: 11/06/14 11:45

Matrix: Water

Date Received: 11/07/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.90		0.10		mg/L			11/15/14 13:30	2
Nitrate as N	0.050	U	0.050		mg/L			11/07/14 12:03	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: PDMW-50_11062014

Lab Sample ID: 680-107032-11

Date Collected: 11/06/14 10:51

Matrix: Water

Date Received: 11/07/14 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	7.7		0.50		mg/L			11/15/14 13:44	10
Nitrate as N	0.050	U	0.050		mg/L			11/07/14 12:05	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: PDMW-29D_11062014

Lab Sample ID: 680-107032-12

Date Collected: 11/06/14 15:37

Matrix: Water

Date Received: 11/07/14 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/11/14 10:47	11/13/14 21:28	1
Lead	10	U	10		ug/L		11/11/14 10:47	11/13/14 21:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	10		0.50		mg/L			11/15/14 13:44	10
Nitrate as N	0.050	U	0.050		mg/L			11/07/14 12:08	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: PDMW-26T_11062014

Lab Sample ID: 680-107032-13

Date Collected: 11/06/14 16:53

Matrix: Water

Date Received: 11/07/14 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/11/14 10:47	11/13/14 21:32	1
Lead	10	U	10		ug/L		11/11/14 10:47	11/13/14 21:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	470		25		mg/L			11/15/14 14:33	500
Nitrate as N	0.051		0.050		mg/L			11/07/14 12:09	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: DUP-03_11062014

Lab Sample ID: 680-107032-14

Date Collected: 11/06/14 00:00

Matrix: Water

Date Received: 11/07/14 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/11/14 10:47	11/13/14 21:36	1
Lead	10	U	10		ug/L		11/11/14 10:47	11/13/14 21:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	490		25		mg/L			11/15/14 14:33	500
Nitrate as N	0.070		0.050		mg/L			11/07/14 12:10	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: PDMW-32R_11062014

Lab Sample ID: 680-107032-15

Date Collected: 11/06/14 15:30

Matrix: Water

Date Received: 11/07/14 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/11/14 10:47	11/13/14 21:41	1
Nickel	40	U	40		ug/L		11/11/14 10:47	11/13/14 21:41	1
Lead	10	U	10		ug/L		11/11/14 10:47	11/13/14 21:41	1
Zinc	210		20		ug/L		11/11/14 10:47	11/13/14 21:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	7.0		0.25		mg/L			11/15/14 13:52	5
Nitrate as N	0.050	U	0.050		mg/L			11/07/14 12:12	1

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: FB-01_11062014

Lab Sample ID: 680-107032-16

Date Collected: 11/06/14 16:45

Matrix: Water

Date Received: 11/07/14 08:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/11/14 15:47	1
Ethylbenzene	1.0	U	1.0		ug/L			11/11/14 15:47	1
Toluene	1.0	U	1.0		ug/L			11/11/14 15:47	1
Xylenes, Total	2.0	U	2.0		ug/L			11/11/14 15:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		70 - 130					11/11/14 15:47	1
1,2-Dichloroethane-d4 (Surr)	82		70 - 130					11/11/14 15:47	1
Dibromofluoromethane (Surr)	90		70 - 130					11/11/14 15:47	1
4-Bromofluorobenzene (Surr)	126		70 - 130					11/11/14 15:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Acenaphthylene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Anthracene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Benzo[a]anthracene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Benzo[a]pyrene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Benzo[b]fluoranthene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Benzo[g,h,i]perylene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Benzo[k]fluoranthene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Chrysene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Dibenz[a,h]anthracene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Fluoranthene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Fluorene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Indeno[1,2,3-cd]pyrene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
1-Methylnaphthalene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
2-Methylnaphthalene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Naphthalene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Phenanthrene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Pyrene	9.6	U	9.6		ug/L		11/10/14 15:53	11/13/14 21:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	38		32 - 114				11/10/14 15:53	11/13/14 21:32	1
Nitrobenzene-d5 (Surr)	24	X	30 - 117				11/10/14 15:53	11/13/14 21:32	1
Terphenyl-d14 (Surr)	98		10 - 132				11/10/14 15:53	11/13/14 21:32	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/12/14 10:58	11/13/14 13:42	1
Chromium	10	U	10		ug/L		11/12/14 10:58	11/13/14 13:42	1
Lead	10	U	10		ug/L		11/12/14 10:58	11/13/14 13:42	1
Nickel	40	U	40		ug/L		11/12/14 10:58	11/13/14 13:42	1
Zinc	66		20		ug/L		11/12/14 10:58	11/13/14 13:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.050	U	0.050		mg/L			11/15/14 13:03	1
Nitrate as N	0.17		0.050		mg/L			11/07/14 12:13	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: ERB-01_11062014

Lab Sample ID: 680-107032-17

Date Collected: 11/06/14 17:00

Matrix: Water

Date Received: 11/07/14 08:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/11/14 16:09	1
Ethylbenzene	1.0	U	1.0		ug/L			11/11/14 16:09	1
Toluene	1.0	U	1.0		ug/L			11/11/14 16:09	1
Xylenes, Total	2.0	U	2.0		ug/L			11/11/14 16:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130		11/11/14 16:09	1
1,2-Dichloroethane-d4 (Surr)	85		70 - 130		11/11/14 16:09	1
Dibromofluoromethane (Surr)	92		70 - 130		11/11/14 16:09	1
4-Bromofluorobenzene (Surr)	125		70 - 130		11/11/14 16:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Acenaphthylene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Anthracene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Benzo[a]anthracene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Benzo[a]pyrene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Benzo[b]fluoranthene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Benzo[g,h,i]perylene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Benzo[k]fluoranthene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Chrysene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Dibenz[a,h]anthracene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Fluoranthene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Fluorene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Indeno[1,2,3-cd]pyrene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
1-Methylnaphthalene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
2-Methylnaphthalene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Naphthalene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Phenanthrene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1
Pyrene	9.8	U	9.8		ug/L		11/10/14 15:53	11/13/14 21:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	51		32 - 114	11/10/14 15:53	11/13/14 21:56	1
Nitrobenzene-d5 (Surr)	35		30 - 117	11/10/14 15:53	11/13/14 21:56	1
Terphenyl-d14 (Surr)	107		10 - 132	11/10/14 15:53	11/13/14 21:56	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/12/14 10:58	11/13/14 13:46	1
Chromium	10	U	10		ug/L		11/12/14 10:58	11/13/14 13:46	1
Lead	10	U	10		ug/L		11/12/14 10:58	11/13/14 13:46	1
Nickel	40	U	40		ug/L		11/12/14 10:58	11/13/14 13:46	1
Zinc	61		20		ug/L		11/12/14 10:58	11/13/14 13:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.083		0.050		mg/L			11/15/14 13:21	1
Nitrate as N	0.17		0.050		mg/L			11/07/14 12:14	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: ERB-02_11062014

Lab Sample ID: 680-107032-18

Date Collected: 11/06/14 17:20

Matrix: Water

Date Received: 11/07/14 08:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Acenaphthylene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Anthracene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Benzo[a]anthracene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Benzo[a]pyrene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Benzo[b]fluoranthene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Benzo[g,h,i]perylene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Benzo[k]fluoranthene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Chrysene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Dibenz[a,h]anthracene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Fluoranthene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Fluorene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Indeno[1,2,3-cd]pyrene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
1-Methylnaphthalene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
2-Methylnaphthalene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Naphthalene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Phenanthrene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1
Pyrene	9.5	U	9.5		ug/L		11/10/14 15:53	11/13/14 22:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	55		32 - 114	11/10/14 15:53	11/13/14 22:20	1
Nitrobenzene-d5 (Surr)	50		30 - 117	11/10/14 15:53	11/13/14 22:20	1
Terphenyl-d14 (Surr)	104		10 - 132	11/10/14 15:53	11/13/14 22:20	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/12/14 10:58	11/13/14 13:59	1
Chromium	10	U	10		ug/L		11/12/14 10:58	11/13/14 13:59	1
Lead	10	U	10		ug/L		11/12/14 10:58	11/13/14 13:59	1
Nickel	40	U	40		ug/L		11/12/14 10:58	11/13/14 13:59	1
Zinc	53		20		ug/L		11/12/14 10:58	11/13/14 13:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.052		0.050		mg/L			11/15/14 13:03	1
Nitrate as N	0.17		0.050		mg/L			11/07/14 12:15	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: TRIP-BLANK_11062014

Lab Sample ID: 680-107032-19

Date Collected: 11/06/14 00:00

Matrix: Water

Date Received: 11/07/14 08:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/11/14 16:30	1
Ethylbenzene	1.0	U	1.0		ug/L			11/11/14 16:30	1
Toluene	1.0	U	1.0		ug/L			11/11/14 16:30	1
Xylenes, Total	2.0	U	2.0		ug/L			11/11/14 16:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		11/11/14 16:30	1
1,2-Dichloroethane-d4 (Surr)	84		70 - 130		11/11/14 16:30	1
Dibromofluoromethane (Surr)	89		70 - 130		11/11/14 16:30	1
4-Bromofluorobenzene (Surr)	127		70 - 130		11/11/14 16:30	1

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-357980/7

Matrix: Water

Analysis Batch: 357980

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/11/14 11:40	1
Ethylbenzene	1.0	U	1.0		ug/L			11/11/14 11:40	1
Toluene	1.0	U	1.0		ug/L			11/11/14 11:40	1
Xylenes, Total	2.0	U	2.0		ug/L			11/11/14 11:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		11/11/14 11:40	1
1,2-Dichloroethane-d4 (Surr)	82		70 - 130		11/11/14 11:40	1
Dibromofluoromethane (Surr)	99		70 - 130		11/11/14 11:40	1
4-Bromofluorobenzene (Surr)	124		70 - 130		11/11/14 11:40	1

Lab Sample ID: LCS 680-357980/3

Matrix: Water

Analysis Batch: 357980

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	51.5		ug/L		103	74 - 123
Ethylbenzene	50.0	50.1		ug/L		100	78 - 125
Toluene	50.0	49.9		ug/L		100	77 - 125
Xylenes, Total	100	104		ug/L		104	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		70 - 130
1,2-Dichloroethane-d4 (Surr)	105		70 - 130
Dibromofluoromethane (Surr)	103		70 - 130
4-Bromofluorobenzene (Surr)	109		70 - 130

Lab Sample ID: LCSD 680-357980/4

Matrix: Water

Analysis Batch: 357980

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	51.8		ug/L		104	74 - 123	1	30
Ethylbenzene	50.0	51.2		ug/L		102	78 - 125	2	30
Toluene	50.0	49.7		ug/L		99	77 - 125	0	30
Xylenes, Total	100	107		ug/L		107	80 - 124	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	106		70 - 130
1,2-Dichloroethane-d4 (Surr)	105		70 - 130
Dibromofluoromethane (Surr)	104		70 - 130
4-Bromofluorobenzene (Surr)	108		70 - 130

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

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

Lab Sample ID: MB 680-357797/10-A

Matrix: Water

Analysis Batch: 358569

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 357797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Acenaphthylene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Anthracene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Benzo[a]anthracene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Benzo[a]pyrene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Benzo[b]fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Benzo[g,h,i]perylene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Benzo[k]fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Chrysene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Dibenz(a,h)anthracene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Fluoranthene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Fluorene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
1-Methylnaphthalene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
2-Methylnaphthalene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Naphthalene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Phenanthrene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1
Pyrene	10	U	10		ug/L		11/10/14 15:53	11/13/14 19:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	65		32 - 114	11/10/14 15:53	11/13/14 19:55	1
Nitrobenzene-d5 (Surr)	60		30 - 117	11/10/14 15:53	11/13/14 19:55	1
Terphenyl-d14 (Surr)	109		10 - 132	11/10/14 15:53	11/13/14 19:55	1

Lab Sample ID: LCS 680-357797/11-A

Matrix: Water

Analysis Batch: 357998

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 357797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	59.3		ug/L		59	32 - 107
Acenaphthylene	100	60.3		ug/L		60	10 - 119
Anthracene	100	66.1		ug/L		66	38 - 112
Benzo[a]anthracene	100	66.5		ug/L		66	36 - 115
Benzo[a]pyrene	100	65.3		ug/L		65	13 - 120
Benzo[b]fluoranthene	100	65.4		ug/L		65	32 - 117
Benzo[g,h,i]perylene	100	62.4		ug/L		62	21 - 118
Benzo[k]fluoranthene	100	65.7		ug/L		66	28 - 125
Chrysene	100	65.2		ug/L		65	36 - 113
Dibenz(a,h)anthracene	100	63.5		ug/L		64	32 - 115
Fluoranthene	100	69.8		ug/L		70	41 - 113
Fluorene	100	62.3		ug/L		62	39 - 115
Indeno[1,2,3-cd]pyrene	100	56.4		ug/L		56	16 - 119
1-Methylnaphthalene	100	53.9		ug/L		54	26 - 94
2-Methylnaphthalene	100	54.4		ug/L		54	24 - 92
Naphthalene	100	50.5		ug/L		50	24 - 85
Phenanthrene	100	65.1		ug/L		65	40 - 114
Pyrene	100	66.6		ug/L		67	29 - 118

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

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

Lab Sample ID: LCS 680-357797/11-A

Matrix: Water

Analysis Batch: 357998

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 357797

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	58		32 - 114
Nitrobenzene-d5 (Surr)	60		30 - 117
Terphenyl-d14 (Surr)	91		10 - 132

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-358064/1-A

Matrix: Water

Analysis Batch: 358678

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358064

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/11/14 10:47	11/13/14 19:36	1
Lead	10	U	10		ug/L		11/11/14 10:47	11/13/14 19:36	1
Nickel	40	U	40		ug/L		11/11/14 10:47	11/13/14 19:36	1
Zinc	20	U	20		ug/L		11/11/14 10:47	11/13/14 19:36	1

Lab Sample ID: LCS 680-358064/2-A

Matrix: Water

Analysis Batch: 358678

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 358064

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	101		ug/L		101	80 - 120
Lead	500	492		ug/L		98	80 - 120
Nickel	100	101		ug/L		101	80 - 120
Zinc	100	104		ug/L		104	80 - 120

Lab Sample ID: MB 680-358284/1-A

Matrix: Water

Analysis Batch: 358681

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358284

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/12/14 10:58	11/13/14 13:06	1
Chromium	10	U	10		ug/L		11/12/14 10:58	11/13/14 13:06	1
Lead	10	U	10		ug/L		11/12/14 10:58	11/13/14 13:06	1
Nickel	40	U	40		ug/L		11/12/14 10:58	11/13/14 13:06	1
Zinc	20	U	20		ug/L		11/12/14 10:58	11/13/14 13:06	1

Lab Sample ID: LCS 680-358284/2-A

Matrix: Water

Analysis Batch: 358681

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 358284

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	97.9		ug/L		98	80 - 120
Chromium	100	101		ug/L		101	80 - 120
Lead	500	488		ug/L		98	80 - 120
Nickel	100	99.9		ug/L		100	80 - 120
Zinc	100	101		ug/L		101	80 - 120

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-358636/5

Matrix: Water

Analysis Batch: 358636

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			11/13/14 15:10	1

Lab Sample ID: LCS 680-358636/6

Matrix: Water

Analysis Batch: 358636

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	236		mg/L		94	80 - 120

Lab Sample ID: LCSD 680-358636/32

Matrix: Water

Analysis Batch: 358636

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	228		mg/L		91	80 - 120	3	30

Lab Sample ID: 680-107032-4 DU

Matrix: Water

Analysis Batch: 358636

Client Sample ID: SW-04_11062014_HIGH

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	58		59.9		mg/L		3	30

Lab Sample ID: MB 680-358981/5

Matrix: Water

Analysis Batch: 358981

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			11/15/14 16:11	1

Lab Sample ID: LCS 680-358981/6

Matrix: Water

Analysis Batch: 358981

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	246		mg/L		98	80 - 120

Lab Sample ID: LCSD 680-358981/30

Matrix: Water

Analysis Batch: 358981

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	252		mg/L		101	80 - 120	2	30

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-359110/11

Matrix: Water

Analysis Batch: 359110

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.050	U	0.050		mg/L			11/15/14 13:13	1

Lab Sample ID: LCS 680-359110/24

Matrix: Water

Analysis Batch: 359110

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.00		mg/L		100	90 - 110

Lab Sample ID: 680-107032-10 MS

Matrix: Water

Analysis Batch: 359110

Client Sample ID: PDMW-52_11062014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.90		1.00	2.33	F1	mg/L		144	90 - 110

Lab Sample ID: 680-107032-10 MSD

Matrix: Water

Analysis Batch: 359110

Client Sample ID: PDMW-52_11062014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	0.90		1.00	2.40	F1	mg/L		150	90 - 110	3	30

Lab Sample ID: 680-107032-18 DU

Matrix: Water

Analysis Batch: 359110

Client Sample ID: ERB-02_11062014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ammonia	0.052		0.050	U	mg/L		NC	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-357560/13

Matrix: Water

Analysis Batch: 357560

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			11/07/14 11:39	1

Lab Sample ID: LCS 680-357560/16

Matrix: Water

Analysis Batch: 357560

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.474		mg/L		95	75 - 125

TestAmerica Savannah

QC Sample Results

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: 680-107032-1 MS

Matrix: Water

Analysis Batch: 357560

Client Sample ID: SW-01_11062014_HIGH

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.25		0.500	0.690		mg/L		87	75 - 125

Lab Sample ID: 680-107032-1 MSD

Matrix: Water

Analysis Batch: 357560

Client Sample ID: SW-01_11062014_HIGH

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.25		0.500	0.691		mg/L		87	75 - 125	0	30

Lab Sample ID: 680-107032-2 DU

Matrix: Water

Analysis Batch: 357560

Client Sample ID: SW-02_11062014_HIGH

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	0.24		0.237		mg/L		2	30

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

GC/MS VOA

Analysis Batch: 357980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-107032-16	FB-01_11062014	Total/NA	Water	8260B	
680-107032-17	ERB-01_11062014	Total/NA	Water	8260B	
680-107032-19	TRIP-BLANK_11062014	Total/NA	Water	8260B	
LCS 680-357980/3	Lab Control Sample	Total/NA	Water	8260B	
LCS 680-357980/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-357980/7	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 357797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-107032-16	FB-01_11062014	Total/NA	Water	3520C	
680-107032-17	ERB-01_11062014	Total/NA	Water	3520C	
680-107032-18	ERB-02_11062014	Total/NA	Water	3520C	
LCS 680-357797/11-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-357797/10-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 357998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-357797/11-A	Lab Control Sample	Total/NA	Water	8270D	357797

Analysis Batch: 358569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-107032-16	FB-01_11062014	Total/NA	Water	8270D	357797
680-107032-17	ERB-01_11062014	Total/NA	Water	8270D	357797
680-107032-18	ERB-02_11062014	Total/NA	Water	8270D	357797
MB 680-357797/10-A	Method Blank	Total/NA	Water	8270D	357797

Metals

Prep Batch: 358064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-107032-12	PDMW-29D_11062014	Total/NA	Water	3010A	
680-107032-13	PDMW-26T_11062014	Total/NA	Water	3010A	
680-107032-14	DUP-03_11062014	Total/NA	Water	3010A	
680-107032-15	PDMW-32R_11062014	Total/NA	Water	3010A	
LCS 680-358064/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-358064/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 358284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-107032-16	FB-01_11062014	Total/NA	Water	3010A	
680-107032-17	ERB-01_11062014	Total/NA	Water	3010A	
680-107032-18	ERB-02_11062014	Total/NA	Water	3010A	
LCS 680-358284/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-358284/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 358678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-107032-12	PDMW-29D_11062014	Total/NA	Water	6010C	358064

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Metals (Continued)

Analysis Batch: 358678 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-107032-13	PDMW-26T_11062014	Total/NA	Water	6010C	358064
680-107032-14	DUP-03_11062014	Total/NA	Water	6010C	358064
680-107032-15	PDMW-32R_11062014	Total/NA	Water	6010C	358064
LCS 680-358064/2-A	Lab Control Sample	Total/NA	Water	6010C	358064
MB 680-358064/1-A	Method Blank	Total/NA	Water	6010C	358064

Analysis Batch: 358681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-107032-16	FB-01_11062014	Total/NA	Water	6010C	358284
680-107032-17	ERB-01_11062014	Total/NA	Water	6010C	358284
680-107032-18	ERB-02_11062014	Total/NA	Water	6010C	358284
LCS 680-358284/2-A	Lab Control Sample	Total/NA	Water	6010C	358284
MB 680-358284/1-A	Method Blank	Total/NA	Water	6010C	358284

General Chemistry

Analysis Batch: 357560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-107032-1	SW-01_11062014_HIGH	Total/NA	Water	353.2	
680-107032-1 MS	SW-01_11062014_HIGH	Total/NA	Water	353.2	
680-107032-1 MSD	SW-01_11062014_HIGH	Total/NA	Water	353.2	
680-107032-2	SW-02_11062014_HIGH	Total/NA	Water	353.2	
680-107032-2 DU	SW-02_11062014_HIGH	Total/NA	Water	353.2	
680-107032-3	SW-03_11062014_HIGH	Total/NA	Water	353.2	
680-107032-4	SW-04_11062014_HIGH	Total/NA	Water	353.2	
680-107032-5	SW-01_11062014_LOW	Total/NA	Water	353.2	
680-107032-6	SW-02_11062014_LOW	Total/NA	Water	353.2	
680-107032-7	SW-03_11062014_LOW	Total/NA	Water	353.2	
680-107032-8	SW-04_11062014_LOW	Total/NA	Water	353.2	
680-107032-9	PDMW-51_11062014	Total/NA	Water	353.2	
680-107032-10	PDMW-52_11062014	Total/NA	Water	353.2	
680-107032-11	PDMW-50_11062014	Total/NA	Water	353.2	
680-107032-12	PDMW-29D_11062014	Total/NA	Water	353.2	
680-107032-13	PDMW-26T_11062014	Total/NA	Water	353.2	
680-107032-14	DUP-03_11062014	Total/NA	Water	353.2	
680-107032-15	PDMW-32R_11062014	Total/NA	Water	353.2	
680-107032-16	FB-01_11062014	Total/NA	Water	353.2	
680-107032-17	ERB-01_11062014	Total/NA	Water	353.2	
680-107032-18	ERB-02_11062014	Total/NA	Water	353.2	
LCS 680-357560/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-357560/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 358636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-107032-1	SW-01_11062014_HIGH	Total/NA	Water	310.1	
680-107032-2	SW-02_11062014_HIGH	Total/NA	Water	310.1	
680-107032-3	SW-03_11062014_HIGH	Total/NA	Water	310.1	
680-107032-4	SW-04_11062014_HIGH	Total/NA	Water	310.1	
680-107032-4 DU	SW-04_11062014_HIGH	Total/NA	Water	310.1	
680-107032-5	SW-01_11062014_LOW	Total/NA	Water	310.1	

TestAmerica Savannah

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

General Chemistry (Continued)

Analysis Batch: 358636 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-358636/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-358636/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-358636/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 358981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-107032-6	SW-02_11062014_LOW	Total/NA	Water	310.1	
680-107032-7	SW-03_11062014_LOW	Total/NA	Water	310.1	
680-107032-8	SW-04_11062014_LOW	Total/NA	Water	310.1	
LCS 680-358981/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-358981/30	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-358981/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 359110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-107032-1	SW-01_11062014_HIGH	Total/NA	Water	350.1	
680-107032-2	SW-02_11062014_HIGH	Total/NA	Water	350.1	
680-107032-3	SW-03_11062014_HIGH	Total/NA	Water	350.1	
680-107032-4	SW-04_11062014_HIGH	Total/NA	Water	350.1	
680-107032-5	SW-01_11062014_LOW	Total/NA	Water	350.1	
680-107032-6	SW-02_11062014_LOW	Total/NA	Water	350.1	
680-107032-7	SW-03_11062014_LOW	Total/NA	Water	350.1	
680-107032-8	SW-04_11062014_LOW	Total/NA	Water	350.1	
680-107032-9	PDMW-51_11062014	Total/NA	Water	350.1	
680-107032-10	PDMW-52_11062014	Total/NA	Water	350.1	
680-107032-10 MS	PDMW-52_11062014	Total/NA	Water	350.1	
680-107032-10 MSD	PDMW-52_11062014	Total/NA	Water	350.1	
680-107032-11	PDMW-50_11062014	Total/NA	Water	350.1	
680-107032-12	PDMW-29D_11062014	Total/NA	Water	350.1	
680-107032-13	PDMW-26T_11062014	Total/NA	Water	350.1	
680-107032-14	DUP-03_11062014	Total/NA	Water	350.1	
680-107032-15	PDMW-32R_11062014	Total/NA	Water	350.1	
680-107032-16	FB-01_11062014	Total/NA	Water	350.1	
680-107032-17	ERB-01_11062014	Total/NA	Water	350.1	
680-107032-18	ERB-02_11062014	Total/NA	Water	350.1	
680-107032-18 DU	ERB-02_11062014	Total/NA	Water	350.1	
LCS 680-359110/24	Lab Control Sample	Total/NA	Water	350.1	
MB 680-359110/11	Method Blank	Total/NA	Water	350.1	

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: SW-01_11062014_HIGH

Date Collected: 11/06/14 09:25

Date Received: 11/07/14 08:30

Lab Sample ID: 680-107032-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			358636	11/13/14 17:01	LBH	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	359110	11/15/14 13:03	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 11:44	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-02_11062014_HIGH

Date Collected: 11/06/14 09:50

Date Received: 11/07/14 08:30

Lab Sample ID: 680-107032-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			358636	11/13/14 16:54	LBH	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	359110	11/15/14 13:03	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 11:48	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-03_11062014_HIGH

Date Collected: 11/06/14 09:45

Date Received: 11/07/14 08:30

Lab Sample ID: 680-107032-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			358636	11/13/14 16:40	LBH	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	359110	11/15/14 13:03	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 11:50	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-04_11062014_HIGH

Date Collected: 11/06/14 09:20

Date Received: 11/07/14 08:30

Lab Sample ID: 680-107032-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			358636	11/13/14 17:16	LBH	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	359110	11/15/14 13:13	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 11:54	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: SW-01_11062014_LOW

Lab Sample ID: 680-107032-5

Date Collected: 11/06/14 13:45

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			358636	11/13/14 16:48	LBH	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	359110	11/15/14 13:13	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 11:55	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-02_11062014_LOW

Lab Sample ID: 680-107032-6

Date Collected: 11/06/14 14:28

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			358981	11/15/14 18:40	LBH	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	359110	11/15/14 13:35	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 11:56	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-03_11062014_LOW

Lab Sample ID: 680-107032-7

Date Collected: 11/06/14 14:35

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			358981	11/15/14 18:48	LBH	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	359110	11/15/14 13:35	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 12:00	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-04_11062014_LOW

Lab Sample ID: 680-107032-8

Date Collected: 11/06/14 14:15

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			358981	11/15/14 17:05	LBH	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	359110	11/15/14 13:35	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 12:01	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: PDMW-51_11062014

Lab Sample ID: 680-107032-9

Date Collected: 11/06/14 10:35

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		5	2 mL	2 mL	359110	11/15/14 13:44	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 12:02	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-52_11062014

Lab Sample ID: 680-107032-10

Date Collected: 11/06/14 11:45

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		2	2 mL	2 mL	359110	11/15/14 13:30	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 12:03	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-50_11062014

Lab Sample ID: 680-107032-11

Date Collected: 11/06/14 10:51

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		10	2 mL	2 mL	359110	11/15/14 13:44	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 12:05	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-29D_11062014

Lab Sample ID: 680-107032-12

Date Collected: 11/06/14 15:37

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	358064	11/11/14 10:47	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358678	11/13/14 21:28	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	359110	11/15/14 13:44	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 12:08	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: PDMW-26T_11062014

Lab Sample ID: 680-107032-13

Date Collected: 11/06/14 16:53

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	358064	11/11/14 10:47	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358678	11/13/14 21:32	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		500	2 mL	2 mL	359110	11/15/14 14:33	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 12:09	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: DUP-03_11062014

Lab Sample ID: 680-107032-14

Date Collected: 11/06/14 00:00

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	358064	11/11/14 10:47	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358678	11/13/14 21:36	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		500	2 mL	2 mL	359110	11/15/14 14:33	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 12:10	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-32R_11062014

Lab Sample ID: 680-107032-15

Date Collected: 11/06/14 15:30

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	358064	11/11/14 10:47	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358678	11/13/14 21:41	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		5	2 mL	2 mL	359110	11/15/14 13:52	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 12:12	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: FB-01_11062014

Lab Sample ID: 680-107032-16

Date Collected: 11/06/14 16:45

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	357980	11/11/14 15:47	CAR	TAL SAV
		Instrument ID: CMSB								
Total/NA	Prep	3520C			259.2 mL	0.5 mL	357797	11/10/14 15:53	RBS	TAL SAV

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: FB-01_11062014

Lab Sample ID: 680-107032-16

Date Collected: 11/06/14 16:45

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270D		1	259.2 mL	0.5 mL	358569	11/13/14 21:32	LEG	TAL SAV
		Instrument ID: CMST								
Total/NA	Prep	3010A			50 mL	50 mL	358284	11/12/14 10:58	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358681	11/13/14 13:42	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		1	2 mL	2 mL	359110	11/15/14 13:03	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 12:13	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: ERB-01_11062014

Lab Sample ID: 680-107032-17

Date Collected: 11/06/14 17:00

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	357980	11/11/14 16:09	CAR	TAL SAV
		Instrument ID: CMSB								
Total/NA	Prep	3520C			254.2 mL	0.5 mL	357797	11/10/14 15:53	RBS	TAL SAV
Total/NA	Analysis	8270D		1	254.2 mL	0.5 mL	358569	11/13/14 21:56	LEG	TAL SAV
		Instrument ID: CMST								
Total/NA	Prep	3010A			50 mL	50 mL	358284	11/12/14 10:58	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358681	11/13/14 13:46	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		1	2 mL	2 mL	359110	11/15/14 13:21	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 12:14	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: ERB-02_11062014

Lab Sample ID: 680-107032-18

Date Collected: 11/06/14 17:20

Matrix: Water

Date Received: 11/07/14 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			262.3 mL	0.5 mL	357797	11/10/14 15:53	RBS	TAL SAV
Total/NA	Analysis	8270D		1	262.3 mL	0.5 mL	358569	11/13/14 22:20	LEG	TAL SAV
		Instrument ID: CMST								
Total/NA	Prep	3010A			50 mL	50 mL	358284	11/12/14 10:58	SP	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	358681	11/13/14 13:59	BCB	TAL SAV
		Instrument ID: ICPF								
Total/NA	Analysis	350.1		1	2 mL	2 mL	359110	11/15/14 13:03	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	357560	11/07/14 12:15	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Client Sample ID: TRIP-BLANK_11062014
Date Collected: 11/06/14 00:00
Date Received: 11/07/14 08:30

Lab Sample ID: 680-107032-19
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	357980	11/11/14 16:30	CAR	TAL SAV
Instrument ID: CMSB										

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-15

1

2

3

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12

Method Summary

Client: AMEC Environment & Infrastructure, Inc.
Project/Site: CSX Hutchinson Island VRP

TestAmerica Job ID: 680-107032-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CSX

CHAIN OF CUSTODY

TRANSPORTATION

LABORATORY INFORMATION

TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165

TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772

TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049

TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671

TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991

TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method: Lab Courier

Shipment Tracking No: _____

CSXT PROJECT INFORMATION

CSXT Project Number: 9415575

CSXT Project Name: Hutchinson Island

CSXT Contact: Sam Ross

CONSULTANT INFORMATION

Proj. State (State of Origin): GA

Proj. City: Savannah

Company: Ames E&I

Address: 3800 E. 26 St 100

City/State/Zip: Nesville, TN 37211

Project #: 6-4300-5244

PM: Pat Harrison

Email: pat.harrison@ames.com

Phone: (678) 658-1274

Turnaround Time:

☐ 1 Day Rush

☐ 2 Day Rush

☐ 3 Day Rush

☒ Standard 6-13 Days

☐ Specify # Days _____

☐ Standard 14 Days

☐ Other _____

Preservative Codes:

0 = No Preservatives

1 = Hydrochloric Acid

2 = Nitric Acid

3 = Sulfuric Acid

4 = Sodium Thiosulfate

5 = Sodium Hydroxide

6 = Other _____

Matrix Codes:

SO = Soil

LIQ = Liquid

GW = Groundwater

SL = Sludge

WW = Waste Water

OI = Oil

SW = Surface Water

SOL = Other Solid

Deliverables:

☒ CSXT Standard (Level II)

☐ Level III

☐ Level IV

☐ EDD Required, Format: _____

Sample Identification

Containers Number & Type	Date	Time	Sampler	Filtered Y or N	Type	Matrix Code
SW-01-11062014-HIGH	11/6/14	0925	JJ	N	G	SW
SW-02-11062014-HIGH	11/6/14	0950	JJ	N	G	SW
SW-03-11062014-HIGH	11/6/14	0945	PG	N	G	SW
SW-04-11062014-HIGH	11/6/14	0920	PG	N	G	SW
SW-01-11062014-LOW	11/6/14	1345	JJ	N	G	SW
SW-02-11062014-LOW	11/6/14	1428	JJ	N	G	SW
SW-03-11062014-LOW	11/6/14	1435	PG	N	G	SW
SW-04-11062014-LOW	11/6/14	1415	PG	N	G	SW
PDMW-31-11062014	11/6/14	1035	PG	N	G	SW
PDMW-52-11062014	11/6/14	1145	PG	N	G	SW

Comments & Special Analytical Requirements:

Ammonia Nitrate Alkalinity

680-107032 Chain of Custody

4.6 5.0

Relinquished By: [Signature]

Relinquished By: [Signature]

Relinquished By: [Signature]

Received By: [Signature]

Received By: [Signature]

Received By: [Signature]

Date/Time: 11/14/14 07:45

Date/Time: 11/17/14

Date/Time: 11/17/14

Lab Remarks: 680-107032

Lab Log Number: _____

Lab USE: ☐ Yes ☐ No

ORIGINAL - RETURN TO LABORATORY WITH SAMPLES

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC

TAL-6006 (0509)

Login Sample Receipt Checklist

Client: AMEC Environment & Infrastructure, Inc.

Job Number: 680-107032-1

Login Number: 107032

List Source: TestAmerica Savannah

List Number: 1

Creator: West, Lauren H

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-112658-1

Client Project/Site: CSX GA, Hutchinson Island, VRP

For:

AMEC Foster Wheeler E & I, Inc

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Aaron Getchell



Authorized for release by:

5/21/2015 3:30:06 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

LINKS

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112658-1

Job ID: 680-112658-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Foster Wheeler E & I, Inc
Project: CSX GA, Hutchinson Island, VRP
Report Number: 680-112658-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 05/19/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 5.4 C.

AMMONIA

Samples PDMW-52_05182015 (680-112658-1), PDMW-51_05182015 (680-112658-2) and PDMW-49_05182015 (680-112658-3) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were analyzed on 05/20/2015.

Sample PDMW-51_05182015 (680-112658-2)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

NITRATE-NITRITE AS NITROGEN

Samples PDMW-52_05182015 (680-112658-1), PDMW-51_05182015 (680-112658-2) and PDMW-49_05182015 (680-112658-3) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 05/19/2015.

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

Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112658-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112658-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-112658-1	PDMW-52_05182015	Water	05/18/15 14:40	05/19/15 08:30
680-112658-2	PDMW-51_05182015	Water	05/18/15 16:00	05/19/15 08:30
680-112658-3	PDMW-49_05182015	Water	05/18/15 16:15	05/19/15 08:30

Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112658-1

Method	Method Description	Protocol	Laboratory
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112658-1

Client Sample ID: PDMW-52_05182015

Lab Sample ID: 680-112658-1

Date Collected: 05/18/15 14:40

Matrix: Water

Date Received: 05/19/15 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.58		0.25		mg/L			05/20/15 12:23	1
Nitrate as N	0.050	U	0.050		mg/L			05/19/15 16:29	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/19/15 16:29	1
Nitrite as N	0.050	U	0.050		mg/L			05/19/15 16:29	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112658-1

Client Sample ID: PDMW-51_05182015

Lab Sample ID: 680-112658-2

Date Collected: 05/18/15 16:00

Matrix: Water

Date Received: 05/19/15 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	3.0		0.50		mg/L			05/20/15 12:32	2
Nitrate as N	0.050	U	0.050		mg/L			05/19/15 16:30	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/19/15 16:30	1
Nitrite as N	0.050	U	0.050		mg/L			05/19/15 16:30	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112658-1

Client Sample ID: PDMW-49_05182015

Lab Sample ID: 680-112658-3

Date Collected: 05/18/15 16:15

Matrix: Water

Date Received: 05/19/15 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.63		0.25		mg/L			05/20/15 12:24	1
Nitrate as N	0.050	U	0.050		mg/L			05/19/15 16:31	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/19/15 16:31	1
Nitrite as N	0.050	U	0.050		mg/L			05/19/15 16:31	1

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112658-1

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-384034/28

Matrix: Water

Analysis Batch: 384034

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			05/20/15 12:28	1

Lab Sample ID: LCS 680-384034/35

Matrix: Water

Analysis Batch: 384034

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	0.994		mg/L		99	90 - 110

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-383888/13

Matrix: Water

Analysis Batch: 383888

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			05/19/15 15:42	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/19/15 15:42	1
Nitrite as N	0.050	U	0.050		mg/L			05/19/15 15:42	1

Lab Sample ID: LCS 680-383888/16

Matrix: Water

Analysis Batch: 383888

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.545		mg/L		109	75 - 125
Nitrate Nitrite as N	1.00	1.05		mg/L		105	90 - 110
Nitrite as N	0.500	0.509		mg/L		102	90 - 110

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112658-1

General Chemistry

Analysis Batch: 383888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112658-1	PDMW-52_05182015	Total/NA	Water	353.2	
680-112658-2	PDMW-51_05182015	Total/NA	Water	353.2	
680-112658-3	PDMW-49_05182015	Total/NA	Water	353.2	
LCS 680-383888/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-383888/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 384034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112658-1	PDMW-52_05182015	Total/NA	Water	350.1	
680-112658-2	PDMW-51_05182015	Total/NA	Water	350.1	
680-112658-3	PDMW-49_05182015	Total/NA	Water	350.1	
LCS 680-384034/35	Lab Control Sample	Total/NA	Water	350.1	
MB 680-384034/28	Method Blank	Total/NA	Water	350.1	

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112658-1

Client Sample ID: PDMW-52_05182015

Date Collected: 05/18/15 14:40

Date Received: 05/19/15 08:30

Lab Sample ID: 680-112658-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	2 mL	2 mL	384034	05/20/15 12:23	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	383888	05/19/15 16:29	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-51_05182015

Date Collected: 05/18/15 16:00

Date Received: 05/19/15 08:30

Lab Sample ID: 680-112658-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		2	2 mL	2 mL	384034	05/20/15 12:32	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	383888	05/19/15 16:30	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-49_05182015

Date Collected: 05/18/15 16:15

Date Received: 05/19/15 08:30

Lab Sample ID: 680-112658-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	2 mL	2 mL	384034	05/20/15 12:24	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	383888	05/19/15 16:31	GRX	TAL SAV
		Instrument ID: LACHAT2								

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 680-112658-1

Login Number: 112658

List Source: TestAmerica Savannah

List Number: 1

Creator: White, Menica R

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112658-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-15

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-112692-1

Client Project/Site: CSX GA, Hutchinson Island, VRP

For:

AMEC Foster Wheeler E & I, Inc

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Aaron Getchell



Authorized for release by:

5/26/2015 3:04:36 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Job ID: 680-112692-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Foster Wheeler E & I, Inc
Project: CSX GA, Hutchinson Island, VRP
Report Number: 680-112692-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 05/20/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.4 C.

A dissolved metals container for ID: PDMW-13P_05192015 was received, however, was not listed on COC. The lab was instructed to put this sample on hold, pending test results for total metals.

METALS (ICP)

Samples PDMW-13P_05192015 (680-112692-1), PDMW-7P_05192015 (680-112692-2), PDMW-32R_05192015 (680-112692-3), TMW-4R_05192015 (680-112692-4), PDMW-23R_05192015 (680-112692-5), MW-3R_05192015 (680-112692-7) and MW-2_05192015 (680-112692-10) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 05/22/2015.

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

AMMONIA

Samples PDMW-13P_05192015 (680-112692-1), PDMW-7P_05192015 (680-112692-2), PDMW-32R_05192015 (680-112692-3), TMW-4R_05192015 (680-112692-4), PDMW-23R_05192015 (680-112692-5), PDMW-50_05192015 (680-112692-6), MW-3R_05192015 (680-112692-7), PDMW-53_05192015 (680-112692-8), PDMW-48_05192015 (680-112692-9) and MW-2_05192015 (680-112692-10) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were analyzed on 05/21/2015.

Samples PDMW-13P_05192015 (680-112692-1)[2X], PDMW-7P_05192015 (680-112692-2)[10X], TMW-4R_05192015 (680-112692-4)[5X], PDMW-50_05192015 (680-112692-6)[5X], PDMW-48_05192015 (680-112692-9)[5X] and MW-2_05192015 (680-112692-10)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

NITRATE-NITRITE AS NITROGEN

Samples PDMW-13P_05192015 (680-112692-1), PDMW-7P_05192015 (680-112692-2), PDMW-32R_05192015 (680-112692-3), TMW-4R_05192015 (680-112692-4), PDMW-23R_05192015 (680-112692-5), PDMW-50_05192015 (680-112692-6), MW-3R_05192015 (680-112692-7), PDMW-53_05192015 (680-112692-8), PDMW-48_05192015 (680-112692-9) and MW-2_05192015 (680-112692-10) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 05/20/2015.

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

Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-112692-1	PDMW-13P_05192015	Water	05/19/15 09:43	05/20/15 08:15
680-112692-2	PDMW-7P_05192015	Water	05/19/15 09:00	05/20/15 08:15
680-112692-3	PDMW-32R_05192015	Water	05/19/15 10:56	05/20/15 08:15
680-112692-4	TMW-4R_05192015	Water	05/19/15 10:05	05/20/15 08:15
680-112692-5	PDMW-23R_05192015	Water	05/19/15 11:05	05/20/15 08:15
680-112692-6	PDMW-50_05192015	Water	05/19/15 14:38	05/20/15 08:15
680-112692-7	MW-3R_05192015	Water	05/19/15 14:50	05/20/15 08:15
680-112692-8	PDMW-53_05192015	Water	05/19/15 16:08	05/20/15 08:15
680-112692-9	PDMW-48_05192015	Water	05/19/15 16:25	05/20/15 08:15
680-112692-10	MW-2_05192015	Water	05/19/15 17:00	05/20/15 08:15

Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: PDMW-13P_05192015

Lab Sample ID: 680-112692-1

Date Collected: 05/19/15 09:43

Matrix: Water

Date Received: 05/20/15 08:15

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 20:30	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 20:30	1
Nickel	40	U	40		ug/L		05/22/15 09:35	05/22/15 20:30	1
Zinc	20	U	20		ug/L		05/22/15 09:35	05/22/15 20:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	2.7		0.50		mg/L			05/21/15 09:08	2
Nitrate as N	0.050	U	0.050		mg/L			05/20/15 14:54	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/20/15 14:54	1
Nitrite as N	0.050	U	0.050		mg/L			05/20/15 14:54	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: PDMW-7P_05192015

Lab Sample ID: 680-112692-2

Date Collected: 05/19/15 09:00

Matrix: Water

Date Received: 05/20/15 08:15

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 21:02	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 21:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	16		2.5		mg/L			05/21/15 09:08	10
Nitrate as N	0.050	U	0.050		mg/L			05/20/15 14:58	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/20/15 14:58	1
Nitrite as N	0.11		0.050		mg/L			05/20/15 14:58	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: PDMW-32R_05192015

Lab Sample ID: 680-112692-3

Date Collected: 05/19/15 10:56

Matrix: Water

Date Received: 05/20/15 08:15

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 21:06	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 21:06	1
Nickel	40	U	40		ug/L		05/22/15 09:35	05/22/15 21:06	1
Zinc	110		20		ug/L		05/22/15 09:35	05/22/15 21:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.70		0.25		mg/L			05/21/15 08:51	1
Nitrate as N	0.050	U	0.050		mg/L			05/20/15 15:03	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/20/15 15:03	1
Nitrite as N	0.050	U	0.050		mg/L			05/20/15 15:03	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: TMW-4R_05192015

Lab Sample ID: 680-112692-4

Date Collected: 05/19/15 10:05

Matrix: Water

Date Received: 05/20/15 08:15

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 21:11	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 21:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	6.8		1.3		mg/L			05/21/15 10:09	5
Nitrate as N	0.050	U	0.050		mg/L			05/20/15 15:04	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/20/15 15:04	1
Nitrite as N	0.081		0.050		mg/L			05/20/15 15:04	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: PDMW-23R_05192015

Lab Sample ID: 680-112692-5

Date Collected: 05/19/15 11:05

Matrix: Water

Date Received: 05/20/15 08:15

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 21:15	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 21:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.5		0.25		mg/L			05/21/15 09:17	1
Nitrate as N	0.050	U	0.050		mg/L			05/20/15 15:05	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/20/15 15:05	1
Nitrite as N	0.050	U	0.050		mg/L			05/20/15 15:05	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: PDMW-50_05192015

Lab Sample ID: 680-112692-6

Date Collected: 05/19/15 14:38

Matrix: Water

Date Received: 05/20/15 08:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	5.9		1.3		mg/L			05/21/15 10:19	5
Nitrate as N	0.050	U	0.050		mg/L			05/20/15 15:06	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/20/15 15:06	1
Nitrite as N	0.088		0.050		mg/L			05/20/15 15:06	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: MW-3R_05192015

Lab Sample ID: 680-112692-7

Date Collected: 05/19/15 14:50

Matrix: Water

Date Received: 05/20/15 08:15

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 21:20	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 21:20	1
Nickel	40	U	40		ug/L		05/22/15 09:35	05/22/15 21:20	1
Zinc	89		20		ug/L		05/22/15 09:35	05/22/15 21:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.9		0.25		mg/L			05/21/15 09:17	1
Nitrate as N	0.050	U	0.050		mg/L			05/20/15 15:07	1
Nitrate Nitrite as N	0.055		0.050		mg/L			05/20/15 15:07	1
Nitrite as N	0.078		0.050		mg/L			05/20/15 15:07	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: PDMW-53_05192015

Lab Sample ID: 680-112692-8

Date Collected: 05/19/15 16:08

Matrix: Water

Date Received: 05/20/15 08:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.6		0.25		mg/L			05/21/15 09:17	1
Nitrate as N	0.050	U	0.050		mg/L			05/20/15 15:09	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/20/15 15:09	1
Nitrite as N	0.089		0.050		mg/L			05/20/15 15:09	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: PDMW-48_05192015

Lab Sample ID: 680-112692-9

Date Collected: 05/19/15 16:25

Matrix: Water

Date Received: 05/20/15 08:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	8.5		1.3		mg/L			05/21/15 09:35	5
Nitrate as N	0.050	U	0.050		mg/L			05/20/15 15:10	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/20/15 15:10	1
Nitrite as N	0.19		0.050		mg/L			05/20/15 15:10	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: MW-2_05192015

Lab Sample ID: 680-112692-10

Date Collected: 05/19/15 17:00

Matrix: Water

Date Received: 05/20/15 08:15

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 21:25	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 21:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	13		2.5		mg/L			05/21/15 09:35	10
Nitrate as N	0.050	U	0.050		mg/L			05/20/15 15:11	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/20/15 15:11	1
Nitrite as N	0.17		0.050		mg/L			05/20/15 15:11	1

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-384313/1-A

Matrix: Water

Analysis Batch: 384501

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 384313

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 20:20	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 20:20	1
Nickel	40	U	40		ug/L		05/22/15 09:35	05/22/15 20:20	1
Zinc	20	U	20		ug/L		05/22/15 09:35	05/22/15 20:20	1

Lab Sample ID: LCS 680-384313/2-A

Matrix: Water

Analysis Batch: 384501

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 384313

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	96.8		ug/L		97	80 - 120
Lead	500	484		ug/L		97	80 - 120
Nickel	100	100		ug/L		100	80 - 120
Zinc	100	100		ug/L		100	80 - 120

Lab Sample ID: 680-112692-1 MS

Matrix: Water

Analysis Batch: 384501

Client Sample ID: PDMW-13P_05192015

Prep Type: Total/NA

Prep Batch: 384313

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	20	U	100	97.4		ug/L		97	75 - 125
Lead	10	U	500	489		ug/L		96	75 - 125
Nickel	40	U	100	101		ug/L		101	75 - 125
Zinc	20	U	100	105		ug/L		105	75 - 125

Lab Sample ID: 680-112692-1 MSD

Matrix: Water

Analysis Batch: 384501

Client Sample ID: PDMW-13P_05192015

Prep Type: Total/NA

Prep Batch: 384313

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	20	U	100	95.5		ug/L		96	75 - 125	2	20
Lead	10	U	500	490		ug/L		96	75 - 125	0	20
Nickel	40	U	100	100		ug/L		100	75 - 125	1	20
Zinc	20	U	100	107		ug/L		107	75 - 125	2	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-384165/34

Matrix: Water

Analysis Batch: 384165

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			05/21/15 09:17	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 680-384165/41

Matrix: Water

Analysis Batch: 384165

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.00		mg/L		100	90 - 110

Lab Sample ID: 680-112692-1 DU

Matrix: Water

Analysis Batch: 384165

Client Sample ID: PDMW-13P_05192015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ammonia	2.7		2.74		mg/L		0.4	30

Lab Sample ID: MB 680-384166/20

Matrix: Water

Analysis Batch: 384166

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			05/21/15 09:25	1

Lab Sample ID: LCS 680-384166/41

Matrix: Water

Analysis Batch: 384166

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.00		mg/L		100	90 - 110

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-384064/16

Matrix: Water

Analysis Batch: 384064

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			05/20/15 14:53	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/20/15 14:53	1
Nitrite as N	0.050	U	0.050		mg/L			05/20/15 14:53	1

Lab Sample ID: LCS 680-384064/15

Matrix: Water

Analysis Batch: 384064

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.538		mg/L		108	75 - 125
Nitrate Nitrite as N	1.00	1.04		mg/L		104	90 - 110
Nitrite as N	0.500	0.504		mg/L		101	90 - 110

Lab Sample ID: 680-112692-1 MS

Matrix: Water

Analysis Batch: 384064

Client Sample ID: PDMW-13P_05192015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.050	U	0.500	0.535		mg/L		107	75 - 125

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: 680-112692-1 MS

Matrix: Water

Analysis Batch: 384064

Client Sample ID: PDMW-13P_05192015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.050	U	1.00	1.04		mg/L		104	90 - 110
Nitrite as N	0.050	U	0.500	0.503		mg/L		101	90 - 110

Lab Sample ID: 680-112692-1 MSD

Matrix: Water

Analysis Batch: 384064

Client Sample ID: PDMW-13P_05192015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.050	U	0.500	0.533		mg/L		107	75 - 125	0	30
Nitrate Nitrite as N	0.050	U	1.00	1.03		mg/L		103	90 - 110	0	10
Nitrite as N	0.050	U	0.500	0.502		mg/L		100	90 - 110	0	10

Lab Sample ID: 680-112692-2 DU

Matrix: Water

Analysis Batch: 384064

Client Sample ID: PDMW-7P_05192015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	0.050	U	0.050	U	mg/L		NC	30
Nitrate Nitrite as N	0.050	U	0.050	U	mg/L		NC	10
Nitrite as N	0.11		0.107		mg/L		0.6	10

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Metals

Prep Batch: 384313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112692-1	PDMW-13P_05192015	Total/NA	Water	3010A	
680-112692-1 MS	PDMW-13P_05192015	Total/NA	Water	3010A	
680-112692-1 MSD	PDMW-13P_05192015	Total/NA	Water	3010A	
680-112692-2	PDMW-7P_05192015	Total/NA	Water	3010A	
680-112692-3	PDMW-32R_05192015	Total/NA	Water	3010A	
680-112692-4	TMW-4R_05192015	Total/NA	Water	3010A	
680-112692-5	PDMW-23R_05192015	Total/NA	Water	3010A	
680-112692-7	MW-3R_05192015	Total/NA	Water	3010A	
680-112692-10	MW-2_05192015	Total/NA	Water	3010A	
LCS 680-384313/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-384313/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 384501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112692-1	PDMW-13P_05192015	Total/NA	Water	6010C	384313
680-112692-1 MS	PDMW-13P_05192015	Total/NA	Water	6010C	384313
680-112692-1 MSD	PDMW-13P_05192015	Total/NA	Water	6010C	384313
680-112692-2	PDMW-7P_05192015	Total/NA	Water	6010C	384313
680-112692-3	PDMW-32R_05192015	Total/NA	Water	6010C	384313
680-112692-4	TMW-4R_05192015	Total/NA	Water	6010C	384313
680-112692-5	PDMW-23R_05192015	Total/NA	Water	6010C	384313
680-112692-7	MW-3R_05192015	Total/NA	Water	6010C	384313
680-112692-10	MW-2_05192015	Total/NA	Water	6010C	384313
LCS 680-384313/2-A	Lab Control Sample	Total/NA	Water	6010C	384313
MB 680-384313/1-A	Method Blank	Total/NA	Water	6010C	384313

General Chemistry

Analysis Batch: 384064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112692-1	PDMW-13P_05192015	Total/NA	Water	353.2	
680-112692-1 MS	PDMW-13P_05192015	Total/NA	Water	353.2	
680-112692-1 MSD	PDMW-13P_05192015	Total/NA	Water	353.2	
680-112692-2	PDMW-7P_05192015	Total/NA	Water	353.2	
680-112692-2 DU	PDMW-7P_05192015	Total/NA	Water	353.2	
680-112692-3	PDMW-32R_05192015	Total/NA	Water	353.2	
680-112692-4	TMW-4R_05192015	Total/NA	Water	353.2	
680-112692-5	PDMW-23R_05192015	Total/NA	Water	353.2	
680-112692-6	PDMW-50_05192015	Total/NA	Water	353.2	
680-112692-7	MW-3R_05192015	Total/NA	Water	353.2	
680-112692-8	PDMW-53_05192015	Total/NA	Water	353.2	
680-112692-9	PDMW-48_05192015	Total/NA	Water	353.2	
680-112692-10	MW-2_05192015	Total/NA	Water	353.2	
LCS 680-384064/15	Lab Control Sample	Total/NA	Water	353.2	
MB 680-384064/16	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 384165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112692-1	PDMW-13P_05192015	Total/NA	Water	350.1	
680-112692-1 DU	PDMW-13P_05192015	Total/NA	Water	350.1	

TestAmerica Savannah

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

General Chemistry (Continued)

Analysis Batch: 384165 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112692-2	PDMW-7P_05192015	Total/NA	Water	350.1	
680-112692-3	PDMW-32R_05192015	Total/NA	Water	350.1	
680-112692-4	TMW-4R_05192015	Total/NA	Water	350.1	
680-112692-5	PDMW-23R_05192015	Total/NA	Water	350.1	
680-112692-6	PDMW-50_05192015	Total/NA	Water	350.1	
680-112692-7	MW-3R_05192015	Total/NA	Water	350.1	
680-112692-8	PDMW-53_05192015	Total/NA	Water	350.1	
LCS 680-384165/41	Lab Control Sample	Total/NA	Water	350.1	
MB 680-384165/34	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 384166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112692-9	PDMW-48_05192015	Total/NA	Water	350.1	
680-112692-10	MW-2_05192015	Total/NA	Water	350.1	
LCS 680-384166/41	Lab Control Sample	Total/NA	Water	350.1	
MB 680-384166/20	Method Blank	Total/NA	Water	350.1	

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: PDMW-13P_05192015

Date Collected: 05/19/15 09:43

Date Received: 05/20/15 08:15

Lab Sample ID: 680-112692-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384313	05/22/15 09:35	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384501	05/22/15 20:30	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		2	2 mL	2 mL	384165	05/21/15 09:08	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384064	05/20/15 14:54	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-7P_05192015

Date Collected: 05/19/15 09:00

Date Received: 05/20/15 08:15

Lab Sample ID: 680-112692-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384313	05/22/15 09:35	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384501	05/22/15 21:02	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	384165	05/21/15 09:08	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384064	05/20/15 14:58	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-32R_05192015

Date Collected: 05/19/15 10:56

Date Received: 05/20/15 08:15

Lab Sample ID: 680-112692-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384313	05/22/15 09:35	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384501	05/22/15 21:06	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	384165	05/21/15 08:51	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384064	05/20/15 15:03	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: TMW-4R_05192015

Date Collected: 05/19/15 10:05

Date Received: 05/20/15 08:15

Lab Sample ID: 680-112692-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384313	05/22/15 09:35	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384501	05/22/15 21:11	BCB	TAL SAV
		Instrument ID: ICPE								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: TMW-4R_05192015

Lab Sample ID: 680-112692-4

Date Collected: 05/19/15 10:05

Matrix: Water

Date Received: 05/20/15 08:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		5	2 mL	2 mL	384165	05/21/15 10:09	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384064	05/20/15 15:04	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-23R_05192015

Lab Sample ID: 680-112692-5

Date Collected: 05/19/15 11:05

Matrix: Water

Date Received: 05/20/15 08:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384313	05/22/15 09:35	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384501	05/22/15 21:15	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	384165	05/21/15 09:17	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384064	05/20/15 15:05	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-50_05192015

Lab Sample ID: 680-112692-6

Date Collected: 05/19/15 14:38

Matrix: Water

Date Received: 05/20/15 08:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		5	2 mL	2 mL	384165	05/21/15 10:19	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384064	05/20/15 15:06	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: MW-3R_05192015

Lab Sample ID: 680-112692-7

Date Collected: 05/19/15 14:50

Matrix: Water

Date Received: 05/20/15 08:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384313	05/22/15 09:35	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384501	05/22/15 21:20	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	384165	05/21/15 09:17	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384064	05/20/15 15:07	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Client Sample ID: PDMW-53_05192015

Lab Sample ID: 680-112692-8

Date Collected: 05/19/15 16:08

Matrix: Water

Date Received: 05/20/15 08:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	2 mL	2 mL	384165	05/21/15 09:17	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384064	05/20/15 15:09	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-48_05192015

Lab Sample ID: 680-112692-9

Date Collected: 05/19/15 16:25

Matrix: Water

Date Received: 05/20/15 08:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		5	2 mL	2 mL	384166	05/21/15 09:35	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384064	05/20/15 15:10	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: MW-2_05192015

Lab Sample ID: 680-112692-10

Date Collected: 05/19/15 17:00

Matrix: Water

Date Received: 05/20/15 08:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384313	05/22/15 09:35	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384501	05/22/15 21:25	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	384166	05/21/15 09:35	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384064	05/20/15 15:11	GRX	TAL SAV
		Instrument ID: LACHAT2								

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 680-112692-1

Login Number: 112692

List Source: TestAmerica Savannah

List Number: 1

Creator: Banda, Christy S

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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?	N/A	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.
Samples are received within Holding Time.	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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112692-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-15

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-112765-1

Client Project/Site: CSX GA, Hutchinson Island, VRP

For:

AMEC Foster Wheeler E & I, Inc

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Aaron Getchell



Authorized for release by:

5/28/2015 4:46:36 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Job ID: 680-112765-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Foster Wheeler E & I, Inc
Project: CSX GA, Hutchinson Island, VRP
Report Number: 680-112765-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 05/21/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.8 C.

METALS (ICP)

Samples PDMW-10R_05202015 (680-112765-1), PDMW-45R_05202015 (680-112765-2), MW-201_05202015 (680-112765-3), DUP-03_05202015 (680-112765-4), EW-01_05202015 (680-112765-5), DUP-02_05202015 (680-112765-6), MW-1_05202015 (680-112765-7), PDMW-8R_05202015 (680-112765-8), PDMW-19P_05202015 (680-112765-9), PDMW-47_05202015 (680-112765-10), PDMW-46_05202015 (680-112765-11), PDMW-33R2_05202015 (680-112765-12) and PDMW-30P_05202015 (680-112765-13) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 05/22/2015 and 05/26/2015 and analyzed on 05/22/2015 and 05/27/2015.

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

AMMONIA

Samples PDMW-10R_05202015 (680-112765-1), PDMW-45R_05202015 (680-112765-2), MW-201_05202015 (680-112765-3), DUP-03_05202015 (680-112765-4), EW-01_05202015 (680-112765-5), DUP-02_05202015 (680-112765-6), MW-1_05202015 (680-112765-7), PDMW-8R_05202015 (680-112765-8), PDMW-19P_05202015 (680-112765-9), PDMW-47_05202015 (680-112765-10), PDMW-46_05202015 (680-112765-11), PDMW-33R2_05202015 (680-112765-12) and PDMW-30P_05202015 (680-112765-13) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were analyzed on 05/26/2015 and 05/27/2015.

Ammonia recovery is outside criteria high for the MS of sample EW-01_05202015MS (680-112765-5) in batch 680-384906. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. Refer to the QC report for details.

Samples PDMW-10R_05202015 (680-112765-1)[5X], PDMW-45R_05202015 (680-112765-2)[2X], EW-01_05202015 (680-112765-5) [400X], DUP-02_05202015 (680-112765-6)[200X], MW-1_05202015 (680-112765-7)[20X], PDMW-8R_05202015 (680-112765-8)[50X], PDMW-19P_05202015 (680-112765-9)[5X], PDMW-47_05202015 (680-112765-10)[20X], PDMW-33R2_05202015 (680-112765-12)[10X] and PDMW-30P_05202015 (680-112765-13)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

NITRATE-NITRITE AS NITROGEN

Samples PDMW-10R_05202015 (680-112765-1), PDMW-45R_05202015 (680-112765-2), MW-201_05202015 (680-112765-3), DUP-03_05202015 (680-112765-4), EW-01_05202015 (680-112765-5), DUP-02_05202015 (680-112765-6), MW-1_05202015 (680-112765-7), PDMW-8R_05202015 (680-112765-8), PDMW-19P_05202015 (680-112765-9), PDMW-47_05202015 (680-112765-10), PDMW-46_05202015 (680-112765-11), PDMW-33R2_05202015 (680-112765-12) and PDMW-30P_05202015 (680-112765-13) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 05/21/2015.

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

Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Qualifiers

Metals

Qualifier	Qualifier Description
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U	Indicates the analyte was analyzed for but not detected.
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General Chemistry

Qualifier	Qualifier Description
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U	Indicates the analyte was analyzed for but not detected.
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F1	MS and/or MSD Recovery is outside acceptance limits.
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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-112765-1	PDMW-10R_05202015	Water	05/20/15 11:05	05/21/15 08:20
680-112765-2	PDMW-45R_05202015	Water	05/20/15 09:25	05/21/15 08:20
680-112765-3	MW-201_05202015	Water	05/20/15 08:55	05/21/15 08:20
680-112765-4	DUP-03_05202015	Water	05/20/15 00:00	05/21/15 08:20
680-112765-5	EW-01_05202015	Water	05/20/15 10:10	05/21/15 08:20
680-112765-6	DUP-02_05202015	Water	05/20/15 00:00	05/21/15 08:20
680-112765-7	MW-1_05202015	Water	05/20/15 10:47	05/21/15 08:20
680-112765-8	PDMW-8R_05202015	Water	05/20/15 13:15	05/21/15 08:20
680-112765-9	PDMW-19P_05202015	Water	05/20/15 13:25	05/21/15 08:20
680-112765-10	PDMW-47_05202015	Water	05/20/15 14:36	05/21/15 08:20
680-112765-11	PDMW-46_05202015	Water	05/20/15 14:50	05/21/15 08:20
680-112765-12	PDMW-33R2_05202015	Water	05/20/15 15:42	05/21/15 08:20
680-112765-13	PDMW-30P_05202015	Water	05/20/15 16:00	05/21/15 08:20

Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: PDMW-10R_05202015

Lab Sample ID: 680-112765-1

Date Collected: 05/20/15 11:05

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 22:20	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 22:20	1
Nickel	40	U	40		ug/L		05/22/15 09:35	05/22/15 22:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	7.3		1.3		mg/L			05/26/15 16:50	5
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 18:14	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:14	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:14	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: PDMW-45R_05202015

Lab Sample ID: 680-112765-2

Date Collected: 05/20/15 09:25

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 22:24	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 22:24	1
Nickel	40	U	40		ug/L		05/22/15 09:35	05/22/15 22:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	3.6		0.50		mg/L			05/26/15 17:19	2
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 18:15	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:15	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:15	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: MW-201_05202015

Lab Sample ID: 680-112765-3

Date Collected: 05/20/15 08:55

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 22:38	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 22:38	1
Nickel	40	U	40		ug/L		05/22/15 09:35	05/22/15 22:38	1
Zinc	20	U	20		ug/L		05/22/15 09:35	05/22/15 22:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.1		0.25		mg/L			05/26/15 16:15	1
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 18:16	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:16	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:16	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: DUP-03_05202015

Lab Sample ID: 680-112765-4

Date Collected: 05/20/15 00:00

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 22:43	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 22:43	1
Nickel	40	U	40		ug/L		05/22/15 09:35	05/22/15 22:43	1
Zinc	20	U	20		ug/L		05/22/15 09:35	05/22/15 22:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.1		0.25		mg/L			05/26/15 16:20	1
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 18:17	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:17	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:17	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: EW-01_05202015

Lab Sample ID: 680-112765-5

Date Collected: 05/20/15 10:10

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 13:36	1
Chromium	10	U	10		ug/L		05/26/15 10:40	05/27/15 13:36	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 13:36	1
Nickel	44		40		ug/L		05/26/15 10:40	05/27/15 13:36	1
Zinc	190		20		ug/L		05/26/15 10:40	05/27/15 13:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	320	F1	100		mg/L			05/27/15 10:29	400
Nitrate as N	0.063		0.050		mg/L			05/21/15 18:18	1
Nitrate Nitrite as N	0.065		0.050		mg/L			05/21/15 18:18	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:18	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: DUP-02_05202015

Lab Sample ID: 680-112765-6

Date Collected: 05/20/15 00:00

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 13:59	1
Chromium	10	U	10		ug/L		05/26/15 10:40	05/27/15 13:59	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 13:59	1
Nickel	44		40		ug/L		05/26/15 10:40	05/27/15 13:59	1
Zinc	190		20		ug/L		05/26/15 10:40	05/27/15 13:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	260		50		mg/L			05/26/15 18:48	200
Nitrate as N	0.097		0.050		mg/L			05/21/15 18:19	1
Nitrate Nitrite as N	0.10		0.050		mg/L			05/21/15 18:19	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:19	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: MW-1_05202015

Lab Sample ID: 680-112765-7

Date Collected: 05/20/15 10:47

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 14:03	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 14:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	21		5.0		mg/L			05/26/15 16:50	20
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 18:21	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:21	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:21	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: PDMW-8R_05202015

Lab Sample ID: 680-112765-8

Date Collected: 05/20/15 13:15

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 14:08	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 14:08	1
Nickel	40	U	40		ug/L		05/26/15 10:40	05/27/15 14:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	64		13		mg/L			05/26/15 17:23	50
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 18:22	1
Nitrate Nitrite as N	0.098		0.050		mg/L			05/21/15 18:22	1
Nitrite as N	0.050		0.050		mg/L			05/21/15 18:22	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: PDMW-19P_05202015

Lab Sample ID: 680-112765-9

Date Collected: 05/20/15 13:25

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 14:21	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 14:21	1
Nickel	40	U	40		ug/L		05/26/15 10:40	05/27/15 14:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	4.7		1.3		mg/L			05/26/15 17:00	5
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 18:25	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:25	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:25	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: PDMW-47_05202015

Lab Sample ID: 680-112765-10

Date Collected: 05/20/15 14:36

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 14:26	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 14:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	39		5.0		mg/L			05/26/15 17:00	20
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 18:27	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:27	1
Nitrite as N	0.052		0.050		mg/L			05/21/15 18:27	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: PDMW-46_05202015

Lab Sample ID: 680-112765-11

Date Collected: 05/20/15 14:50

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 14:31	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 14:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.60		0.25		mg/L			05/26/15 16:20	1
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 18:28	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:28	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:28	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: PDMW-33R2_05202015

Lab Sample ID: 680-112765-12

Date Collected: 05/20/15 15:42

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 14:35	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 14:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	14		2.5		mg/L			05/26/15 17:00	10
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 18:29	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:29	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:29	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: PDMW-30P_05202015

Lab Sample ID: 680-112765-13

Date Collected: 05/20/15 16:00

Matrix: Water

Date Received: 05/21/15 08:20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 14:40	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 14:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	2.0		0.50		mg/L			05/26/15 17:00	2
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 18:30	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:30	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 18:30	1

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-384313/1-A

Matrix: Water

Analysis Batch: 384501

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 384313

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/22/15 09:35	05/22/15 20:20	1
Lead	10	U	10		ug/L		05/22/15 09:35	05/22/15 20:20	1
Nickel	40	U	40		ug/L		05/22/15 09:35	05/22/15 20:20	1
Zinc	20	U	20		ug/L		05/22/15 09:35	05/22/15 20:20	1

Lab Sample ID: LCS 680-384313/2-A

Matrix: Water

Analysis Batch: 384501

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 384313

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	96.8		ug/L		97	80 - 120
Lead	500	484		ug/L		97	80 - 120
Nickel	100	100		ug/L		100	80 - 120
Zinc	100	100		ug/L		100	80 - 120

Lab Sample ID: MB 680-384639/1-A

Matrix: Water

Analysis Batch: 384988

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 384639

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 13:27	1
Chromium	10	U	10		ug/L		05/26/15 10:40	05/27/15 13:27	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 13:27	1
Nickel	40	U	40		ug/L		05/26/15 10:40	05/27/15 13:27	1
Zinc	20	U	20		ug/L		05/26/15 10:40	05/27/15 13:27	1

Lab Sample ID: LCS 680-384639/2-A

Matrix: Water

Analysis Batch: 384988

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 384639

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	99.6		ug/L		100	80 - 120
Chromium	100	105		ug/L		105	80 - 120
Lead	500	509		ug/L		102	80 - 120
Nickel	100	103		ug/L		103	80 - 120
Zinc	100	104		ug/L		104	80 - 120

Lab Sample ID: 680-112765-5 MS

Matrix: Water

Analysis Batch: 384988

Client Sample ID: EW-01_05202015

Prep Type: Total/NA

Prep Batch: 384639

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	20	U	100	106		ug/L		98	75 - 125
Chromium	10	U	100	109		ug/L		102	75 - 125
Lead	10	U	500	494		ug/L		99	75 - 125
Nickel	44		100	144		ug/L		99	75 - 125
Zinc	190		100	292		ug/L		98	75 - 125

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-112765-5 MSD

Matrix: Water

Analysis Batch: 384988

Client Sample ID: EW-01_05202015

Prep Type: Total/NA

Prep Batch: 384639

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	20	U	100	107		ug/L		99	75 - 125	1	20
Chromium	10	U	100	107		ug/L		100	75 - 125	2	20
Lead	10	U	500	485		ug/L		97	75 - 125	2	20
Nickel	44		100	142		ug/L		98	75 - 125	1	20
Zinc	190		100	284		ug/L		90	75 - 125	3	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-384905/23

Matrix: Water

Analysis Batch: 384905

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			05/26/15 16:15	1

Lab Sample ID: LCS 680-384905/30

Matrix: Water

Analysis Batch: 384905

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.00		mg/L		100	90 - 110

Lab Sample ID: MB 680-384906/47

Matrix: Water

Analysis Batch: 384906

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			05/27/15 10:19	1

Lab Sample ID: LCS 680-384906/29

Matrix: Water

Analysis Batch: 384906

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.00		mg/L		100	90 - 110

Lab Sample ID: LCSD 680-384906/21

Matrix: Water

Analysis Batch: 384906

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.00	1.00		mg/L		100	90 - 110	0	30

Lab Sample ID: 680-112765-5 MS

Matrix: Water

Analysis Batch: 384906

Client Sample ID: EW-01_05202015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	320	F1	200	547	F1	mg/L		113	90 - 110

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 680-112765-5 MSD

Matrix: Water

Analysis Batch: 384906

Client Sample ID: EW-01_05202015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	320	F1	200	538		mg/L		108	90 - 110	2	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-384265/13

Matrix: Water

Analysis Batch: 384265

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 17:28	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 17:28	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 17:28	1

Lab Sample ID: LCS 680-384265/16

Matrix: Water

Analysis Batch: 384265

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.561		mg/L		112	75 - 125
Nitrate Nitrite as N	1.00	1.06		mg/L		106	90 - 110
Nitrite as N	0.500	0.502		mg/L		100	90 - 110

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Metals

Prep Batch: 384313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112765-1	PDMW-10R_05202015	Total/NA	Water	3010A	
680-112765-2	PDMW-45R_05202015	Total/NA	Water	3010A	
680-112765-3	MW-201_05202015	Total/NA	Water	3010A	
680-112765-4	DUP-03_05202015	Total/NA	Water	3010A	
LCS 680-384313/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-384313/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 384501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112765-1	PDMW-10R_05202015	Total/NA	Water	6010C	384313
680-112765-2	PDMW-45R_05202015	Total/NA	Water	6010C	384313
680-112765-3	MW-201_05202015	Total/NA	Water	6010C	384313
680-112765-4	DUP-03_05202015	Total/NA	Water	6010C	384313
LCS 680-384313/2-A	Lab Control Sample	Total/NA	Water	6010C	384313
MB 680-384313/1-A	Method Blank	Total/NA	Water	6010C	384313

Prep Batch: 384639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112765-5	EW-01_05202015	Total/NA	Water	3010A	
680-112765-5 MS	EW-01_05202015	Total/NA	Water	3010A	
680-112765-5 MSD	EW-01_05202015	Total/NA	Water	3010A	
680-112765-6	DUP-02_05202015	Total/NA	Water	3010A	
680-112765-7	MW-1_05202015	Total/NA	Water	3010A	
680-112765-8	PDMW-8R_05202015	Total/NA	Water	3010A	
680-112765-9	PDMW-19P_05202015	Total/NA	Water	3010A	
680-112765-10	PDMW-47_05202015	Total/NA	Water	3010A	
680-112765-11	PDMW-46_05202015	Total/NA	Water	3010A	
680-112765-12	PDMW-33R2_05202015	Total/NA	Water	3010A	
680-112765-13	PDMW-30P_05202015	Total/NA	Water	3010A	
LCS 680-384639/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-384639/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 384988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112765-5	EW-01_05202015	Total/NA	Water	6010C	384639
680-112765-5 MS	EW-01_05202015	Total/NA	Water	6010C	384639
680-112765-5 MSD	EW-01_05202015	Total/NA	Water	6010C	384639
680-112765-6	DUP-02_05202015	Total/NA	Water	6010C	384639
680-112765-7	MW-1_05202015	Total/NA	Water	6010C	384639
680-112765-8	PDMW-8R_05202015	Total/NA	Water	6010C	384639
680-112765-9	PDMW-19P_05202015	Total/NA	Water	6010C	384639
680-112765-10	PDMW-47_05202015	Total/NA	Water	6010C	384639
680-112765-11	PDMW-46_05202015	Total/NA	Water	6010C	384639
680-112765-12	PDMW-33R2_05202015	Total/NA	Water	6010C	384639
680-112765-13	PDMW-30P_05202015	Total/NA	Water	6010C	384639
LCS 680-384639/2-A	Lab Control Sample	Total/NA	Water	6010C	384639
MB 680-384639/1-A	Method Blank	Total/NA	Water	6010C	384639

TestAmerica Savannah

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

General Chemistry

Analysis Batch: 384265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112765-1	PDMW-10R_05202015	Total/NA	Water	353.2	
680-112765-2	PDMW-45R_05202015	Total/NA	Water	353.2	
680-112765-3	MW-201_05202015	Total/NA	Water	353.2	
680-112765-4	DUP-03_05202015	Total/NA	Water	353.2	
680-112765-5	EW-01_05202015	Total/NA	Water	353.2	
680-112765-6	DUP-02_05202015	Total/NA	Water	353.2	
680-112765-7	MW-1_05202015	Total/NA	Water	353.2	
680-112765-8	PDMW-8R_05202015	Total/NA	Water	353.2	
680-112765-9	PDMW-19P_05202015	Total/NA	Water	353.2	
680-112765-10	PDMW-47_05202015	Total/NA	Water	353.2	
680-112765-11	PDMW-46_05202015	Total/NA	Water	353.2	
680-112765-12	PDMW-33R2_05202015	Total/NA	Water	353.2	
680-112765-13	PDMW-30P_05202015	Total/NA	Water	353.2	
LCS 680-384265/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-384265/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 384905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112765-1	PDMW-10R_05202015	Total/NA	Water	350.1	
680-112765-2	PDMW-45R_05202015	Total/NA	Water	350.1	
LCS 680-384905/30	Lab Control Sample	Total/NA	Water	350.1	
MB 680-384905/23	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 384906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112765-3	MW-201_05202015	Total/NA	Water	350.1	
680-112765-4	DUP-03_05202015	Total/NA	Water	350.1	
680-112765-5	EW-01_05202015	Total/NA	Water	350.1	
680-112765-5 MS	EW-01_05202015	Total/NA	Water	350.1	
680-112765-5 MSD	EW-01_05202015	Total/NA	Water	350.1	
680-112765-6	DUP-02_05202015	Total/NA	Water	350.1	
680-112765-7	MW-1_05202015	Total/NA	Water	350.1	
680-112765-8	PDMW-8R_05202015	Total/NA	Water	350.1	
680-112765-9	PDMW-19P_05202015	Total/NA	Water	350.1	
680-112765-10	PDMW-47_05202015	Total/NA	Water	350.1	
680-112765-11	PDMW-46_05202015	Total/NA	Water	350.1	
680-112765-12	PDMW-33R2_05202015	Total/NA	Water	350.1	
680-112765-13	PDMW-30P_05202015	Total/NA	Water	350.1	
LCS 680-384906/29	Lab Control Sample	Total/NA	Water	350.1	
LCSD 680-384906/21	Lab Control Sample Dup	Total/NA	Water	350.1	
MB 680-384906/47	Method Blank	Total/NA	Water	350.1	

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: PDMW-10R_05202015

Date Collected: 05/20/15 11:05

Date Received: 05/21/15 08:20

Lab Sample ID: 680-112765-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384313	05/22/15 09:35	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384501	05/22/15 22:20	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		5	2 mL	2 mL	384905	05/26/15 16:50	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:14	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-45R_05202015

Date Collected: 05/20/15 09:25

Date Received: 05/21/15 08:20

Lab Sample ID: 680-112765-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384313	05/22/15 09:35	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384501	05/22/15 22:24	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		2	2 mL	2 mL	384905	05/26/15 17:19	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:15	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: MW-201_05202015

Date Collected: 05/20/15 08:55

Date Received: 05/21/15 08:20

Lab Sample ID: 680-112765-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384313	05/22/15 09:35	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384501	05/22/15 22:38	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	384906	05/26/15 16:15	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:16	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: DUP-03_05202015

Date Collected: 05/20/15 00:00

Date Received: 05/21/15 08:20

Lab Sample ID: 680-112765-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384313	05/22/15 09:35	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384501	05/22/15 22:43	BCB	TAL SAV
		Instrument ID: ICPE								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: DUP-03_05202015

Lab Sample ID: 680-112765-4

Date Collected: 05/20/15 00:00

Matrix: Water

Date Received: 05/21/15 08:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	2 mL	2 mL	384906	05/26/15 16:20	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:17	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: EW-01_05202015

Lab Sample ID: 680-112765-5

Date Collected: 05/20/15 10:10

Matrix: Water

Date Received: 05/21/15 08:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 13:36	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		400	2 mL	2 mL	384906	05/27/15 10:29	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:18	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: DUP-02_05202015

Lab Sample ID: 680-112765-6

Date Collected: 05/20/15 00:00

Matrix: Water

Date Received: 05/21/15 08:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 13:59	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		200	2 mL	2 mL	384906	05/26/15 18:48	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:19	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: MW-1_05202015

Lab Sample ID: 680-112765-7

Date Collected: 05/20/15 10:47

Matrix: Water

Date Received: 05/21/15 08:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 14:03	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		20	2 mL	2 mL	384906	05/26/15 16:50	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:21	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: PDMW-8R_05202015

Lab Sample ID: 680-112765-8

Date Collected: 05/20/15 13:15

Matrix: Water

Date Received: 05/21/15 08:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 14:08	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		50	2 mL	2 mL	384906	05/26/15 17:23	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:22	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-19P_05202015

Lab Sample ID: 680-112765-9

Date Collected: 05/20/15 13:25

Matrix: Water

Date Received: 05/21/15 08:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 14:21	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		5	2 mL	2 mL	384906	05/26/15 17:00	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:25	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-47_05202015

Lab Sample ID: 680-112765-10

Date Collected: 05/20/15 14:36

Matrix: Water

Date Received: 05/21/15 08:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 14:26	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		20	2 mL	2 mL	384906	05/26/15 17:00	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:27	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-46_05202015

Lab Sample ID: 680-112765-11

Date Collected: 05/20/15 14:50

Matrix: Water

Date Received: 05/21/15 08:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 14:31	BCB	TAL SAV
		Instrument ID: ICPE								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Client Sample ID: PDMW-46_05202015

Lab Sample ID: 680-112765-11

Date Collected: 05/20/15 14:50

Matrix: Water

Date Received: 05/21/15 08:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	2 mL	2 mL	384906	05/26/15 16:20	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:28	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-33R2_05202015

Lab Sample ID: 680-112765-12

Date Collected: 05/20/15 15:42

Matrix: Water

Date Received: 05/21/15 08:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 14:35	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	384906	05/26/15 17:00	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:29	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-30P_05202015

Lab Sample ID: 680-112765-13

Date Collected: 05/20/15 16:00

Matrix: Water

Date Received: 05/21/15 08:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 14:40	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		2	2 mL	2 mL	384906	05/26/15 17:00	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384265	05/21/15 18:30	GRX	TAL SAV
		Instrument ID: LACHAT2								

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

INVOICE MUST BE SUBMITTED TO CSXT WITH ORIGINAL COC	TAL-6006 (0509)
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CHAIN OF CUSTODY TRANSPORTATION				LABORATORY INFORMATION <input checked="" type="checkbox"/> TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165 <input type="checkbox"/> TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772 <input type="checkbox"/> TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049 <input type="checkbox"/> TestAmerica Pensacola - 3355 McLemore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671 <input type="checkbox"/> TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991 <input type="checkbox"/> TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211			
CSXT PROJECT INFORMATION				CONSULTANT INFORMATION			
Project Number: 9415575				Company: Amer Foster Wheeler			
Project Name: Hutchinson Island				Address: 3800 Ezel Rd Ste 100 Aaron Getchell@amerfiw.com			
Contact: Sam Ross ENY05080120647				City State Zip: Nashville, TN 37211 Phone: (615) 636-1541 Fax:			
Turnaround Time: <input checked="" type="checkbox"/> Standard 6-13 Days <input type="checkbox"/> 1 Day Rush Specify # Days _____ <input type="checkbox"/> 2 Day Rush <input type="checkbox"/> 3 Day Rush Other _____				Preservative Codes: 0 = No Preservatives 1 = Hydrochloric Acid 2 = Nitric Acid Matrix Codes: GW = Groundwater WW = Waste Water SW = Surface Water SO = Soil SL = Sludge OI = Oil SOL = Other Solid LIQ = Liquid			
Deliverables: <input checked="" type="checkbox"/> CSXT Standard (Level II) <input type="checkbox"/> Level III <input type="checkbox"/> Level IV EDD Required, Format: _____							
SAMPLE IDENTIFICATION							
Sample Identification		Containers & Number & Type		Sample Collection		Filtered	
PDMW-46_05202015	4	Date	Type	Time	Sampler	Y or N	Comp Code or Grab
PDMW-33R2_05202015	4	5/20/15	PG	1450	N	G	GW
PDMW-30P_05202015	4	5/20/15	JJ	1542	N	G	GW
		5/20/15	PG	1600	N	G	GW
Comments & Special Analytical Requirements:							
Relinquished By: [Signature]				Date/Time: 5/21/15 0750 Received By: [Signature]			
Relinquished By: [Signature]				Date/Time: 5/21/15 0820 Received By: [Signature]			
Relinquished By: [Signature]				Date/Time: 5/21/15 0820 Received By: [Signature]			
Received By Laboratory: [Signature]				Date/Time: 5/21/15 0820 Lab Remarks: [Text]			

Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 680-112765-1

Login Number: 112765

List Source: TestAmerica Savannah

List Number: 1

Creator: Barnett, Eddie T

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112765-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-15 *

* Certification renewal pending - certification considered valid.

TestAmerica Savannah

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-112797-1

Client Project/Site: CSX GA, Hutchinson Island, VRP

For:

AMEC Foster Wheeler E & I, Inc

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Aaron Getchell



Authorized for release by:

6/4/2015 9:54:02 AM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Job ID: 680-112797-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Foster Wheeler E & I, Inc
Project: CSX GA, Hutchinson Island, VRP
Report Number: 680-112797-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 5/21/2015 4:21 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 4.0° C and 5.2° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples TMW_1_05212015 (680-112797-7), DUP_01_05212015 (680-112797-8), EB-01_05212015 (680-112797-9), FB-01_05212015 (680-112797-10) and Trip Blank (680-112797-16) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/28/2015.

Method(s) 8260B: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory: TMW_1_05212015 (680-112797-7) and DUP_01_05212015 (680-112797-8). All of the sample vials have HCL stickers.

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

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples TMW_1_05212015 (680-112797-7), DUP_01_05212015 (680-112797-8), EB-01_05212015 (680-112797-9) and FB-01_05212015 (680-112797-10) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 05/27/2015 and analyzed on 06/02/2015.

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

METALS (ICP)

Samples PDMW-29D_05212015 (680-112797-5), PDMW-26T_05212015 (680-112797-6), TMW_1_05212015 (680-112797-7), DUP_01_05212015 (680-112797-8), EB-01_05212015 (680-112797-9), FB-01_05212015 (680-112797-10) and EB-02_05212015 (680-112797-15) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 05/26/2015 and 05/27/2015 and analyzed on 05/27/2015 and 05/28/2015.

Arsenic failed the recovery criteria low for the MSD of sample TMW_1_05212015 (680-112797-7) in batch 680-385189. Refer to the QC report for details.

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

ALKALINITY

Samples SW-04_05212015_LOW (680-112797-1), SW-03_05212015_LOW (680-112797-2), SW-02_05212015_LOW (680-112797-3), SW-01_05212015_LOW (680-112797-4), SW-02_05212015_HIGH (680-112797-11), SW-01_05212015_HIGH (680-112797-12), SW-03_05212015_HIGH (680-112797-13) and SW-04_05212015_HIGH (680-112797-14) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 05/28/2015 and 05/29/2015.

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

Case Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Job ID: 680-112797-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

AMMONIA

Samples SW-04_05212015_LOW (680-112797-1), SW-03_05212015_LOW (680-112797-2), SW-02_05212015_LOW (680-112797-3), SW-01_05212015_LOW (680-112797-4), PDMW-29D_05212015 (680-112797-5), PDMW-26T_05212015 (680-112797-6), TMW_1_05212015 (680-112797-7), DUP_01_05212015 (680-112797-8), EB-01_05212015 (680-112797-9), FB-01_05212015 (680-112797-10), SW-02_05212015_HIGH (680-112797-11), SW-01_05212015_HIGH (680-112797-12), SW-03_05212015_HIGH (680-112797-13), SW-04_05212015_HIGH (680-112797-14) and EB-02_05212015 (680-112797-15) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were analyzed on 05/27/2015.

Method(s) 350.1: The reference method requires samples to be preserved to a pH of <2. The following samples were received with insufficient preservation at a pH of 6: TMW_1_05212015 (680-112797-7) and DUP_01_05212015 (680-112797-8). The samples were preserved to the appropriate pH in the laboratory.

Ammonia recovery is outside criteria high for the MS of sample TMW_1_05212015 (680-112797-7) in batch 680-384908.

Ammonia recovery is outside criteria low for the MSD of sample TMW_1_05212015 (680-112797-7) in batch 680-384908.

Refer to the QC report for details.

Samples SW-04_05212015_LOW (680-112797-1)[2X], PDMW-29D_05212015 (680-112797-5)[10X], PDMW-26T_05212015 (680-112797-6)[500X], TMW_1_05212015 (680-112797-7)[5000X], DUP_01_05212015 (680-112797-8)[2000X] and SW-02_05212015_HIGH (680-112797-11)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

NITRATE-NITRITE AS NITROGEN

Samples SW-04_05212015_LOW (680-112797-1), SW-03_05212015_LOW (680-112797-2), SW-02_05212015_LOW (680-112797-3), SW-01_05212015_LOW (680-112797-4), PDMW-29D_05212015 (680-112797-5), PDMW-26T_05212015 (680-112797-6), TMW_1_05212015 (680-112797-7), DUP_01_05212015 (680-112797-8), EB-01_05212015 (680-112797-9), FB-01_05212015 (680-112797-10), SW-02_05212015_HIGH (680-112797-11), SW-01_05212015_HIGH (680-112797-12), SW-03_05212015_HIGH (680-112797-13), SW-04_05212015_HIGH (680-112797-14) and EB-02_05212015 (680-112797-15) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 05/21/2015.

Nitrate Nitrite as N and Nitrite as N have recovery outside criteria low for the MS and/or MSD of sample TMW_1_05212015 (680-112797-7) in batch 680-384267. Refer to the QC report for details.

Samples TMW_1_05212015 (680-112797-7)[1000X] and DUP_01_05212015 (680-112797-8)[1000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-112797-1	SW-04_05212015_LOW	Water	05/21/15 08:20	05/21/15 16:21
680-112797-2	SW-03_05212015_LOW	Water	05/21/15 08:45	05/21/15 16:21
680-112797-3	SW-02_05212015_LOW	Water	05/21/15 09:02	05/21/15 16:21
680-112797-4	SW-01_05212015_LOW	Water	05/21/15 09:15	05/21/15 16:21
680-112797-5	PDMW-29D_05212015	Water	05/21/15 10:26	05/21/15 16:21
680-112797-6	PDMW-26T_05212015	Water	05/21/15 11:32	05/21/15 16:21
680-112797-7	TMW_1_05212015	Water	05/21/15 10:40	05/21/15 16:21
680-112797-8	DUP_01_05212015	Water	05/21/15 00:00	05/21/15 16:21
680-112797-9	EB-01_05212015	Water	05/21/15 12:40	05/21/15 16:21
680-112797-10	FB-01_05212015	Water	05/21/15 13:00	05/21/15 16:21
680-112797-11	SW-02_05212015_HIGH	Water	05/21/15 12:10	05/21/15 16:21
680-112797-12	SW-01_05212015_HIGH	Water	05/21/15 12:20	05/21/15 16:21
680-112797-13	SW-03_05212015_HIGH	Water	05/21/15 13:00	05/21/15 16:21
680-112797-14	SW-04_05212015_HIGH	Water	05/21/15 13:10	05/21/15 16:21
680-112797-15	EB-02_05212015	Water	05/21/15 13:30	05/21/15 16:21
680-112797-16	Trip Blank	Water	05/21/15 00:00	05/21/15 16:21

Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: SW-04_05212015_LOW

Lab Sample ID: 680-112797-1

Date Collected: 05/21/15 08:20

Matrix: Water

Date Received: 05/21/15 16:21

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	120		5.0		mg/L			05/28/15 18:02	1
Ammonia	1.5		0.50		mg/L			05/27/15 09:59	2
Nitrate as N	0.17		0.050		mg/L			05/21/15 19:23	1
Nitrate Nitrite as N	0.27		0.050		mg/L			05/21/15 19:23	1
Nitrite as N	0.094		0.050		mg/L			05/21/15 19:23	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: SW-03_05212015_LOW

Lab Sample ID: 680-112797-2

Date Collected: 05/21/15 08:45

Matrix: Water

Date Received: 05/21/15 16:21

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	120		5.0		mg/L			05/28/15 18:38	1
Ammonia	0.80		0.25		mg/L			05/27/15 09:05	1
Nitrate as N	0.21		0.050		mg/L			05/21/15 19:25	1
Nitrate Nitrite as N	0.23		0.050		mg/L			05/21/15 19:25	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:25	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: SW-02_05212015_LOW

Lab Sample ID: 680-112797-3

Date Collected: 05/21/15 09:02

Matrix: Water

Date Received: 05/21/15 16:21

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	130		5.0		mg/L			05/29/15 08:11	1
Ammonia	1.5		0.25		mg/L			05/27/15 09:05	1
Nitrate as N	0.28		0.050		mg/L			05/21/15 19:26	1
Nitrate Nitrite as N	0.37		0.050		mg/L			05/21/15 19:26	1
Nitrite as N	0.085		0.050		mg/L			05/21/15 19:26	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: SW-01_05212015_LOW

Lab Sample ID: 680-112797-4

Date Collected: 05/21/15 09:15

Matrix: Water

Date Received: 05/21/15 16:21

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	77		5.0		mg/L			05/28/15 20:27	1
Ammonia	0.62		0.25		mg/L			05/27/15 09:05	1
Nitrate as N	0.27		0.050		mg/L			05/21/15 19:28	1
Nitrate Nitrite as N	0.31		0.050		mg/L			05/21/15 19:28	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:28	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: PDMW-29D_05212015

Lab Sample ID: 680-112797-5

Date Collected: 05/21/15 10:26

Matrix: Water

Date Received: 05/21/15 16:21

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 14:44	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 14:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	11		2.5		mg/L			05/27/15 11:36	10
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 19:29	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:29	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:29	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: PDMW-26T_05212015

Lab Sample ID: 680-112797-6

Date Collected: 05/21/15 11:32

Matrix: Water

Date Received: 05/21/15 16:21

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	25		20		ug/L		05/27/15 14:38	05/28/15 18:27	1
Lead	10	U	10		ug/L		05/27/15 14:38	05/28/15 18:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	550		130		mg/L			05/27/15 13:18	500
Nitrate as N	0.26		0.050		mg/L			05/21/15 19:30	1
Nitrate Nitrite as N	0.28		0.050		mg/L			05/21/15 19:30	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:30	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: TMW_1_05212015

Lab Sample ID: 680-112797-7

Date Collected: 05/21/15 10:40

Matrix: Water

Date Received: 05/21/15 16:21

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	47		1.0		ug/L			05/28/15 16:25	1
Ethylbenzene	1.0	U	1.0		ug/L			05/28/15 16:25	1
Toluene	1.0	U	1.0		ug/L			05/28/15 16:25	1
Xylenes, Total	110		1.0		ug/L			05/28/15 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		70 - 130		05/28/15 16:25	1
1,2-Dichloroethane-d4 (Surr)	119		70 - 130		05/28/15 16:25	1
Dibromofluoromethane (Surr)	115		70 - 130		05/28/15 16:25	1
4-Bromofluorobenzene (Surr)	96		70 - 130		05/28/15 16:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Acenaphthylene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Anthracene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Benzo[a]anthracene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Benzo[a]pyrene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Benzo[b]fluoranthene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Benzo[g,h,i]perylene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Benzo[k]fluoranthene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Chrysene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Dibenz(a,h)anthracene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Fluoranthene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Fluorene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Indeno[1,2,3-cd]pyrene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
1-Methylnaphthalene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
2-Methylnaphthalene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Naphthalene	40		9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Phenanthrene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1
Pyrene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 20:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	55		32 - 114	05/27/15 15:58	06/02/15 20:01	1
Nitrobenzene-d5 (Surr)	65		30 - 117	05/27/15 15:58	06/02/15 20:01	1
Terphenyl-d14 (Surr)	30		10 - 132	05/27/15 15:58	06/02/15 20:01	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	160	F1	20		ug/L		05/27/15 14:38	05/28/15 18:32	1
Chromium	32		10		ug/L		05/27/15 14:38	05/28/15 18:32	1
Lead	10	U	10		ug/L		05/27/15 14:38	05/28/15 18:32	1
Nickel	40	U	40		ug/L		05/27/15 14:38	05/28/15 18:32	1
Zinc	77		20		ug/L		05/27/15 14:38	05/28/15 18:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	4300		1300		mg/L			05/27/15 11:27	5000
Nitrate as N	290		50		mg/L			05/21/15 19:37	1000
Nitrate Nitrite as N	290	F1	50		mg/L			05/21/15 19:37	1000

TestAmerica Savannah

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: TMW_1_05212015

Lab Sample ID: 680-112797-7

Date Collected: 05/21/15 10:40

Matrix: Water

Date Received: 05/21/15 16:21

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	50	U F1	50		mg/L			05/21/15 19:37	1000

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: DUP_01_05212015

Lab Sample ID: 680-112797-8

Date Collected: 05/21/15 00:00

Matrix: Water

Date Received: 05/21/15 16:21

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	48		1.0		ug/L			05/28/15 16:48	1
Ethylbenzene	1.0	U	1.0		ug/L			05/28/15 16:48	1
Toluene	1.0	U	1.0		ug/L			05/28/15 16:48	1
Xylenes, Total	120		1.0		ug/L			05/28/15 16:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		70 - 130		05/28/15 16:48	1
1,2-Dichloroethane-d4 (Surr)	114		70 - 130		05/28/15 16:48	1
Dibromofluoromethane (Surr)	112		70 - 130		05/28/15 16:48	1
4-Bromofluorobenzene (Surr)	95		70 - 130		05/28/15 16:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Acenaphthylene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Anthracene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Benzo[a]anthracene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Benzo[a]pyrene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Benzo[b]fluoranthene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Benzo[g,h,i]perylene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Benzo[k]fluoranthene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Chrysene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Dibenz(a,h)anthracene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Fluoranthene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Fluorene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Indeno[1,2,3-cd]pyrene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
1-Methylnaphthalene	11		9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
2-Methylnaphthalene	11		9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Naphthalene	44		9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Phenanthrene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1
Pyrene	9.9	U	9.9		ug/L		05/27/15 15:58	06/02/15 20:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	63		32 - 114	05/27/15 15:58	06/02/15 20:27	1
Nitrobenzene-d5 (Surr)	70		30 - 117	05/27/15 15:58	06/02/15 20:27	1
Terphenyl-d14 (Surr)	36		10 - 132	05/27/15 15:58	06/02/15 20:27	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	140		20		ug/L		05/27/15 14:38	05/28/15 18:55	1
Chromium	19		10		ug/L		05/27/15 14:38	05/28/15 18:55	1
Lead	10	U	10		ug/L		05/27/15 14:38	05/28/15 18:55	1
Nickel	40	U	40		ug/L		05/27/15 14:38	05/28/15 18:55	1
Zinc	72		20		ug/L		05/27/15 14:38	05/28/15 18:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	3700		500		mg/L			05/27/15 10:00	2000
Nitrate as N	280		50		mg/L			05/21/15 19:31	1000
Nitrate Nitrite as N	290		50		mg/L			05/21/15 19:31	1000

TestAmerica Savannah

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: DUP_01_05212015

Lab Sample ID: 680-112797-8

Date Collected: 05/21/15 00:00

Matrix: Water

Date Received: 05/21/15 16:21

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	50	U	50		mg/L			05/21/15 19:31	1000

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: EB-01_05212015

Lab Sample ID: 680-112797-9

Date Collected: 05/21/15 12:40

Matrix: Water

Date Received: 05/21/15 16:21

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			05/28/15 12:39	1
Ethylbenzene	1.0	U	1.0		ug/L			05/28/15 12:39	1
Toluene	1.0	U	1.0		ug/L			05/28/15 12:39	1
Xylenes, Total	1.0	U	1.0		ug/L			05/28/15 12:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		05/28/15 12:39	1
1,2-Dichloroethane-d4 (Surr)	117		70 - 130		05/28/15 12:39	1
Dibromofluoromethane (Surr)	111		70 - 130		05/28/15 12:39	1
4-Bromofluorobenzene (Surr)	95		70 - 130		05/28/15 12:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Acenaphthylene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Anthracene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Benzo[a]anthracene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Benzo[a]pyrene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Benzo[b]fluoranthene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Benzo[g,h,i]perylene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Benzo[k]fluoranthene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Chrysene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Dibenz(a,h)anthracene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Fluoranthene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Fluorene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Indeno[1,2,3-cd]pyrene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
1-Methylnaphthalene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
2-Methylnaphthalene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Naphthalene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Phenanthrene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1
Pyrene	9.8	U	9.8		ug/L		05/27/15 15:58	06/02/15 20:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	71		32 - 114	05/27/15 15:58	06/02/15 20:53	1
Nitrobenzene-d5 (Surr)	85		30 - 117	05/27/15 15:58	06/02/15 20:53	1
Terphenyl-d14 (Surr)	77		10 - 132	05/27/15 15:58	06/02/15 20:53	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 14:49	1
Chromium	10	U	10		ug/L		05/26/15 10:40	05/27/15 14:49	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 14:49	1
Nickel	40	U	40		ug/L		05/26/15 10:40	05/27/15 14:49	1
Zinc	20	U	20		ug/L		05/26/15 10:40	05/27/15 14:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.31		0.25		mg/L			05/27/15 08:55	1
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 19:32	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:32	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: EB-01_05212015

Lab Sample ID: 680-112797-9

Date Collected: 05/21/15 12:40

Matrix: Water

Date Received: 05/21/15 16:21

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:32	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: FB-01_05212015

Lab Sample ID: 680-112797-10

Date Collected: 05/21/15 13:00

Matrix: Water

Date Received: 05/21/15 16:21

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			05/28/15 13:01	1
Ethylbenzene	1.0	U	1.0		ug/L			05/28/15 13:01	1
Toluene	1.0	U	1.0		ug/L			05/28/15 13:01	1
Xylenes, Total	1.0	U	1.0		ug/L			05/28/15 13:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130		05/28/15 13:01	1
1,2-Dichloroethane-d4 (Surr)	117		70 - 130		05/28/15 13:01	1
Dibromofluoromethane (Surr)	109		70 - 130		05/28/15 13:01	1
4-Bromofluorobenzene (Surr)	94		70 - 130		05/28/15 13:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Acenaphthylene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Anthracene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Benzo[a]anthracene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Benzo[a]pyrene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Benzo[b]fluoranthene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Benzo[g,h,i]perylene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Benzo[k]fluoranthene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Chrysene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Dibenz(a,h)anthracene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Fluoranthene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Fluorene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Indeno[1,2,3-cd]pyrene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
1-Methylnaphthalene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
2-Methylnaphthalene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Naphthalene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Phenanthrene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1
Pyrene	9.7	U	9.7		ug/L		05/27/15 15:58	06/02/15 21:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	69		32 - 114	05/27/15 15:58	06/02/15 21:18	1
Nitrobenzene-d5 (Surr)	79		30 - 117	05/27/15 15:58	06/02/15 21:18	1
Terphenyl-d14 (Surr)	73		10 - 132	05/27/15 15:58	06/02/15 21:18	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 14:53	1
Chromium	10	U	10		ug/L		05/26/15 10:40	05/27/15 14:53	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 14:53	1
Nickel	40	U	40		ug/L		05/26/15 10:40	05/27/15 14:53	1
Zinc	20	U	20		ug/L		05/26/15 10:40	05/27/15 14:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			05/27/15 08:55	1
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 19:34	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:34	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: FB-01_05212015

Lab Sample ID: 680-112797-10

Date Collected: 05/21/15 13:00

Matrix: Water

Date Received: 05/21/15 16:21

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:34	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: SW-02_05212015_HIGH

Lab Sample ID: 680-112797-11

Date Collected: 05/21/15 12:10

Matrix: Water

Date Received: 05/21/15 16:21

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	39		5.0		mg/L			05/28/15 18:16	1
Ammonia	0.52		0.50		mg/L			05/27/15 10:19	2
Nitrate as N	0.29		0.050		mg/L			05/21/15 19:38	1
Nitrate Nitrite as N	0.30		0.050		mg/L			05/21/15 19:38	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:38	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: SW-01_05212015_HIGH

Lab Sample ID: 680-112797-12

Date Collected: 05/21/15 12:20

Matrix: Water

Date Received: 05/21/15 16:21

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	39		5.0		mg/L			05/28/15 18:09	1
Ammonia	0.41		0.25		mg/L			05/27/15 08:55	1
Nitrate as N	0.28		0.050		mg/L			05/21/15 19:39	1
Nitrate Nitrite as N	0.29		0.050		mg/L			05/21/15 19:39	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:39	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: SW-03_05212015_HIGH

Lab Sample ID: 680-112797-13

Date Collected: 05/21/15 13:00

Matrix: Water

Date Received: 05/21/15 16:21

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	71		5.0		mg/L			05/28/15 18:23	1
Ammonia	0.91		0.25		mg/L			05/27/15 09:05	1
Nitrate as N	0.27		0.050		mg/L			05/21/15 19:41	1
Nitrate Nitrite as N	0.32		0.050		mg/L			05/21/15 19:41	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:41	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: SW-04_05212015_HIGH

Lab Sample ID: 680-112797-14

Date Collected: 05/21/15 13:10

Matrix: Water

Date Received: 05/21/15 16:21

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	100		5.0		mg/L			05/28/15 18:31	1
Ammonia	0.83		0.25		mg/L			05/27/15 09:05	1
Nitrate as N	0.25		0.050		mg/L			05/21/15 19:42	1
Nitrate Nitrite as N	0.31		0.050		mg/L			05/21/15 19:42	1
Nitrite as N	0.060		0.050		mg/L			05/21/15 19:42	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: EB-02_05212015

Lab Sample ID: 680-112797-15

Date Collected: 05/21/15 13:30

Matrix: Water

Date Received: 05/21/15 16:21

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 15:01	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 15:01	1
Nickel	40	U	40		ug/L		05/26/15 10:40	05/27/15 15:01	1
Zinc	20	U	20		ug/L		05/26/15 10:40	05/27/15 15:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			05/27/15 09:05	1
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 19:43	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:43	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 19:43	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: Trip Blank

Lab Sample ID: 680-112797-16

Date Collected: 05/21/15 00:00

Matrix: Water

Date Received: 05/21/15 16:21

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			05/28/15 11:31	1
Ethylbenzene	1.0	U	1.0		ug/L			05/28/15 11:31	1
Toluene	1.0	U	1.0		ug/L			05/28/15 11:31	1
Xylenes, Total	1.0	U	1.0		ug/L			05/28/15 11:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		05/28/15 11:31	1
1,2-Dichloroethane-d4 (Surr)	117		70 - 130		05/28/15 11:31	1
Dibromofluoromethane (Surr)	112		70 - 130		05/28/15 11:31	1
4-Bromofluorobenzene (Surr)	96		70 - 130		05/28/15 11:31	1

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-384972/9

Matrix: Water

Analysis Batch: 384972

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			05/28/15 11:00	1
Ethylbenzene	1.0	U	1.0		ug/L			05/28/15 11:00	1
Toluene	1.0	U	1.0		ug/L			05/28/15 11:00	1
Xylenes, Total	1.0	U	1.0		ug/L			05/28/15 11:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130		05/28/15 11:00	1
1,2-Dichloroethane-d4 (Surr)	115		70 - 130		05/28/15 11:00	1
Dibromofluoromethane (Surr)	108		70 - 130		05/28/15 11:00	1
4-Bromofluorobenzene (Surr)	97		70 - 130		05/28/15 11:00	1

Lab Sample ID: LCS 680-384972/4

Matrix: Water

Analysis Batch: 384972

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	45.7		ug/L		91	73 - 131
Ethylbenzene	50.0	51.8		ug/L		104	80 - 120
Toluene	50.0	49.0		ug/L		98	80 - 122
Xylenes, Total	100	108		ug/L		108	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		70 - 130
1,2-Dichloroethane-d4 (Surr)	119		70 - 130
Dibromofluoromethane (Surr)	111		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130

Lab Sample ID: LCSD 680-384972/5

Matrix: Water

Analysis Batch: 384972

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	46.5		ug/L		93	73 - 131	2	30
Ethylbenzene	50.0	52.1		ug/L		104	80 - 120	1	20
Toluene	50.0	49.5		ug/L		99	80 - 122	1	20
Xylenes, Total	100	109		ug/L		109	80 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	100		70 - 130
1,2-Dichloroethane-d4 (Surr)	119		70 - 130
Dibromofluoromethane (Surr)	110		70 - 130
4-Bromofluorobenzene (Surr)	102		70 - 130

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QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

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

Lab Sample ID: 680-112797-7 MS

Matrix: Water

Analysis Batch: 384972

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	47		50.0	92.0		ug/L		90	73 - 131
Ethylbenzene	1.0	U	50.0	50.6		ug/L		101	80 - 120
Toluene	1.0	U	50.0	49.5		ug/L		99	80 - 122
Xylenes, Total	110		100	224		ug/L		111	80 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	100		70 - 130
1,2-Dichloroethane-d4 (Surr)	116		70 - 130
Dibromofluoromethane (Surr)	108		70 - 130
4-Bromofluorobenzene (Surr)	86		70 - 130

Lab Sample ID: 680-112797-7 MSD

Matrix: Water

Analysis Batch: 384972

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	47		50.0	92.0		ug/L		90	73 - 131	0	30
Ethylbenzene	1.0	U	50.0	52.7		ug/L		105	80 - 120	4	20
Toluene	1.0	U	50.0	50.3		ug/L		101	80 - 122	2	20
Xylenes, Total	110		100	206		ug/L		93	80 - 120	8	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	101		70 - 130
1,2-Dichloroethane-d4 (Surr)	114		70 - 130
Dibromofluoromethane (Surr)	109		70 - 130
4-Bromofluorobenzene (Surr)	82		70 - 130

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

Lab Sample ID: MB 680-384797/5-A

Matrix: Water

Analysis Batch: 385722

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 384797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Acenaphthylene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Anthracene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Benzo[a]anthracene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Benzo[a]pyrene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Benzo[b]fluoranthene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Benzo[g,h,i]perylene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Benzo[k]fluoranthene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Chrysene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Dibenz(a,h)anthracene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Fluoranthene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Fluorene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

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

Lab Sample ID: MB 680-384797/5-A

Matrix: Water

Analysis Batch: 385722

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 384797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
2-Methylnaphthalene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Naphthalene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Phenanthrene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1
Pyrene	10	U	10		ug/L		05/27/15 15:58	06/02/15 18:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	71		32 - 114	05/27/15 15:58	06/02/15 18:44	1
Nitrobenzene-d5 (Surr)	80		30 - 117	05/27/15 15:58	06/02/15 18:44	1
Terphenyl-d14 (Surr)	75		10 - 132	05/27/15 15:58	06/02/15 18:44	1

Lab Sample ID: LCS 680-384797/6-A

Matrix: Water

Analysis Batch: 385722

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 384797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	67.4		ug/L		67	32 - 107
Acenaphthylene	100	62.6		ug/L		63	10 - 119
Anthracene	100	79.1		ug/L		79	38 - 112
Benzo[a]anthracene	100	77.0		ug/L		77	36 - 115
Benzo[a]pyrene	100	72.9		ug/L		73	13 - 120
Benzo[b]fluoranthene	100	80.2		ug/L		80	32 - 117
Benzo[g,h,i]perylene	100	76.5		ug/L		76	21 - 118
Benzo[k]fluoranthene	100	72.5		ug/L		73	28 - 125
Chrysene	100	71.1		ug/L		71	36 - 113
Dibenz(a,h)anthracene	100	82.4		ug/L		82	32 - 115
Fluoranthene	100	83.0		ug/L		83	41 - 113
Fluorene	100	69.2		ug/L		69	39 - 115
Indeno[1,2,3-cd]pyrene	100	79.1		ug/L		79	16 - 119
1-Methylnaphthalene	100	68.7		ug/L		69	26 - 94
2-Methylnaphthalene	100	68.2		ug/L		68	24 - 92
Naphthalene	100	67.8		ug/L		68	24 - 85
Phenanthrene	100	78.5		ug/L		78	40 - 114
Pyrene	100	77.0		ug/L		77	29 - 118

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	64		32 - 114
Nitrobenzene-d5 (Surr)	71		30 - 117
Terphenyl-d14 (Surr)	70		10 - 132

Lab Sample ID: 680-112797-7 MS

Matrix: Water

Analysis Batch: 385722

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Prep Batch: 384797

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	9.7	U	97.8	67.9		ug/L		69	32 - 107
Acenaphthylene	9.7	U	97.8	57.4		ug/L		59	10 - 119
Anthracene	9.7	U	97.8	74.1		ug/L		76	38 - 112

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QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

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

Lab Sample ID: 680-112797-7 MS

Matrix: Water

Analysis Batch: 385722

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Prep Batch: 384797

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	9.7	U	97.8	52.4		ug/L		54	36 - 115
Benzo[a]pyrene	9.7	U	97.8	43.2		ug/L		44	13 - 120
Benzo[b]fluoranthene	9.7	U	97.8	45.9		ug/L		47	32 - 117
Benzo[g,h,i]perylene	9.7	U	97.8	42.6		ug/L		44	21 - 118
Benzo[k]fluoranthene	9.7	U	97.8	42.2		ug/L		43	28 - 125
Chrysene	9.7	U	97.8	48.3		ug/L		49	36 - 113
Dibenz(a,h)anthracene	9.7	U	97.8	46.4		ug/L		47	32 - 115
Fluoranthene	9.7	U	97.8	70.6		ug/L		72	41 - 113
Fluorene	9.7	U	97.8	67.8		ug/L		69	39 - 115
Indeno[1,2,3-cd]pyrene	9.7	U	97.8	48.7		ug/L		50	16 - 119
1-Methylnaphthalene	9.7	U	97.8	69.0		ug/L		61	26 - 94
2-Methylnaphthalene	9.7	U	97.8	70.9		ug/L		64	24 - 92
Naphthalene	40		97.8	96.9		ug/L		58	24 - 85
Phenanthrene	9.7	U	97.8	77.6		ug/L		79	40 - 114
Pyrene	9.7	U	97.8	62.5		ug/L		64	29 - 118

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Fluorobiphenyl	62		32 - 114
Nitrobenzene-d5 (Surr)	68		30 - 117
Terphenyl-d14 (Surr)	31		10 - 132

Lab Sample ID: 680-112797-7 MSD

Matrix: Water

Analysis Batch: 385722

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Prep Batch: 384797

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Acenaphthene	9.7	U	97.4	63.1		ug/L		65	32 - 107	7	20
Acenaphthylene	9.7	U	97.4	52.4		ug/L		54	10 - 119	9	20
Anthracene	9.7	U	97.4	69.8		ug/L		72	38 - 112	6	20
Benzo[a]anthracene	9.7	U	97.4	51.7		ug/L		53	36 - 115	1	40
Benzo[a]pyrene	9.7	U	97.4	41.6		ug/L		43	13 - 120	4	40
Benzo[b]fluoranthene	9.7	U	97.4	44.8		ug/L		46	32 - 117	2	50
Benzo[g,h,i]perylene	9.7	U	97.4	41.5		ug/L		43	21 - 118	3	50
Benzo[k]fluoranthene	9.7	U	97.4	40.0		ug/L		41	28 - 125	5	40
Chrysene	9.7	U	97.4	46.7		ug/L		48	36 - 113	3	50
Dibenz(a,h)anthracene	9.7	U	97.4	41.8		ug/L		43	32 - 115	10	40
Fluoranthene	9.7	U	97.4	65.5		ug/L		67	41 - 113	7	40
Fluorene	9.7	U	97.4	64.0		ug/L		66	39 - 115	6	20
Indeno[1,2,3-cd]pyrene	9.7	U	97.4	43.9		ug/L		45	16 - 119	10	40
1-Methylnaphthalene	9.7	U	97.4	65.0		ug/L		57	26 - 94	6	50
2-Methylnaphthalene	9.7	U	97.4	66.6		ug/L		60	24 - 92	6	30
Naphthalene	40		97.4	94.7		ug/L		57	24 - 85	2	40
Phenanthrene	9.7	U	97.4	71.2		ug/L		73	40 - 114	9	40
Pyrene	9.7	U	97.4	61.5		ug/L		63	29 - 118	2	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2-Fluorobiphenyl	54		32 - 114

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QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

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

Lab Sample ID: 680-112797-7 MSD

Matrix: Water

Analysis Batch: 385722

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Prep Batch: 384797

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Nitrobenzene-d5 (Surr)	60		30 - 117
Terphenyl-d14 (Surr)	30		10 - 132

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-384639/1-A

Matrix: Water

Analysis Batch: 384988

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 384639

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/26/15 10:40	05/27/15 13:27	1
Chromium	10	U	10		ug/L		05/26/15 10:40	05/27/15 13:27	1
Lead	10	U	10		ug/L		05/26/15 10:40	05/27/15 13:27	1
Nickel	40	U	40		ug/L		05/26/15 10:40	05/27/15 13:27	1
Zinc	20	U	20		ug/L		05/26/15 10:40	05/27/15 13:27	1

Lab Sample ID: LCS 680-384639/2-A

Matrix: Water

Analysis Batch: 384988

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 384639

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	99.6		ug/L		100	80 - 120
Chromium	100	105		ug/L		105	80 - 120
Lead	500	509		ug/L		102	80 - 120
Nickel	100	103		ug/L		103	80 - 120
Zinc	100	104		ug/L		104	80 - 120

Lab Sample ID: MB 680-384879/1-A

Matrix: Water

Analysis Batch: 385189

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 384879

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		05/27/15 14:38	05/28/15 18:18	1
Chromium	10	U	10		ug/L		05/27/15 14:38	05/28/15 18:18	1
Lead	10	U	10		ug/L		05/27/15 14:38	05/28/15 18:18	1
Nickel	40	U	40		ug/L		05/27/15 14:38	05/28/15 18:18	1
Zinc	20	U	20		ug/L		05/27/15 14:38	05/28/15 18:18	1

Lab Sample ID: LCS 680-384879/2-A

Matrix: Water

Analysis Batch: 385189

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 384879

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	97.6		ug/L		98	80 - 120
Chromium	100	103		ug/L		103	80 - 120
Lead	500	492		ug/L		98	80 - 120
Nickel	100	102		ug/L		102	80 - 120
Zinc	100	102		ug/L		102	80 - 120

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QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-112797-7 MS

Matrix: Water

Analysis Batch: 385189

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Prep Batch: 384879

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	160	F1	100	250		ug/L		88	75 - 125
Chromium	32		100	123		ug/L		91	75 - 125
Lead	10	U	500	493		ug/L		99	75 - 125
Nickel	40	U	100	128		ug/L		95	75 - 125
Zinc	77		100	171		ug/L		94	75 - 125

Lab Sample ID: 680-112797-7 MSD

Matrix: Water

Analysis Batch: 385189

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Prep Batch: 384879

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	160	F1	100	227	F1	ug/L		65	75 - 125	10	20
Chromium	32		100	120		ug/L		88	75 - 125	3	20
Lead	10	U	500	481		ug/L		96	75 - 125	3	20
Nickel	40	U	100	125		ug/L		92	75 - 125	2	20
Zinc	77		100	170		ug/L		93	75 - 125	1	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-385163/5

Matrix: Water

Analysis Batch: 385163

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			05/28/15 17:47	1

Lab Sample ID: LCS 680-385163/6

Matrix: Water

Analysis Batch: 385163

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	251		mg/L		100	80 - 120

Lab Sample ID: LCSD 680-385163/31

Matrix: Water

Analysis Batch: 385163

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	250		mg/L		100	80 - 120	0	30

Lab Sample ID: MB 680-385222/5

Matrix: Water

Analysis Batch: 385222

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			05/29/15 06:16	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: LCS 680-385222/6

Matrix: Water

Analysis Batch: 385222

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	253		mg/L		101	80 - 120

Lab Sample ID: LCSD 680-385222/32

Matrix: Water

Analysis Batch: 385222

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	264		mg/L		106	80 - 120	4	30

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-384907/30

Matrix: Water

Analysis Batch: 384907

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			05/27/15 10:19	1

Lab Sample ID: LCS 680-384907/1

Matrix: Water

Analysis Batch: 384907

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.01		mg/L		101	90 - 110

Lab Sample ID: LCSD 680-384907/4

Matrix: Water

Analysis Batch: 384907

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.00	1.02		mg/L		102	90 - 110	1	30

Lab Sample ID: MB 680-384908/37

Matrix: Water

Analysis Batch: 384908

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			05/27/15 10:19	1

Lab Sample ID: LCS 680-384908/1

Matrix: Water

Analysis Batch: 384908

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.01		mg/L		101	90 - 110

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCSD 680-384908/10

Matrix: Water

Analysis Batch: 384908

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.00	1.01		mg/L		101	90 - 110	0	30

Lab Sample ID: 680-112797-7 MS

Matrix: Water

Analysis Batch: 384908

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	4300		100	4720	4	mg/L		377	90 - 110		

Lab Sample ID: 680-112797-7 MSD

Matrix: Water

Analysis Batch: 384908

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	4300		100	3830	4	mg/L		-512	90 - 110	21	30

Lab Sample ID: 680-112797-12 DU

Matrix: Water

Analysis Batch: 384908

Client Sample ID: SW-01_05212015_HIGH

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	0.41			0.400		mg/L				1	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-384267/13

Matrix: Water

Analysis Batch: 384267

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			05/21/15 17:28	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			05/21/15 17:28	1
Nitrite as N	0.050	U	0.050		mg/L			05/21/15 17:28	1

Lab Sample ID: LCS 680-384267/16

Matrix: Water

Analysis Batch: 384267

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.500	0.561		mg/L		112	75 - 125		
Nitrate Nitrite as N	1.00	1.06		mg/L		106	90 - 110		
Nitrite as N	0.500	0.502		mg/L		100	90 - 110		

Lab Sample ID: 680-112797-7 MS

Matrix: Water

Analysis Batch: 384267

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	290		500	730		mg/L		88	75 - 125		

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: 680-112797-7 MS

Matrix: Water

Analysis Batch: 384267

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	290	F1	1000	1130	F1	mg/L		84	90 - 110
Nitrite as N	50	U F1	500	405	F1	mg/L		81	90 - 110

Lab Sample ID: 680-112797-7 MSD

Matrix: Water

Analysis Batch: 384267

Client Sample ID: TMW_1_05212015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	290		500	732		mg/L		89	75 - 125	0	30
Nitrate Nitrite as N	290	F1	1000	1140	F1	mg/L		85	90 - 110	0	10
Nitrite as N	50	U F1	500	406	F1	mg/L		81	90 - 110	0	10

Lab Sample ID: 680-112797-1 DU

Matrix: Water

Analysis Batch: 384267

Client Sample ID: SW-04_05212015_LOW

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	0.17		0.177		mg/L		3	30
Nitrate Nitrite as N	0.27		0.270		mg/L		2	10
Nitrite as N	0.094		0.0929		mg/L		1	10

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

GC/MS VOA

Analysis Batch: 384972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-7	TMW_1_05212015	Total/NA	Water	8260B	
680-112797-7 MS	TMW_1_05212015	Total/NA	Water	8260B	
680-112797-7 MSD	TMW_1_05212015	Total/NA	Water	8260B	
680-112797-8	DUP_01_05212015	Total/NA	Water	8260B	
680-112797-9	EB-01_05212015	Total/NA	Water	8260B	
680-112797-10	FB-01_05212015	Total/NA	Water	8260B	
680-112797-16	Trip Blank	Total/NA	Water	8260B	
LCS 680-384972/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-384972/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-384972/9	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 384797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-7	TMW_1_05212015	Total/NA	Water	3520C	
680-112797-7 MS	TMW_1_05212015	Total/NA	Water	3520C	
680-112797-7 MSD	TMW_1_05212015	Total/NA	Water	3520C	
680-112797-8	DUP_01_05212015	Total/NA	Water	3520C	
680-112797-9	EB-01_05212015	Total/NA	Water	3520C	
680-112797-10	FB-01_05212015	Total/NA	Water	3520C	
LCS 680-384797/6-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-384797/5-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 385722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-7	TMW_1_05212015	Total/NA	Water	8270D	384797
680-112797-7 MS	TMW_1_05212015	Total/NA	Water	8270D	384797
680-112797-7 MSD	TMW_1_05212015	Total/NA	Water	8270D	384797
680-112797-8	DUP_01_05212015	Total/NA	Water	8270D	384797
680-112797-9	EB-01_05212015	Total/NA	Water	8270D	384797
680-112797-10	FB-01_05212015	Total/NA	Water	8270D	384797
LCS 680-384797/6-A	Lab Control Sample	Total/NA	Water	8270D	384797
MB 680-384797/5-A	Method Blank	Total/NA	Water	8270D	384797

Metals

Prep Batch: 384639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-5	PDMW-29D_05212015	Total/NA	Water	3010A	
680-112797-9	EB-01_05212015	Total/NA	Water	3010A	
680-112797-10	FB-01_05212015	Total/NA	Water	3010A	
680-112797-15	EB-02_05212015	Total/NA	Water	3010A	
LCS 680-384639/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-384639/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 384879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-6	PDMW-26T_05212015	Total/NA	Water	3010A	
680-112797-7	TMW_1_05212015	Total/NA	Water	3010A	

TestAmerica Savannah

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Metals (Continued)

Prep Batch: 384879 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-7 MS	TMW_1_05212015	Total/NA	Water	3010A	
680-112797-7 MSD	TMW_1_05212015	Total/NA	Water	3010A	
680-112797-8	DUP_01_05212015	Total/NA	Water	3010A	
LCS 680-384879/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-384879/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 384988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-5	PDMW-29D_05212015	Total/NA	Water	6010C	384639
680-112797-9	EB-01_05212015	Total/NA	Water	6010C	384639
680-112797-10	FB-01_05212015	Total/NA	Water	6010C	384639
680-112797-15	EB-02_05212015	Total/NA	Water	6010C	384639
LCS 680-384639/2-A	Lab Control Sample	Total/NA	Water	6010C	384639
MB 680-384639/1-A	Method Blank	Total/NA	Water	6010C	384639

Analysis Batch: 385189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-6	PDMW-26T_05212015	Total/NA	Water	6010C	384879
680-112797-7	TMW_1_05212015	Total/NA	Water	6010C	384879
680-112797-7 MS	TMW_1_05212015	Total/NA	Water	6010C	384879
680-112797-7 MSD	TMW_1_05212015	Total/NA	Water	6010C	384879
680-112797-8	DUP_01_05212015	Total/NA	Water	6010C	384879
LCS 680-384879/2-A	Lab Control Sample	Total/NA	Water	6010C	384879
MB 680-384879/1-A	Method Blank	Total/NA	Water	6010C	384879

General Chemistry

Analysis Batch: 384267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-1	SW-04_05212015_LOW	Total/NA	Water	353.2	
680-112797-1 DU	SW-04_05212015_LOW	Total/NA	Water	353.2	
680-112797-2	SW-03_05212015_LOW	Total/NA	Water	353.2	
680-112797-3	SW-02_05212015_LOW	Total/NA	Water	353.2	
680-112797-4	SW-01_05212015_LOW	Total/NA	Water	353.2	
680-112797-5	PDMW-29D_05212015	Total/NA	Water	353.2	
680-112797-6	PDMW-26T_05212015	Total/NA	Water	353.2	
680-112797-7	TMW_1_05212015	Total/NA	Water	353.2	
680-112797-7 MS	TMW_1_05212015	Total/NA	Water	353.2	
680-112797-7 MSD	TMW_1_05212015	Total/NA	Water	353.2	
680-112797-8	DUP_01_05212015	Total/NA	Water	353.2	
680-112797-9	EB-01_05212015	Total/NA	Water	353.2	
680-112797-10	FB-01_05212015	Total/NA	Water	353.2	
680-112797-11	SW-02_05212015_HIGH	Total/NA	Water	353.2	
680-112797-12	SW-01_05212015_HIGH	Total/NA	Water	353.2	
680-112797-13	SW-03_05212015_HIGH	Total/NA	Water	353.2	
680-112797-14	SW-04_05212015_HIGH	Total/NA	Water	353.2	
680-112797-15	EB-02_05212015	Total/NA	Water	353.2	
LCS 680-384267/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-384267/13	Method Blank	Total/NA	Water	353.2	

TestAmerica Savannah

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

General Chemistry (Continued)

Analysis Batch: 384907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-1	SW-04_05212015_LOW	Total/NA	Water	350.1	
LCS 680-384907/1	Lab Control Sample	Total/NA	Water	350.1	
LCSD 680-384907/4	Lab Control Sample Dup	Total/NA	Water	350.1	
MB 680-384907/30	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 384908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-2	SW-03_05212015_LOW	Total/NA	Water	350.1	
680-112797-3	SW-02_05212015_LOW	Total/NA	Water	350.1	
680-112797-4	SW-01_05212015_LOW	Total/NA	Water	350.1	
680-112797-5	PDMW-29D_05212015	Total/NA	Water	350.1	
680-112797-6	PDMW-26T_05212015	Total/NA	Water	350.1	
680-112797-7	TMW_1_05212015	Total/NA	Water	350.1	
680-112797-7 MS	TMW_1_05212015	Total/NA	Water	350.1	
680-112797-7 MSD	TMW_1_05212015	Total/NA	Water	350.1	
680-112797-8	DUP_01_05212015	Total/NA	Water	350.1	
680-112797-9	EB-01_05212015	Total/NA	Water	350.1	
680-112797-10	FB-01_05212015	Total/NA	Water	350.1	
680-112797-11	SW-02_05212015_HIGH	Total/NA	Water	350.1	
680-112797-12	SW-01_05212015_HIGH	Total/NA	Water	350.1	
680-112797-12 DU	SW-01_05212015_HIGH	Total/NA	Water	350.1	
680-112797-13	SW-03_05212015_HIGH	Total/NA	Water	350.1	
680-112797-14	SW-04_05212015_HIGH	Total/NA	Water	350.1	
680-112797-15	EB-02_05212015	Total/NA	Water	350.1	
LCS 680-384908/1	Lab Control Sample	Total/NA	Water	350.1	
LCSD 680-384908/10	Lab Control Sample Dup	Total/NA	Water	350.1	
MB 680-384908/37	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 385163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-1	SW-04_05212015_LOW	Total/NA	Water	310.1	
680-112797-2	SW-03_05212015_LOW	Total/NA	Water	310.1	
680-112797-4	SW-01_05212015_LOW	Total/NA	Water	310.1	
680-112797-11	SW-02_05212015_HIGH	Total/NA	Water	310.1	
680-112797-12	SW-01_05212015_HIGH	Total/NA	Water	310.1	
680-112797-13	SW-03_05212015_HIGH	Total/NA	Water	310.1	
680-112797-14	SW-04_05212015_HIGH	Total/NA	Water	310.1	
LCS 680-385163/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-385163/31	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-385163/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 385222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112797-3	SW-02_05212015_LOW	Total/NA	Water	310.1	
LCS 680-385222/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-385222/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-385222/5	Method Blank	Total/NA	Water	310.1	

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: SW-04_05212015_LOW

Date Collected: 05/21/15 08:20

Date Received: 05/21/15 16:21

Lab Sample ID: 680-112797-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			385163	05/28/15 18:02	DAM	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		2	2 mL	2 mL	384907	05/27/15 09:59	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:23	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-03_05212015_LOW

Date Collected: 05/21/15 08:45

Date Received: 05/21/15 16:21

Lab Sample ID: 680-112797-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			385163	05/28/15 18:38	DAM	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	384908	05/27/15 09:05	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:25	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-02_05212015_LOW

Date Collected: 05/21/15 09:02

Date Received: 05/21/15 16:21

Lab Sample ID: 680-112797-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			385222	05/29/15 08:11	DAM	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	384908	05/27/15 09:05	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:26	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-01_05212015_LOW

Date Collected: 05/21/15 09:15

Date Received: 05/21/15 16:21

Lab Sample ID: 680-112797-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			385163	05/28/15 20:27	DAM	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	384908	05/27/15 09:05	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:28	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: PDMW-29D_05212015

Lab Sample ID: 680-112797-5

Date Collected: 05/21/15 10:26

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 14:44	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	384908	05/27/15 11:36	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:29	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-26T_05212015

Lab Sample ID: 680-112797-6

Date Collected: 05/21/15 11:32

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384879	05/27/15 14:38	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	385189	05/28/15 18:27	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		500	2 mL	2 mL	384908	05/27/15 13:18	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:30	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: TMW_1_05212015

Lab Sample ID: 680-112797-7

Date Collected: 05/21/15 10:40

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	384972	05/28/15 16:25	JD1	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			257.5 mL	0.5 mL	384797	05/27/15 15:58	RBS	TAL SAV
Total/NA	Analysis	8270D		1	257.5 mL	0.5 mL	385722	06/02/15 20:01	RAM	TAL SAV
		Instrument ID: CMST								
Total/NA	Prep	3010A			50 mL	50 mL	384879	05/27/15 14:38	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	385189	05/28/15 18:32	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		5000	2 mL	2 mL	384908	05/27/15 11:27	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1000	2 mL	2 mL	384267	05/21/15 19:37	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: DUP_01_05212015

Lab Sample ID: 680-112797-8

Date Collected: 05/21/15 00:00

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	384972	05/28/15 16:48	JD1	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			252 mL	0.5 mL	384797	05/27/15 15:58	RBS	TAL SAV
Total/NA	Analysis	8270D		1	252 mL	0.5 mL	385722	06/02/15 20:27	RAM	TAL SAV
		Instrument ID: CMST								
Total/NA	Prep	3010A			50 mL	50 mL	384879	05/27/15 14:38	BJB	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	385189	05/28/15 18:55	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		2000	2 mL	2 mL	384908	05/27/15 10:00	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1000	2 mL	2 mL	384267	05/21/15 19:31	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: EB-01_05212015

Lab Sample ID: 680-112797-9

Date Collected: 05/21/15 12:40

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	384972	05/28/15 12:39	JD1	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			254.4 mL	0.5 mL	384797	05/27/15 15:58	RBS	TAL SAV
Total/NA	Analysis	8270D		1	254.4 mL	0.5 mL	385722	06/02/15 20:53	RAM	TAL SAV
		Instrument ID: CMST								
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 14:49	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	384908	05/27/15 08:55	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:32	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: FB-01_05212015

Lab Sample ID: 680-112797-10

Date Collected: 05/21/15 13:00

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	384972	05/28/15 13:01	JD1	TAL SAV
		Instrument ID: CMSAC								
Total/NA	Prep	3520C			258.8 mL	0.5 mL	384797	05/27/15 15:58	RBS	TAL SAV
Total/NA	Analysis	8270D		1	258.8 mL	0.5 mL	385722	06/02/15 21:18	RAM	TAL SAV
		Instrument ID: CMST								
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 14:53	BCB	TAL SAV
		Instrument ID: ICPE								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: FB-01_05212015

Lab Sample ID: 680-112797-10

Date Collected: 05/21/15 13:00

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	2 mL	2 mL	384908	05/27/15 08:55	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:34	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-02_05212015_HIGH

Lab Sample ID: 680-112797-11

Date Collected: 05/21/15 12:10

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			385163	05/28/15 18:16	DAM	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		2	2 mL	2 mL	384908	05/27/15 10:19	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:38	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-01_05212015_HIGH

Lab Sample ID: 680-112797-12

Date Collected: 05/21/15 12:20

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			385163	05/28/15 18:09	DAM	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	384908	05/27/15 08:55	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:39	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: SW-03_05212015_HIGH

Lab Sample ID: 680-112797-13

Date Collected: 05/21/15 13:00

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			385163	05/28/15 18:23	DAM	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	384908	05/27/15 09:05	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:41	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Client Sample ID: SW-04_05212015_HIGH

Lab Sample ID: 680-112797-14

Date Collected: 05/21/15 13:10

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	310.1		1			385163	05/28/15 18:31	DAM	TAL SAV
		Instrument ID: MANTECH								
Total/NA	Analysis	350.1		1	2 mL	2 mL	384908	05/27/15 09:05	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:42	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: EB-02_05212015

Lab Sample ID: 680-112797-15

Date Collected: 05/21/15 13:30

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	384639	05/26/15 10:40	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	384988	05/27/15 15:01	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	384908	05/27/15 09:05	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	384267	05/21/15 19:43	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: Trip Blank

Lab Sample ID: 680-112797-16

Date Collected: 05/21/15 00:00

Matrix: Water

Date Received: 05/21/15 16:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	384972	05/28/15 11:31	JD1	TAL SAV
		Instrument ID: CMSAC								

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

[illegible]

Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 680-112797-1

Login Number: 112797

List Source: TestAmerica Savannah

List Number: 1

Creator: Banda, Christy S

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-112797-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-15 *

* Certification renewal pending - certification considered valid.

TestAmerica Savannah

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-118925-1

TestAmerica SDG: ENV0000120647/R9415575

Client Project/Site: CSX GA, Hutchinson Island, VRP

For:

AMEC Foster Wheeler E & I, Inc

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Aaron Getchell



Authorized for release by:

11/20/2015 5:05:22 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Job ID: 680-118925-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Foster Wheeler E & I, Inc
Project: CSX GA, Hutchinson Island, VRP
Report Number: 680-118925-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 11/12/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.8 C.

METALS (ICP)

Samples PDMW-13P_11112015 (680-118925-1), PDMW-32R_11112015 (680-118925-3), PDMW-33R2_11112015 (680-118925-4), PDMW-47_11112015 (680-118925-6), PDMW-23R_11112015 (680-118925-7), PDMW-46_11112015 (680-118925-8) and PDMW-45R_11112015 (680-118925-9) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/16/2015 and analyzed on 11/17/2015.

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

AMMONIA

Samples PDMW-13P_11112015 (680-118925-1), PDMW-53_11112015 (680-118925-2), PDMW-32R_11112015 (680-118925-3), PDMW-33R2_11112015 (680-118925-4), PDMW-48_11112015 (680-118925-5), PDMW-47_11112015 (680-118925-6), PDMW-23R_11112015 (680-118925-7), PDMW-46_11112015 (680-118925-8) and PDMW-45R_11112015 (680-118925-9) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were analyzed on 11/19/2015 and 11/20/2015.

Samples PDMW-13P_11112015 (680-118925-1)[2X], PDMW-53_11112015 (680-118925-2)[2X], PDMW-33R2_11112015 (680-118925-4)[10X], PDMW-48_11112015 (680-118925-5)[20X], PDMW-47_11112015 (680-118925-6)[20X] and PDMW-23R_11112015 (680-118925-7)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

NITRATE-NITRITE AS NITROGEN

Samples PDMW-13P_11112015 (680-118925-1), PDMW-53_11112015 (680-118925-2), PDMW-32R_11112015 (680-118925-3), PDMW-33R2_11112015 (680-118925-4), PDMW-48_11112015 (680-118925-5), PDMW-47_11112015 (680-118925-6), PDMW-23R_11112015 (680-118925-7), PDMW-46_11112015 (680-118925-8) and PDMW-45R_11112015 (680-118925-9) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 11/12/2015.

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

Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-118925-1	PDMW-13P_11112015	Water	11/11/15 10:12	11/12/15 08:30
680-118925-2	PDMW-53_11112015	Water	11/11/15 09:55	11/12/15 08:30
680-118925-3	PDMW-32R_11112015	Water	11/11/15 11:12	11/12/15 08:30
680-118925-4	PDMW-33R2_11112015	Water	11/11/15 10:55	11/12/15 08:30
680-118925-5	PDMW-48_11112015	Water	11/11/15 16:07	11/12/15 08:30
680-118925-6	PDMW-47_11112015	Water	11/11/15 11:55	11/12/15 08:30
680-118925-7	PDMW-23R_11112015	Water	11/11/15 12:17	11/12/15 08:30
680-118925-8	PDMW-46_11112015	Water	11/11/15 15:10	11/12/15 08:30
680-118925-9	PDMW-45R_11112015	Water	11/11/15 16:00	11/12/15 08:30

Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-13P_11112015

Lab Sample ID: 680-118925-1

Date Collected: 11/11/15 10:12

Matrix: Water

Date Received: 11/12/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/16/15 09:16	11/17/15 11:59	1
Lead	11		10		ug/L		11/16/15 09:16	11/17/15 11:59	1
Nickel	40	U	40		ug/L		11/16/15 09:16	11/17/15 11:59	1
Zinc	20	U	20		ug/L		11/16/15 09:16	11/17/15 11:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	2.7		0.50		mg/L			11/20/15 09:00	2
Nitrate as N	0.050	U	0.050		mg/L			11/12/15 12:44	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/12/15 12:44	1
Nitrite as N	0.050	U	0.050		mg/L			11/12/15 12:44	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-53_11112015

Lab Sample ID: 680-118925-2

Date Collected: 11/11/15 09:55

Matrix: Water

Date Received: 11/12/15 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	3.6		0.50		mg/L			11/20/15 09:00	2
Nitrate as N	0.050	U	0.050		mg/L			11/12/15 12:48	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/12/15 12:48	1
Nitrite as N	0.050	U	0.050		mg/L			11/12/15 12:48	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-32R_11112015

Lab Sample ID: 680-118925-3

Date Collected: 11/11/15 11:12

Matrix: Water

Date Received: 11/12/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/16/15 09:16	11/17/15 12:02	1
Lead	10	U	10		ug/L		11/16/15 09:16	11/17/15 12:02	1
Nickel	40	U	40		ug/L		11/16/15 09:16	11/17/15 12:02	1
Zinc	120		20		ug/L		11/16/15 09:16	11/17/15 12:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.3		0.25		mg/L			11/20/15 08:50	1
Nitrate as N	0.17		0.050		mg/L			11/12/15 12:50	1
Nitrate Nitrite as N	0.17		0.050		mg/L			11/12/15 12:50	1
Nitrite as N	0.050	U	0.050		mg/L			11/12/15 12:50	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-33R2_11112015

Lab Sample ID: 680-118925-4

Date Collected: 11/11/15 10:55

Matrix: Water

Date Received: 11/12/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/16/15 09:16	11/17/15 12:18	1
Lead	10	U	10		ug/L		11/16/15 09:16	11/17/15 12:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	15		2.5		mg/L			11/20/15 09:10	10
Nitrate as N	0.050	U	0.050		mg/L			11/12/15 12:57	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/12/15 12:57	1
Nitrite as N	0.050	U	0.050		mg/L			11/12/15 12:57	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-48_11112015

Lab Sample ID: 680-118925-5

Date Collected: 11/11/15 16:07

Matrix: Water

Date Received: 11/12/15 08:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	28		5.0		mg/L			11/20/15 09:33	20
Nitrate as N	0.11		0.050		mg/L			11/12/15 12:59	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/12/15 12:59	1
Nitrite as N	0.11		0.050		mg/L			11/12/15 12:59	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-47_11112015

Lab Sample ID: 680-118925-6

Date Collected: 11/11/15 11:55

Matrix: Water

Date Received: 11/12/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/16/15 09:16	11/17/15 12:21	1
Lead	10		10		ug/L		11/16/15 09:16	11/17/15 12:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	39		5.0		mg/L			11/20/15 09:10	20
Nitrate as N	0.050	U	0.050		mg/L			11/12/15 13:00	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/12/15 13:00	1
Nitrite as N	0.050	U	0.050		mg/L			11/12/15 13:00	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-23R_11112015

Lab Sample ID: 680-118925-7

Date Collected: 11/11/15 12:17

Matrix: Water

Date Received: 11/12/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/16/15 09:16	11/17/15 12:25	1
Lead	10	U	10		ug/L		11/16/15 09:16	11/17/15 12:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	2.8		0.50		mg/L			11/20/15 09:10	2
Nitrate as N	0.050	U	0.050		mg/L			11/12/15 13:01	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/12/15 13:01	1
Nitrite as N	0.050	U	0.050		mg/L			11/12/15 13:01	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-46_11112015

Lab Sample ID: 680-118925-8

Date Collected: 11/11/15 15:10

Matrix: Water

Date Received: 11/12/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/16/15 09:16	11/17/15 12:29	1
Lead	10	U	10		ug/L		11/16/15 09:16	11/17/15 12:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.1		0.25		mg/L			11/20/15 08:50	1
Nitrate as N	0.050	U	0.050		mg/L			11/12/15 13:02	1
Nitrate Nitrite as N	0.067		0.050		mg/L			11/12/15 13:02	1
Nitrite as N	0.073		0.050		mg/L			11/12/15 13:02	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-45R_11112015

Lab Sample ID: 680-118925-9

Date Collected: 11/11/15 16:00

Matrix: Water

Date Received: 11/12/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/16/15 09:16	11/17/15 12:33	1
Lead	10	U	10		ug/L		11/16/15 09:16	11/17/15 12:33	1
Nickel	40	U	40		ug/L		11/16/15 09:16	11/17/15 12:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.80		0.25		mg/L			11/19/15 19:34	1
Nitrate as N	0.050	U	0.050		mg/L			11/12/15 13:03	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/12/15 13:03	1
Nitrite as N	0.050	U	0.050		mg/L			11/12/15 13:03	1

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-410498/1-A
Matrix: Water
Analysis Batch: 410766

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 410498

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/16/15 09:16	11/17/15 10:31	1
Lead	10	U	10		ug/L		11/16/15 09:16	11/17/15 10:31	1
Nickel	40	U	40		ug/L		11/16/15 09:16	11/17/15 10:31	1
Zinc	20	U	20		ug/L		11/16/15 09:16	11/17/15 10:31	1

Lab Sample ID: LCS 680-410498/2-A
Matrix: Water
Analysis Batch: 410766

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 410498

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	94.7		ug/L		95	80 - 120
Lead	500	495		ug/L		99	80 - 120
Nickel	100	98.4		ug/L		98	80 - 120
Zinc	100	98.1		ug/L		98	80 - 120

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-411342/29
Matrix: Water
Analysis Batch: 411342

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			11/19/15 19:43	1

Lab Sample ID: LCS 680-411342/4
Matrix: Water
Analysis Batch: 411342

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.05		mg/L		105	90 - 110

Lab Sample ID: LCSD 680-411342/6
Matrix: Water
Analysis Batch: 411342

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.00	1.06		mg/L		106	90 - 110	1	30

Lab Sample ID: MB 680-411343/13
Matrix: Water
Analysis Batch: 411343

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			11/19/15 19:43	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 680-411343/17

Matrix: Water

Analysis Batch: 411343

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.05		mg/L		105	90 - 110

Lab Sample ID: LCSD 680-411343/35

Matrix: Water

Analysis Batch: 411343

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.00	1.05		mg/L		105	90 - 110	0	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-410169/13

Matrix: Water

Analysis Batch: 410169

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			11/12/15 12:39	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/12/15 12:39	1
Nitrite as N	0.050	U	0.050		mg/L			11/12/15 12:39	1

Lab Sample ID: LCS 680-410169/16

Matrix: Water

Analysis Batch: 410169

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.496		mg/L		99	75 - 125
Nitrate Nitrite as N	1.00	0.998		mg/L		100	90 - 110
Nitrite as N	0.500	0.502		mg/L		100	90 - 110

Lab Sample ID: 680-118925-1 MS

Matrix: Water

Analysis Batch: 410169

Client Sample ID: PDMW-13P_11112015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.050	U	0.500	0.519		mg/L		104	75 - 125
Nitrate Nitrite as N	0.050	U	1.00	1.04		mg/L		104	90 - 110
Nitrite as N	0.050	U	0.500	0.521		mg/L		104	90 - 110

Lab Sample ID: 680-118925-1 MSD

Matrix: Water

Analysis Batch: 410169

Client Sample ID: PDMW-13P_11112015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.050	U	0.500	0.539		mg/L		108	75 - 125	4	30
Nitrate Nitrite as N	0.050	U	1.00	1.06		mg/L		106	90 - 110	1	10
Nitrite as N	0.050	U	0.500	0.521		mg/L		104	90 - 110	0	10

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: 680-118925-2 DU

Matrix: Water

Analysis Batch: 410169

Client Sample ID: PDMW-53_11112015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU		Unit	D	RPD	Limit
			Result	Qualifier				
Nitrate as N	0.050	U	0.050	U	mg/L		NC	30
Nitrate Nitrite as N	0.050	U	0.050	U	mg/L		NC	10
Nitrite as N	0.050	U	0.050	U	mg/L		NC	10

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Metals

Prep Batch: 410498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118925-1	PDMW-13P_11112015	Total/NA	Water	3010A	
680-118925-3	PDMW-32R_11112015	Total/NA	Water	3010A	
680-118925-4	PDMW-33R2_11112015	Total/NA	Water	3010A	
680-118925-6	PDMW-47_11112015	Total/NA	Water	3010A	
680-118925-7	PDMW-23R_11112015	Total/NA	Water	3010A	
680-118925-8	PDMW-46_11112015	Total/NA	Water	3010A	
680-118925-9	PDMW-45R_11112015	Total/NA	Water	3010A	
LCS 680-410498/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-410498/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 410766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118925-1	PDMW-13P_11112015	Total/NA	Water	6010C	410498
680-118925-3	PDMW-32R_11112015	Total/NA	Water	6010C	410498
680-118925-4	PDMW-33R2_11112015	Total/NA	Water	6010C	410498
680-118925-6	PDMW-47_11112015	Total/NA	Water	6010C	410498
680-118925-7	PDMW-23R_11112015	Total/NA	Water	6010C	410498
680-118925-8	PDMW-46_11112015	Total/NA	Water	6010C	410498
680-118925-9	PDMW-45R_11112015	Total/NA	Water	6010C	410498
LCS 680-410498/2-A	Lab Control Sample	Total/NA	Water	6010C	410498
MB 680-410498/1-A	Method Blank	Total/NA	Water	6010C	410498

General Chemistry

Analysis Batch: 410169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118925-1	PDMW-13P_11112015	Total/NA	Water	353.2	
680-118925-1 MS	PDMW-13P_11112015	Total/NA	Water	353.2	
680-118925-1 MSD	PDMW-13P_11112015	Total/NA	Water	353.2	
680-118925-2	PDMW-53_11112015	Total/NA	Water	353.2	
680-118925-2 DU	PDMW-53_11112015	Total/NA	Water	353.2	
680-118925-3	PDMW-32R_11112015	Total/NA	Water	353.2	
680-118925-4	PDMW-33R2_11112015	Total/NA	Water	353.2	
680-118925-5	PDMW-48_11112015	Total/NA	Water	353.2	
680-118925-6	PDMW-47_11112015	Total/NA	Water	353.2	
680-118925-7	PDMW-23R_11112015	Total/NA	Water	353.2	
680-118925-8	PDMW-46_11112015	Total/NA	Water	353.2	
680-118925-9	PDMW-45R_11112015	Total/NA	Water	353.2	
LCS 680-410169/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-410169/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 411342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118925-1	PDMW-13P_11112015	Total/NA	Water	350.1	
680-118925-2	PDMW-53_11112015	Total/NA	Water	350.1	
680-118925-3	PDMW-32R_11112015	Total/NA	Water	350.1	
680-118925-4	PDMW-33R2_11112015	Total/NA	Water	350.1	
680-118925-5	PDMW-48_11112015	Total/NA	Water	350.1	
680-118925-6	PDMW-47_11112015	Total/NA	Water	350.1	
LCS 680-411342/4	Lab Control Sample	Total/NA	Water	350.1	

TestAmerica Savannah

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

General Chemistry (Continued)

Analysis Batch: 411342 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 680-411342/6	Lab Control Sample Dup	Total/NA	Water	350.1	
MB 680-411342/29	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 411343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118925-7	PDMW-23R_11112015	Total/NA	Water	350.1	
680-118925-8	PDMW-46_11112015	Total/NA	Water	350.1	
680-118925-9	PDMW-45R_11112015	Total/NA	Water	350.1	
LCS 680-411343/17	Lab Control Sample	Total/NA	Water	350.1	
LCSD 680-411343/35	Lab Control Sample Dup	Total/NA	Water	350.1	
MB 680-411343/13	Method Blank	Total/NA	Water	350.1	

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-13P_11112015

Date Collected: 11/11/15 10:12

Date Received: 11/12/15 08:30

Lab Sample ID: 680-118925-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410498	11/16/15 09:16	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410766	11/17/15 11:59	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		2	2 mL	2 mL	411342	11/20/15 09:00	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410169	11/12/15 12:44	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-53_11112015

Date Collected: 11/11/15 09:55

Date Received: 11/12/15 08:30

Lab Sample ID: 680-118925-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		2	2 mL	2 mL	411342	11/20/15 09:00	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410169	11/12/15 12:48	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-32R_11112015

Date Collected: 11/11/15 11:12

Date Received: 11/12/15 08:30

Lab Sample ID: 680-118925-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410498	11/16/15 09:16	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410766	11/17/15 12:02	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	411342	11/20/15 08:50	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410169	11/12/15 12:50	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-33R2_11112015

Date Collected: 11/11/15 10:55

Date Received: 11/12/15 08:30

Lab Sample ID: 680-118925-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410498	11/16/15 09:16	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410766	11/17/15 12:18	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		10	2 mL	2 mL	411342	11/20/15 09:10	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410169	11/12/15 12:57	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-48_11112015

Lab Sample ID: 680-118925-5

Date Collected: 11/11/15 16:07

Matrix: Water

Date Received: 11/12/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		20	2 mL	2 mL	411342	11/20/15 09:33	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410169	11/12/15 12:59	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-47_11112015

Lab Sample ID: 680-118925-6

Date Collected: 11/11/15 11:55

Matrix: Water

Date Received: 11/12/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410498	11/16/15 09:16	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410766	11/17/15 12:21	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		20	2 mL	2 mL	411342	11/20/15 09:10	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410169	11/12/15 13:00	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-23R_11112015

Lab Sample ID: 680-118925-7

Date Collected: 11/11/15 12:17

Matrix: Water

Date Received: 11/12/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410498	11/16/15 09:16	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410766	11/17/15 12:25	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		2	2 mL	2 mL	411343	11/20/15 09:10	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410169	11/12/15 13:01	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-46_11112015

Lab Sample ID: 680-118925-8

Date Collected: 11/11/15 15:10

Matrix: Water

Date Received: 11/12/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410498	11/16/15 09:16	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410766	11/17/15 12:29	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	411343	11/20/15 08:50	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410169	11/12/15 13:02	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-45R_11112015

Lab Sample ID: 680-118925-9

Date Collected: 11/11/15 16:00

Matrix: Water

Date Received: 11/12/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410498	11/16/15 09:16	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410766	11/17/15 12:33	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	411343	11/19/15 19:34	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410169	11/12/15 13:03	GRX	TAL SAV
		Instrument ID: LACHAT2								

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 680-118925-1

SDG Number: ENV0000120647/R9415575

Login Number: 118925

List Number: 1

Creator: White, Menica R

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118925-1
SDG: ENV0000120647/R9415575

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-16

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-118974-1

TestAmerica SDG: ENV0000120647/R9415575

Client Project/Site: CSX GA, Hutchinson Island, VRP

For:

AMEC Foster Wheeler E & I, Inc

2677 Buford Highway

Atlanta, Georgia 30324

Attn: Aaron Getchell



Authorized for release by:

11/30/2015 4:56:08 PM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Job ID: 680-118974-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: AMEC Foster Wheeler E & I, Inc
Project: CSX GA, Hutchinson Island, VRP
Report Number: 680-118974-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 11/13/2015 8:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.8° C, 1.2° C and 1.2° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples TMW-1_11122015 (680-118974-9), DUP-02_11122015 (680-118974-10), EBJ_11122015 (680-118974-12), FB_11122015 (680-118974-13) and TB_11122015 (680-118974-14) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/17/2015.

Method(s) 8260B: The following sample were collected in properly preserved vials for analysis of volatile organic compounds (VOCs), however, the pH was >2 when verified by the laboratory: TMW-1_11122015 (680-118974-9), TMW-1_11122015 (680-118974-9[MS]), TMW-1_11122015 (680-118974-9[MSD]) and DUP-02_11122015 (680-118974-10).

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

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples TMW-1_11122015 (680-118974-9), DUP-02_11122015 (680-118974-10), EBJ_11122015 (680-118974-12) and FB_11122015 (680-118974-13) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 11/17/2015 and 11/24/2015 and analyzed on 11/20/2015, 11/26/2015 and 11/27/2015.

Method(s) 8270D: Surrogate recovery for the following sample was outside control limits: TMW-1_11122015 (680-118974-9). Re-extraction and/or re-analysis was performed with concurring results. The re-extraction was out of hold time. Both sets of data have been reported. The confirmation sample is qualified with an "H" flag.

Several analytes have recovery outside criteria low for the MS and/or MSD of sample TMW-1_11122015 (680-118974-9) in batch 680-411357. Indeno[1,2,3-cd]pyrene exceeded the RPD limit. Refer to the QC report for details.

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

METALS (ICP)

Samples EW-1_11122015 (680-118974-1), PDMW-19P_11122015 (680-118974-2), PDMW-10R_11122015 (680-118974-3), TMW-4R_11122015 (680-118974-4), PDMW-26T_11122015 (680-118974-5), PDMW-8R_11122015 (680-118974-6), DUP-01_11122015 (680-118974-7), MW-3R_11122015 (680-118974-8), TMW-1_11122015 (680-118974-9), DUP-02_11122015 (680-118974-10), EBP_11122015 (680-118974-11), EBJ_11122015 (680-118974-12) and FB_11122015 (680-118974-13) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/17/2015 and 11/18/2015 and analyzed on 11/18/2015 and 11/19/2015.

Method(s) 3010A: The following samples were received unpreserved and were preserved upon receipt to the laboratory: PDMW-26T_11122015 (680-118974-5), DUP-01_11122015 (680-118974-7), TMW-1_11122015 (680-118974-9) and DUP-02_11122015 (680-118974-10). Regulatory documents require a 24-hour waiting period from the time of the addition of the acid preservative to the time of digestion.

Case Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Job ID: 680-118974-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

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

AMMONIA

Samples EW-1_11122015 (680-118974-1), PDMW-19P_11122015 (680-118974-2), PDMW-10R_11122015 (680-118974-3), TMW-4R_11122015 (680-118974-4), PDMW-26T_11122015 (680-118974-5), PDMW-8R_11122015 (680-118974-6), DUP-01_11122015 (680-118974-7), MW-3R_11122015 (680-118974-8), TMW-1_11122015 (680-118974-9), DUP-02_11122015 (680-118974-10), EBP_11122015 (680-118974-11), EBJ_11122015 (680-118974-12) and FB_11122015 (680-118974-13) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were analyzed on 11/19/2015 and 11/20/2015.

Method(s) 350.1: The reference method requires samples to be preserved to a pH of <2. The following samples were received at a pH of 6: TMW-1_11122015 (680-118974-9) and DUP-02_11122015 (680-118974-10). The samples were preserved to the appropriate pH in the laboratory.

Ammonia recovery is outside criteria low for the MS and outside criteria high for the MSD of sample TMW-1_11122015 (680-118974-9) in batch 680-411340. Refer to the QC report for details.

Samples EW-1_11122015 (680-118974-1)[200X], PDMW-19P_11122015 (680-118974-2)[5X], PDMW-10R_11122015 (680-118974-3)[5X], TMW-4R_11122015 (680-118974-4)[2X], PDMW-26T_11122015 (680-118974-5)[400X], PDMW-8R_11122015 (680-118974-6)[50X], DUP-01_11122015 (680-118974-7)[400X], TMW-1_11122015 (680-118974-9)[5000X] and DUP-02_11122015 (680-118974-10)[5000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

NITRATE-NITRITE AS NITROGEN

Samples EW-1_11122015 (680-118974-1), PDMW-19P_11122015 (680-118974-2), PDMW-10R_11122015 (680-118974-3), TMW-4R_11122015 (680-118974-4), PDMW-26T_11122015 (680-118974-5), PDMW-8R_11122015 (680-118974-6), DUP-01_11122015 (680-118974-7), MW-3R_11122015 (680-118974-8), TMW-1_11122015 (680-118974-9), DUP-02_11122015 (680-118974-10), EBP_11122015 (680-118974-11), EBJ_11122015 (680-118974-12) and FB_11122015 (680-118974-13) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 11/13/2015.

Method(s) 353.2: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with AD410397 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of nitrate plus nitrite in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Nitrate as N and Nitrate Nitrite as N failed the recovery criteria low for the MS and/or MSD of sample TMW-1_11122015 (680-118974-9) in batch 680-410397. Refer to the QC report for details.

Samples TMW-1_11122015 (680-118974-9)[200X] and DUP-02_11122015 (680-118974-10)[200X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
H	Sample was prepped or analyzed beyond the specified holding time
*	ISTD response or retention time outside acceptable limits

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-118974-1	EW-1_11122015	Water	11/12/15 09:58	11/13/15 08:30
680-118974-2	PDMW-19P_11122015	Water	11/12/15 09:30	11/13/15 08:30
680-118974-3	PDMW-10R_11122015	Water	11/12/15 10:48	11/13/15 08:30
680-118974-4	TMW-4R_11122015	Water	11/12/15 10:30	11/13/15 08:30
680-118974-5	PDMW-26T_11122015	Water	11/12/15 13:55	11/13/15 08:30
680-118974-6	PDMW-8R_11122015	Water	11/12/15 13:00	11/13/15 08:30
680-118974-7	DUP-01_11122015	Water	11/12/15 00:00	11/13/15 08:30
680-118974-8	MW-3R_11122015	Water	11/12/15 00:00	11/13/15 08:30
680-118974-9	TMW-1_11122015	Water	11/12/15 15:13	11/13/15 08:30
680-118974-10	DUP-02_11122015	Water	11/12/15 00:00	11/13/15 08:30
680-118974-11	EBP_11122015	Water	11/12/15 15:15	11/13/15 08:30
680-118974-12	EBJ_11122015	Water	11/12/15 16:35	11/13/15 08:30
680-118974-13	FB_11122015	Water	11/12/15 15:35	11/13/15 08:30
680-118974-14	TB_11122015	Water	11/12/15 00:00	11/13/15 08:30

Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: EW-1_11122015

Date Collected: 11/12/15 09:58

Date Received: 11/13/15 08:30

Lab Sample ID: 680-118974-1

Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/17/15 10:31	11/18/15 04:24	1
Chromium	10	U	10		ug/L		11/17/15 10:31	11/18/15 04:24	1
Lead	10	U	10		ug/L		11/17/15 10:31	11/18/15 04:24	1
Nickel	60		40		ug/L		11/17/15 10:31	11/18/15 04:24	1
Zinc	170		20		ug/L		11/17/15 10:31	11/18/15 04:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	270		50		mg/L			11/19/15 18:47	200
Nitrate as N	0.050	U	0.050		mg/L			11/13/15 15:43	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/13/15 15:43	1
Nitrite as N	0.050	U	0.050		mg/L			11/13/15 15:43	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-19P_11122015

Lab Sample ID: 680-118974-2

Date Collected: 11/12/15 09:30

Matrix: Water

Date Received: 11/13/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/17/15 10:31	11/18/15 04:28	1
Lead	10	U	10		ug/L		11/17/15 10:31	11/18/15 04:28	1
Nickel	40	U	40		ug/L		11/17/15 10:31	11/18/15 04:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	4.9		1.3		mg/L			11/19/15 17:34	5
Nitrate as N	0.050	U	0.050		mg/L			11/13/15 15:50	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/13/15 15:50	1
Nitrite as N	0.050	U	0.050		mg/L			11/13/15 15:50	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-10R_11122015

Lab Sample ID: 680-118974-3

Date Collected: 11/12/15 10:48

Matrix: Water

Date Received: 11/13/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/17/15 10:31	11/18/15 04:33	1
Lead	10	U	10		ug/L		11/17/15 10:31	11/18/15 04:33	1
Nickel	40	U	40		ug/L		11/17/15 10:31	11/18/15 04:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	7.9		1.3		mg/L			11/19/15 16:58	5
Nitrate as N	0.050	U	0.050		mg/L			11/13/15 16:52	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:52	1
Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:52	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: TMW-4R_11122015

Lab Sample ID: 680-118974-4

Date Collected: 11/12/15 10:30

Matrix: Water

Date Received: 11/13/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/17/15 10:31	11/18/15 04:37	1
Lead	10	U	10		ug/L		11/17/15 10:31	11/18/15 04:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	3.1		0.50		mg/L			11/19/15 17:34	2
Nitrate as N	0.050	U	0.050		mg/L			11/13/15 16:53	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:53	1
Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:53	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-26T_11122015

Lab Sample ID: 680-118974-5

Date Collected: 11/12/15 13:55

Matrix: Water

Date Received: 11/13/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/18/15 10:36	11/19/15 14:51	1
Lead	10	U	10		ug/L		11/18/15 10:36	11/19/15 14:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	600		100		mg/L			11/20/15 09:10	400
Nitrate as N	0.050	U	0.050		mg/L			11/13/15 15:56	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/13/15 15:56	1
Nitrite as N	0.050	U	0.050		mg/L			11/13/15 15:56	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: PDMW-8R_11122015

Lab Sample ID: 680-118974-6

Date Collected: 11/12/15 13:00

Matrix: Water

Date Received: 11/13/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/17/15 10:31	11/18/15 04:42	1
Lead	10	U	10		ug/L		11/17/15 10:31	11/18/15 04:42	1
Nickel	40	U	40		ug/L		11/17/15 10:31	11/18/15 04:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	60		13		mg/L			11/19/15 18:02	50
Nitrate as N	0.050	U	0.050		mg/L			11/13/15 16:50	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:50	1
Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:50	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: DUP-01_11122015

Lab Sample ID: 680-118974-7

Date Collected: 11/12/15 00:00

Matrix: Water

Date Received: 11/13/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/18/15 10:36	11/19/15 14:55	1
Lead	10	U	10		ug/L		11/18/15 10:36	11/19/15 14:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	600		100		mg/L			11/20/15 09:10	400
Nitrate as N	0.050	U	0.050		mg/L			11/13/15 16:01	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:01	1
Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:01	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: MW-3R_11122015

Lab Sample ID: 680-118974-8

Date Collected: 11/12/15 00:00

Matrix: Water

Date Received: 11/13/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/17/15 10:31	11/18/15 04:55	1
Lead	10		10		ug/L		11/17/15 10:31	11/18/15 04:55	1
Nickel	40	U	40		ug/L		11/17/15 10:31	11/18/15 04:55	1
Zinc	35		20		ug/L		11/17/15 10:31	11/18/15 04:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.7		0.25		mg/L			11/19/15 17:20	1
Nitrate as N	0.056		0.050		mg/L			11/13/15 16:02	1
Nitrate Nitrite as N	0.054		0.050		mg/L			11/13/15 16:02	1
Nitrite as N	0.11		0.050		mg/L			11/13/15 16:02	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: TMW-1_11122015

Lab Sample ID: 680-118974-9

Date Collected: 11/12/15 15:13

Matrix: Water

Date Received: 11/13/15 08:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	52		1.0		ug/L			11/17/15 13:20	1
Ethylbenzene	1.0	U	1.0		ug/L			11/17/15 13:20	1
Toluene	1.0	U	1.0		ug/L			11/17/15 13:20	1
Xylenes, Total	220		1.0		ug/L			11/17/15 13:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		70 - 130					11/17/15 13:20	1
1,2-Dichloroethane-d4 (Surr)	94		70 - 130					11/17/15 13:20	1
Dibromofluoromethane (Surr)	95		70 - 130					11/17/15 13:20	1
4-Bromofluorobenzene (Surr)	96		70 - 130					11/17/15 13:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.5	U	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Acenaphthylene	9.5	U	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Anthracene	9.5	U	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Benzo[a]anthracene	9.5	U F1	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Benzo[a]pyrene	9.5	U	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Benzo[b]fluoranthene	9.5	U F1	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Benzo[g,h,i]perylene	9.5	U F1	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Benzo[k]fluoranthene	9.5	U F1	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Chrysene	9.5	U F1	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Dibenz(a,h)anthracene	9.5	U F1	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Fluoranthene	9.5	U	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Fluorene	9.5	U	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Indeno[1,2,3-cd]pyrene	9.5	U F2 F1	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
1-Methylnaphthalene	9.5	U	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
2-Methylnaphthalene	9.5	U	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Naphthalene	32		9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Phenanthrene	9.5	U	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Pyrene	9.5	U	9.5		ug/L		11/17/15 15:53	11/20/15 21:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	28	X	32 - 114				11/17/15 15:53	11/20/15 21:00	1
Nitrobenzene-d5 (Surr)	28	X	30 - 117				11/17/15 15:53	11/20/15 21:00	1
Terphenyl-d14 (Surr)	34		10 - 132				11/17/15 15:53	11/20/15 21:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Acenaphthylene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Anthracene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Benzo[a]anthracene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Benzo[a]pyrene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Benzo[b]fluoranthene	9.6	U H F1	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Benzo[g,h,i]perylene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Benzo[k]fluoranthene	9.6	U H F1	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Chrysene	9.6	U H F1	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Dibenz(a,h)anthracene	9.6	U H F1	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Fluoranthene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: TMW-1_11122015

Lab Sample ID: 680-118974-9

Date Collected: 11/12/15 15:13

Matrix: Water

Date Received: 11/13/15 08:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Indeno[1,2,3-cd]pyrene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
1-Methylnaphthalene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
2-Methylnaphthalene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Naphthalene	26	H F1	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Phenanthrene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1
Pyrene	9.6	U H	9.6		ug/L		11/24/15 15:42	11/27/15 19:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	17	X	32 - 114	11/24/15 15:42	11/27/15 19:28	1
Nitrobenzene-d5 (Surr)	20	X	30 - 117	11/24/15 15:42	11/27/15 19:28	1
Terphenyl-d14 (Surr)	10		10 - 132	11/24/15 15:42	11/27/15 19:28	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	150		20		ug/L		11/18/15 10:36	11/19/15 14:40	1
Chromium	29		10		ug/L		11/18/15 10:36	11/19/15 14:40	1
Lead	10	U	10		ug/L		11/18/15 10:36	11/19/15 14:40	1
Nickel	40	U	40		ug/L		11/18/15 10:36	11/19/15 14:40	1
Zinc	78		20		ug/L		11/18/15 10:36	11/19/15 14:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	3600	F1	1300		mg/L			11/20/15 09:25	5000
Nitrate as N	250	F1	10		mg/L			11/13/15 15:37	200
Nitrate Nitrite as N	250	F1	10		mg/L			11/13/15 15:37	200
Nitrite as N	10	U	10		mg/L			11/13/15 15:37	200

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: DUP-02_11122015

Lab Sample ID: 680-118974-10

Date Collected: 11/12/15 00:00

Matrix: Water

Date Received: 11/13/15 08:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	51		1.0		ug/L			11/17/15 15:27	1
Ethylbenzene	1.0	U	1.0		ug/L			11/17/15 15:27	1
Toluene	1.0	U	1.0		ug/L			11/17/15 15:27	1
Xylenes, Total	220		1.0		ug/L			11/17/15 15:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		70 - 130		11/17/15 15:27	1
1,2-Dichloroethane-d4 (Surr)	92		70 - 130		11/17/15 15:27	1
Dibromofluoromethane (Surr)	92		70 - 130		11/17/15 15:27	1
4-Bromofluorobenzene (Surr)	95		70 - 130		11/17/15 15:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Acenaphthylene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Anthracene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Benzo[a]anthracene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Benzo[a]pyrene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Benzo[b]fluoranthene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Benzo[g,h,i]perylene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Benzo[k]fluoranthene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Chrysene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Dibenz(a,h)anthracene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Fluoranthene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Fluorene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Indeno[1,2,3-cd]pyrene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
1-Methylnaphthalene	11		9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
2-Methylnaphthalene	13		9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Naphthalene	63		9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Phenanthrene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1
Pyrene	9.7	U	9.7		ug/L		11/17/15 15:53	11/20/15 21:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	48		32 - 114	11/17/15 15:53	11/20/15 21:25	1
Nitrobenzene-d5 (Surr)	57		30 - 117	11/17/15 15:53	11/20/15 21:25	1
Terphenyl-d14 (Surr)	35		10 - 132	11/17/15 15:53	11/20/15 21:25	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	120		20		ug/L		11/18/15 10:36	11/19/15 14:58	1
Chromium	23		10		ug/L		11/18/15 10:36	11/19/15 14:58	1
Lead	10	U	10		ug/L		11/18/15 10:36	11/19/15 14:58	1
Nickel	40	U	40		ug/L		11/18/15 10:36	11/19/15 14:58	1
Zinc	63		20		ug/L		11/18/15 10:36	11/19/15 14:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	3400		1300		mg/L			11/20/15 09:25	5000
Nitrate as N	230		10		mg/L			11/13/15 15:41	200
Nitrate Nitrite as N	230		10		mg/L			11/13/15 15:41	200

TestAmerica Savannah

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: DUP-02_11122015

Lab Sample ID: 680-118974-10

Date Collected: 11/12/15 00:00

Matrix: Water

Date Received: 11/13/15 08:30

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	10	U	10		mg/L			11/13/15 15:41	200

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: EBP_11122015

Lab Sample ID: 680-118974-11

Date Collected: 11/12/15 15:15

Matrix: Water

Date Received: 11/13/15 08:30

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/17/15 10:31	11/18/15 05:00	1
Lead	10	U	10		ug/L		11/17/15 10:31	11/18/15 05:00	1
Nickel	40	U	40		ug/L		11/17/15 10:31	11/18/15 05:00	1
Zinc	20	U	20		ug/L		11/17/15 10:31	11/18/15 05:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			11/19/15 16:38	1
Nitrate as N	0.16		0.050		mg/L			11/13/15 16:03	1
Nitrate Nitrite as N	0.16		0.050		mg/L			11/13/15 16:03	1
Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:03	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: EBJ_11122015

Lab Sample ID: 680-118974-12

Date Collected: 11/12/15 16:35

Matrix: Water

Date Received: 11/13/15 08:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/17/15 11:35	1
Ethylbenzene	1.0	U	1.0		ug/L			11/17/15 11:35	1
Toluene	1.0	U	1.0		ug/L			11/17/15 11:35	1
Xylenes, Total	1.0	U	1.0		ug/L			11/17/15 11:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		70 - 130		11/17/15 11:35	1
1,2-Dichloroethane-d4 (Surr)	94		70 - 130		11/17/15 11:35	1
Dibromofluoromethane (Surr)	95		70 - 130		11/17/15 11:35	1
4-Bromofluorobenzene (Surr)	94		70 - 130		11/17/15 11:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Acenaphthylene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Anthracene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Benzo[a]anthracene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Benzo[a]pyrene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Benzo[b]fluoranthene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Benzo[g,h,i]perylene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Benzo[k]fluoranthene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Chrysene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Dibenz(a,h)anthracene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Fluoranthene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Fluorene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Indeno[1,2,3-cd]pyrene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
1-Methylnaphthalene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
2-Methylnaphthalene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Naphthalene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Phenanthrene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1
Pyrene	9.6	U	9.6		ug/L		11/17/15 15:53	11/20/15 21:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	43		32 - 114	11/17/15 15:53	11/20/15 21:50	1
Nitrobenzene-d5 (Surr)	48		30 - 117	11/17/15 15:53	11/20/15 21:50	1
Terphenyl-d14 (Surr)	56		10 - 132	11/17/15 15:53	11/20/15 21:50	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/17/15 10:31	11/18/15 05:04	1
Chromium	10	U	10		ug/L		11/17/15 10:31	11/18/15 05:04	1
Lead	10	U	10		ug/L		11/17/15 10:31	11/18/15 05:04	1
Nickel	40	U	40		ug/L		11/17/15 10:31	11/18/15 05:04	1
Zinc	20	U	20		ug/L		11/17/15 10:31	11/18/15 05:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			11/19/15 16:38	1
Nitrate as N	0.050	U	0.050		mg/L			11/13/15 16:05	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:05	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: EBJ_11122015

Date Collected: 11/12/15 16:35

Date Received: 11/13/15 08:30

Lab Sample ID: 680-118974-12

Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:05	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: FB_11122015

Lab Sample ID: 680-118974-13

Date Collected: 11/12/15 15:35

Matrix: Water

Date Received: 11/13/15 08:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/17/15 11:56	1
Ethylbenzene	1.0	U	1.0		ug/L			11/17/15 11:56	1
Toluene	1.0	U	1.0		ug/L			11/17/15 11:56	1
Xylenes, Total	1.0	U	1.0		ug/L			11/17/15 11:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		70 - 130		11/17/15 11:56	1
1,2-Dichloroethane-d4 (Surr)	95		70 - 130		11/17/15 11:56	1
Dibromofluoromethane (Surr)	96		70 - 130		11/17/15 11:56	1
4-Bromofluorobenzene (Surr)	94		70 - 130		11/17/15 11:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Acenaphthylene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Anthracene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Benzo[a]anthracene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Benzo[a]pyrene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Benzo[b]fluoranthene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Benzo[g,h,i]perylene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Benzo[k]fluoranthene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Chrysene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Dibenz(a,h)anthracene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Fluoranthene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Fluorene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Indeno[1,2,3-cd]pyrene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
1-Methylnaphthalene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
2-Methylnaphthalene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Naphthalene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Phenanthrene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1
Pyrene	9.6	U	9.6		ug/L		11/17/15 15:53	11/26/15 02:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	101		32 - 114	11/17/15 15:53	11/26/15 02:09	1
Nitrobenzene-d5 (Surr)	94		30 - 117	11/17/15 15:53	11/26/15 02:09	1
Terphenyl-d14 (Surr)	114		10 - 132	11/17/15 15:53	11/26/15 02:09	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/17/15 10:31	11/18/15 05:09	1
Chromium	10	U	10		ug/L		11/17/15 10:31	11/18/15 05:09	1
Lead	10	U	10		ug/L		11/17/15 10:31	11/18/15 05:09	1
Nickel	40	U	40		ug/L		11/17/15 10:31	11/18/15 05:09	1
Zinc	20	U	20		ug/L		11/17/15 10:31	11/18/15 05:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			11/19/15 16:38	1
Nitrate as N	0.050	U	0.050		mg/L			11/13/15 16:06	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:06	1

TestAmerica Savannah

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: FB_11122015

Date Collected: 11/12/15 15:35

Date Received: 11/13/15 08:30

Lab Sample ID: 680-118974-13

Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.050	U	0.050		mg/L			11/13/15 16:06	1

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: TB_11122015

Lab Sample ID: 680-118974-14

Date Collected: 11/12/15 00:00

Matrix: Water

Date Received: 11/13/15 08:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/17/15 12:17	1
Ethylbenzene	1.0	U	1.0		ug/L			11/17/15 12:17	1
Toluene	1.0	U	1.0		ug/L			11/17/15 12:17	1
Xylenes, Total	1.0	U	1.0		ug/L			11/17/15 12:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		70 - 130		11/17/15 12:17	1
1,2-Dichloroethane-d4 (Surr)	95		70 - 130		11/17/15 12:17	1
Dibromofluoromethane (Surr)	96		70 - 130		11/17/15 12:17	1
4-Bromofluorobenzene (Surr)	93		70 - 130		11/17/15 12:17	1

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-410671/11

Matrix: Water

Analysis Batch: 410671

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/17/15 11:14	1
Ethylbenzene	1.0	U	1.0		ug/L			11/17/15 11:14	1
Toluene	1.0	U	1.0		ug/L			11/17/15 11:14	1
Xylenes, Total	1.0	U	1.0		ug/L			11/17/15 11:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		70 - 130		11/17/15 11:14	1
1,2-Dichloroethane-d4 (Surr)	96		70 - 130		11/17/15 11:14	1
Dibromofluoromethane (Surr)	98		70 - 130		11/17/15 11:14	1
4-Bromofluorobenzene (Surr)	94		70 - 130		11/17/15 11:14	1

Lab Sample ID: LCS 680-410671/5

Matrix: Water

Analysis Batch: 410671

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.2		ug/L		96	73 - 131
Ethylbenzene	50.0	48.0		ug/L		96	80 - 120
Toluene	50.0	48.8		ug/L		98	80 - 122
Xylenes, Total	100	96.7		ug/L		97	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	94		70 - 130
1,2-Dichloroethane-d4 (Surr)	98		70 - 130
Dibromofluoromethane (Surr)	98		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130

Lab Sample ID: LCSD 680-410671/6

Matrix: Water

Analysis Batch: 410671

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	48.5		ug/L		97	73 - 131	1	30
Ethylbenzene	50.0	48.2		ug/L		96	80 - 120	0	20
Toluene	50.0	48.5		ug/L		97	80 - 122	1	20
Xylenes, Total	100	97.8		ug/L		98	80 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	93		70 - 130
1,2-Dichloroethane-d4 (Surr)	101		70 - 130
Dibromofluoromethane (Surr)	101		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

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

Lab Sample ID: 680-118974-9 MS

Matrix: Water

Analysis Batch: 410671

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	52		50.0	104		ug/L		104	73 - 131
Ethylbenzene	1.0	U	50.0	50.2		ug/L		100	80 - 120
Toluene	1.0	U	50.0	49.9		ug/L		99	80 - 122
Xylenes, Total	220		100	316		ug/L		101	80 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	95		70 - 130
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
Dibromofluoromethane (Surr)	98		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 680-118974-9 MSD

Matrix: Water

Analysis Batch: 410671

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	52		50.0	103		ug/L		102	73 - 131	1	30
Ethylbenzene	1.0	U	50.0	49.3		ug/L		98	80 - 120	2	20
Toluene	1.0	U	50.0	49.5		ug/L		98	80 - 122	1	20
Xylenes, Total	220		100	311		ug/L		96	80 - 120	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	94		70 - 130
1,2-Dichloroethane-d4 (Surr)	98		70 - 130
Dibromofluoromethane (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	96		70 - 130

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

Lab Sample ID: MB 680-410700/7-A

Matrix: Water

Analysis Batch: 411357

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 410700

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Acenaphthylene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Anthracene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Benzo[a]anthracene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Benzo[a]pyrene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Benzo[b]fluoranthene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Benzo[g,h,i]perylene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Benzo[k]fluoranthene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Chrysene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Dibenz(a,h)anthracene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Fluoranthene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Fluorene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

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

Lab Sample ID: MB 680-410700/7-A

Matrix: Water

Analysis Batch: 411357

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 410700

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
2-Methylnaphthalene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Naphthalene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Phenanthrene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1
Pyrene	10	U	10		ug/L		11/17/15 15:53	11/20/15 18:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	53		32 - 114	11/17/15 15:53	11/20/15 18:09	1
Nitrobenzene-d5 (Surr)	61		30 - 117	11/17/15 15:53	11/20/15 18:09	1
Terphenyl-d14 (Surr)	72		10 - 132	11/17/15 15:53	11/20/15 18:09	1

Lab Sample ID: LCS 680-410700/8-A

Matrix: Water

Analysis Batch: 411357

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 410700

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	63.3		ug/L		63	32 - 107
Acenaphthylene	100	63.5		ug/L		63	10 - 119
Anthracene	100	69.9		ug/L		70	38 - 112
Benzo[a]anthracene	100	69.6		ug/L		70	36 - 115
Benzo[a]pyrene	100	66.6		ug/L		67	13 - 120
Benzo[b]fluoranthene	100	67.0		ug/L		67	32 - 117
Benzo[g,h,i]perylene	100	63.4		ug/L		63	21 - 118
Benzo[k]fluoranthene	100	67.5		ug/L		67	28 - 125
Chrysene	100	66.6		ug/L		67	36 - 113
Dibenz(a,h)anthracene	100	62.2		ug/L		62	32 - 115
Fluoranthene	100	71.2		ug/L		71	41 - 113
Fluorene	100	67.3		ug/L		67	39 - 115
Indeno[1,2,3-cd]pyrene	100	51.9		ug/L		52	16 - 119
1-Methylnaphthalene	100	56.1		ug/L		56	26 - 94
2-Methylnaphthalene	100	58.6		ug/L		59	24 - 92
Naphthalene	100	52.9		ug/L		53	24 - 85
Phenanthrene	100	66.6		ug/L		67	40 - 114
Pyrene	100	69.8		ug/L		70	29 - 118

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	56		32 - 114
Nitrobenzene-d5 (Surr)	70		30 - 117
Terphenyl-d14 (Surr)	69		10 - 132

Lab Sample ID: 680-118974-9 MS

Matrix: Water

Analysis Batch: 411357

Client Sample ID: TMW-1_1122015

Prep Type: Total/NA

Prep Batch: 410700

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	9.5	U	93.7	52.1		ug/L		56	32 - 107
Acenaphthylene	9.5	U	93.7	47.6		ug/L		51	10 - 119
Anthracene	9.5	U	93.7	54.4		ug/L		58	38 - 112

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

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

Lab Sample ID: 680-118974-9 MS

Matrix: Water

Analysis Batch: 411357

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Prep Batch: 410700

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	9.5	U F1	93.7	30.6	F1	ug/L		33	36 - 115
Benzo[a]pyrene	9.5	U	93.7	20.8		ug/L		22	13 - 120
Benzo[b]fluoranthene	9.5	U F1	93.7	20.4	F1	ug/L		22	32 - 117
Benzo[g,h,i]perylene	9.5	U F1	93.7	19.8		ug/L		21	21 - 118
Benzo[k]fluoranthene	9.5	U F1	93.7	21.9	F1	ug/L		23	28 - 125
Chrysene	9.5	U F1	93.7	26.9	F1	ug/L		29	36 - 113
Dibenz(a,h)anthracene	9.5	U F1	93.7	20.1	F1	ug/L		21	32 - 115
Fluoranthene	9.5	U	93.7	48.2		ug/L		51	41 - 113
Fluorene	9.5	U	93.7	55.0		ug/L		59	39 - 115
Indeno[1,2,3-cd]pyrene	9.5	U F2 F1	93.7	21.7		ug/L		23	16 - 119
1-Methylnaphthalene	9.5	U	93.7	57.7		ug/L		54	26 - 94
2-Methylnaphthalene	9.5	U	93.7	56.1		ug/L		51	24 - 92
Naphthalene	32		93.7	101		ug/L		73	24 - 85
Phenanthrene	9.5	U	93.7	55.6		ug/L		59	40 - 114
Pyrene	9.5	U	93.7	47.6		ug/L		51	29 - 118

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Fluorobiphenyl	48		32 - 114
Nitrobenzene-d5 (Surr)	59		30 - 117
Terphenyl-d14 (Surr)	25		10 - 132

Lab Sample ID: 680-118974-9 MSD

Matrix: Water

Analysis Batch: 411357

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Prep Batch: 410700

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Acenaphthene	9.5	U	93.2	53.3		ug/L		57	32 - 107	2	20
Acenaphthylene	9.5	U	93.2	50.0		ug/L		54	10 - 119	5	20
Anthracene	9.5	U	93.2	52.3		ug/L		56	38 - 112	4	20
Benzo[a]anthracene	9.5	U F1	93.2	27.8	F1	ug/L		30	36 - 115	9	40
Benzo[a]pyrene	9.5	U	93.2	19.3		ug/L		21	13 - 120	8	40
Benzo[b]fluoranthene	9.5	U F1	93.2	20.0	F1	ug/L		21	32 - 117	2	50
Benzo[g,h,i]perylene	9.5	U F1	93.2	16.5	F1	ug/L		18	21 - 118	18	50
Benzo[k]fluoranthene	9.5	U F1	93.2	19.0	F1	ug/L		20	28 - 125	14	40
Chrysene	9.5	U F1	93.2	24.4	F1	ug/L		26	36 - 113	10	50
Dibenz(a,h)anthracene	9.5	U F1	93.2	16.6	F1	ug/L		18	32 - 115	19	40
Fluoranthene	9.5	U	93.2	45.7		ug/L		49	41 - 113	5	40
Fluorene	9.5	U	93.2	53.1		ug/L		57	39 - 115	3	20
Indeno[1,2,3-cd]pyrene	9.5	U F2 F1	93.2	13.4	F1 F2	ug/L		14	16 - 119	47	40
1-Methylnaphthalene	9.5	U	93.2	58.4		ug/L		55	26 - 94	1	50
2-Methylnaphthalene	9.5	U	93.2	59.6		ug/L		56	24 - 92	6	30
Naphthalene	32		93.2	98.4		ug/L		71	24 - 85	2	40
Phenanthrene	9.5	U	93.2	52.9		ug/L		57	40 - 114	5	40
Pyrene	9.5	U	93.2	45.5		ug/L		49	29 - 118	5	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2-Fluorobiphenyl	49		32 - 114

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

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

Lab Sample ID: 680-118974-9 MSD

Matrix: Water

Analysis Batch: 411357

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Prep Batch: 410700

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Nitrobenzene-d5 (Surr)	57		30 - 117
Terphenyl-d14 (Surr)	23		10 - 132

Lab Sample ID: MB 680-411724/2-A

Matrix: Water

Analysis Batch: 412162

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 411724

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Acenaphthylene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Anthracene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Benzo[a]anthracene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Benzo[a]pyrene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Benzo[b]fluoranthene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Benzo[g,h,i]perylene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Benzo[k]fluoranthene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Chrysene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Dibenz(a,h)anthracene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Fluoranthene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Fluorene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Indeno[1,2,3-cd]pyrene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
1-Methylnaphthalene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
2-Methylnaphthalene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Naphthalene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Phenanthrene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1
Pyrene	10	U	10		ug/L		11/24/15 15:42	11/27/15 15:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	23	X	32 - 114	11/24/15 15:42	11/27/15 15:53	1
Nitrobenzene-d5 (Surr)	30		30 - 117	11/24/15 15:42	11/27/15 15:53	1
Terphenyl-d14 (Surr)	35		10 - 132	11/24/15 15:42	11/27/15 15:53	1

Lab Sample ID: LCS 680-411724/3-A

Matrix: Water

Analysis Batch: 412162

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 411724

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Acenaphthene	100	38.8		ug/L		39	32 - 107
Acenaphthylene	100	30.1		ug/L		30	10 - 119
Anthracene	100	41.4		ug/L		41	38 - 112
Benzo[a]anthracene	100	40.5		ug/L		40	36 - 115
Benzo[a]pyrene	100	41.1		ug/L		41	13 - 120
Benzo[b]fluoranthene	100	57.3		ug/L		57	32 - 117
Benzo[g,h,i]perylene	100	42.2		ug/L		42	21 - 118
Benzo[k]fluoranthene	100	58.4		ug/L		58	28 - 125
Chrysene	100	38.9		ug/L		39	36 - 113
Dibenz(a,h)anthracene	100	53.8		ug/L		54	32 - 115
Fluoranthene	100	42.8		ug/L		43	41 - 113

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

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

Lab Sample ID: LCS 680-411724/3-A

Matrix: Water

Analysis Batch: 412162

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 411724

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluorene	100	40.2		ug/L		40	39 - 115
Indeno[1,2,3-cd]pyrene	100	29.9		ug/L		30	16 - 119
1-Methylnaphthalene	100	32.8		ug/L		33	26 - 94
2-Methylnaphthalene	100	30.9		ug/L		31	24 - 92
Naphthalene	100	30.2		ug/L		30	24 - 85
Phenanthrene	100	40.8		ug/L		41	40 - 114
Pyrene	100	38.9		ug/L		39	29 - 118

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	34		32 - 114
Nitrobenzene-d5 (Surr)	37		30 - 117
Terphenyl-d14 (Surr)	41		10 - 132

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

Lab Sample ID: 680-118974-9 MS

Matrix: Water

Analysis Batch: 412162

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Prep Batch: 411724

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene - RE	9.6	U H	97.0	65.6	H	ug/L		68	32 - 107
Acenaphthylene - RE	9.6	U H	97.0	53.4	H	ug/L		55	10 - 119
Anthracene - RE	9.6	U H	97.0	63.1	H	ug/L		65	38 - 112
Benzo[a]anthracene - RE	9.6	U H	97.0	40.4	H *	ug/L		42	36 - 115
Benzo[a]pyrene - RE	9.6	U H	97.0	24.5	H *	ug/L		25	13 - 120
Benzo[b]fluoranthene - RE	9.6	U H F1	97.0	27.9	H F1 *	ug/L		29	32 - 117
Benzo[g,h,i]perylene - RE	9.6	U H	97.0	24.6	H *	ug/L		25	21 - 118
Benzo[k]fluoranthene - RE	9.6	U H F1	97.0	25.0	H F1 *	ug/L		26	28 - 125
Chrysene - RE	9.6	U H F1	97.0	36.0	H *	ug/L		37	36 - 113
Dibenz(a,h)anthracene - RE	9.6	U H F1	97.0	25.5	H F1 *	ug/L		26	32 - 115
Fluoranthene - RE	9.6	U H	97.0	63.3	H	ug/L		65	41 - 113
Fluorene - RE	9.6	U H	97.0	62.9	H	ug/L		65	39 - 115
Indeno[1,2,3-cd]pyrene - RE	9.6	U H	97.0	26.3	H *	ug/L		27	16 - 119
1-Methylnaphthalene - RE	9.6	U H	97.0	64.0	H	ug/L		61	26 - 94
2-Methylnaphthalene - RE	9.6	U H	97.0	61.8	H	ug/L		58	24 - 92
Naphthalene - RE	26	H F1	97.0	129	H F1	ug/L		106	24 - 85
Phenanthrene - RE	9.6	U H	97.0	65.0	H	ug/L		67	40 - 114
Pyrene - RE	9.6	U H	97.0	54.1	H *	ug/L		56	29 - 118

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Fluorobiphenyl - RE	58		32 - 114
Nitrobenzene-d5 (Surr) - RE	68		30 - 117
Terphenyl-d14 (Surr) - RE	27 *		10 - 132

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

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

Lab Sample ID: 680-118974-9 MSD

Matrix: Water

Analysis Batch: 412162

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Prep Batch: 411724

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Acenaphthene - RE	9.6	U H	95.6	58.2	H	ug/L		61	32 - 107	12	20
Acenaphthylene - RE	9.6	U H	95.6	45.7	H	ug/L		48	10 - 119	16	20
Anthracene - RE	9.6	U H	95.6	54.8	H	ug/L		57	38 - 112	14	20
Benzo[a]anthracene - RE	9.6	U H	95.6	36.5	H *	ug/L		38	36 - 115	10	40
Benzo[a]pyrene - RE	9.6	U H	95.6	22.3	H *	ug/L		23	13 - 120	9	40
Benzo[b]fluoranthene - RE	9.6	U H F1	95.6	24.4	H * F1	ug/L		25	32 - 117	14	50
Benzo[g,h,i]perylene - RE	9.6	U H	95.6	20.4	H *	ug/L		21	21 - 118	19	50
Benzo[k]fluoranthene - RE	9.6	U H F1	95.6	23.4	H * F1	ug/L		24	28 - 125	7	40
Chrysene - RE	9.6	U H F1	95.6	31.9	H * F1	ug/L		33	36 - 113	12	50
Dibenz(a,h)anthracene - RE	9.6	U H F1	95.6	22.4	H * F1	ug/L		23	32 - 115	13	40
Fluoranthene - RE	9.6	U H	95.6	53.8	H	ug/L		56	41 - 113	16	40
Fluorene - RE	9.6	U H	95.6	54.4	H	ug/L		57	39 - 115	15	20
Indeno[1,2,3-cd]pyrene - RE	9.6	U H	95.6	22.1	H *	ug/L		23	16 - 119	17	40
1-Methylnaphthalene - RE	9.6	U H	95.6	53.6	H	ug/L		51	26 - 94	18	50
2-Methylnaphthalene - RE	9.6	U H	95.6	50.1	H	ug/L		47	24 - 92	21	30
Naphthalene - RE	26	H F1	95.6	108	H	ug/L		85	24 - 85	18	40
Phenanthrene - RE	9.6	U H	95.6	55.5	H	ug/L		58	40 - 114	16	40
Pyrene - RE	9.6	U H	95.6	47.9	H *	ug/L		50	29 - 118	12	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2-Fluorobiphenyl - RE	48		32 - 114
Nitrobenzene-d5 (Surr) - RE	59		30 - 117
Terphenyl-d14 (Surr) - RE	25 *		10 - 132

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-410722/1-A

Matrix: Water

Analysis Batch: 410905

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 410722

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/17/15 10:31	11/18/15 03:31	1
Chromium	10	U	10		ug/L		11/17/15 10:31	11/18/15 03:31	1
Lead	10	U	10		ug/L		11/17/15 10:31	11/18/15 03:31	1
Nickel	40	U	40		ug/L		11/17/15 10:31	11/18/15 03:31	1
Zinc	20	U	20		ug/L		11/17/15 10:31	11/18/15 03:31	1

Lab Sample ID: LCS 680-410722/2-A

Matrix: Water

Analysis Batch: 410905

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 410722

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	100	89.7		ug/L		90	80 - 120
Chromium	100	92.1		ug/L		92	80 - 120
Lead	500	455		ug/L		91	80 - 120
Nickel	100	89.2		ug/L		89	80 - 120
Zinc	100	90.2		ug/L		90	80 - 120

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 680-410954/1-A

Matrix: Water

Analysis Batch: 411246

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 410954

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20		ug/L		11/18/15 10:36	11/19/15 14:25	1
Chromium	10	U	10		ug/L		11/18/15 10:36	11/19/15 14:25	1
Lead	10	U	10		ug/L		11/18/15 10:36	11/19/15 14:25	1
Nickel	40	U	40		ug/L		11/18/15 10:36	11/19/15 14:25	1
Zinc	20	U	20		ug/L		11/18/15 10:36	11/19/15 14:25	1

Lab Sample ID: LCS 680-410954/2-A

Matrix: Water

Analysis Batch: 411246

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 410954

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	100	90.2		ug/L		90	80 - 120
Chromium	100	97.6		ug/L		98	80 - 120
Lead	500	488		ug/L		98	80 - 120
Nickel	100	95.7		ug/L		96	80 - 120
Zinc	100	96.7		ug/L		97	80 - 120

Lab Sample ID: 680-118974-9 MS

Matrix: Water

Analysis Batch: 411246

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Prep Batch: 410954

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	150		100	233		ug/L		88	75 - 125
Chromium	29		100	119		ug/L		90	75 - 125
Lead	10	U	500	472		ug/L		94	75 - 125
Nickel	40	U	100	123		ug/L		90	75 - 125
Zinc	78		100	169		ug/L		91	75 - 125

Lab Sample ID: 680-118974-9 MSD

Matrix: Water

Analysis Batch: 411246

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Prep Batch: 410954

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	150		100	234		ug/L		89	75 - 125	0	20
Chromium	29		100	118		ug/L		88	75 - 125	1	20
Lead	10	U	500	458		ug/L		92	75 - 125	3	20
Nickel	40	U	100	119		ug/L		86	75 - 125	3	20
Zinc	78		100	166		ug/L		88	75 - 125	2	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-411340/30

Matrix: Water

Analysis Batch: 411340

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			11/19/15 17:53	1

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 680-411340/46

Matrix: Water

Analysis Batch: 411340

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.03		mg/L		103	90 - 110

Lab Sample ID: LCSD 680-411340/35

Matrix: Water

Analysis Batch: 411340

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.00	1.04		mg/L		104	90 - 110	1	30

Lab Sample ID: 680-118974-9 MS

Matrix: Water

Analysis Batch: 411340

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	3600	F1	1000	3930	F1	mg/L		32	90 - 110

Lab Sample ID: 680-118974-9 MSD

Matrix: Water

Analysis Batch: 411340

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	3600	F1	1000	4750	F1	mg/L		114	90 - 110	19	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-410397/13

Matrix: Water

Analysis Batch: 410397

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			11/13/15 15:32	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			11/13/15 15:32	1
Nitrite as N	0.050	U	0.050		mg/L			11/13/15 15:32	1

Lab Sample ID: LCS 680-410397/16

Matrix: Water

Analysis Batch: 410397

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.506		mg/L		101	75 - 125
Nitrate Nitrite as N	1.00	0.999		mg/L		100	90 - 110
Nitrite as N	0.500	0.493		mg/L		99	90 - 110

Lab Sample ID: 680-118974-9 MS

Matrix: Water

Analysis Batch: 410397

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	250	F1	100	308	F1	mg/L		58	75 - 125

TestAmerica Savannah

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: 680-118974-9 MS

Matrix: Water

Analysis Batch: 410397

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	250	F1	200	416	F1	mg/L		81	90 - 110
Nitrite as N	10	U	100	108		mg/L		104	90 - 110

Lab Sample ID: 680-118974-9 MSD

Matrix: Water

Analysis Batch: 410397

Client Sample ID: TMW-1_11122015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	250	F1	100	308	F1	mg/L		58	75 - 125	0	30
Nitrate Nitrite as N	250	F1	200	416	F1	mg/L		80	90 - 110	0	10
Nitrite as N	10	U	100	108		mg/L		104	90 - 110	0	10

Lab Sample ID: 680-118974-10 DU

Matrix: Water

Analysis Batch: 410397

Client Sample ID: DUP-02_11122015

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	230		227		mg/L		1	30
Nitrate Nitrite as N	230		227		mg/L		0.3	10
Nitrite as N	10	U	10	U	mg/L		NC	10

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

GC/MS VOA

Analysis Batch: 410671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-9	TMW-1_11122015	Total/NA	Water	8260B	
680-118974-9 MS	TMW-1_11122015	Total/NA	Water	8260B	
680-118974-9 MSD	TMW-1_11122015	Total/NA	Water	8260B	
680-118974-10	DUP-02_11122015	Total/NA	Water	8260B	
680-118974-12	EBJ_11122015	Total/NA	Water	8260B	
680-118974-13	FB_11122015	Total/NA	Water	8260B	
680-118974-14	TB_11122015	Total/NA	Water	8260B	
LCS 680-410671/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-410671/6	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-410671/11	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 410700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-9	TMW-1_11122015	Total/NA	Water	3520C	
680-118974-9 MS	TMW-1_11122015	Total/NA	Water	3520C	
680-118974-9 MSD	TMW-1_11122015	Total/NA	Water	3520C	
680-118974-10	DUP-02_11122015	Total/NA	Water	3520C	
680-118974-12	EBJ_11122015	Total/NA	Water	3520C	
680-118974-13	FB_11122015	Total/NA	Water	3520C	
LCS 680-410700/8-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-410700/7-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 411357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-9	TMW-1_11122015	Total/NA	Water	8270D	410700
680-118974-9 MS	TMW-1_11122015	Total/NA	Water	8270D	410700
680-118974-9 MSD	TMW-1_11122015	Total/NA	Water	8270D	410700
680-118974-10	DUP-02_11122015	Total/NA	Water	8270D	410700
680-118974-12	EBJ_11122015	Total/NA	Water	8270D	410700
LCS 680-410700/8-A	Lab Control Sample	Total/NA	Water	8270D	410700
MB 680-410700/7-A	Method Blank	Total/NA	Water	8270D	410700

Prep Batch: 411724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-9 - RE	TMW-1_11122015	Total/NA	Water	3520C	
680-118974-9 MS - RE	TMW-1_11122015	Total/NA	Water	3520C	
680-118974-9 MSD - RE	TMW-1_11122015	Total/NA	Water	3520C	
LCS 680-411724/3-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-411724/2-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 412023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-13	FB_11122015	Total/NA	Water	8270D	410700

Analysis Batch: 412162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-9 - RE	TMW-1_11122015	Total/NA	Water	8270D	411724
680-118974-9 MS - RE	TMW-1_11122015	Total/NA	Water	8270D	411724

TestAmerica Savannah

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

GC/MS Semi VOA (Continued)

Analysis Batch: 412162 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-9 MSD - RE	TMW-1_11122015	Total/NA	Water	8270D	411724
LCS 680-411724/3-A	Lab Control Sample	Total/NA	Water	8270D	411724
MB 680-411724/2-A	Method Blank	Total/NA	Water	8270D	411724

Metals

Prep Batch: 410722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-1	EW-1_11122015	Total/NA	Water	3010A	
680-118974-2	PDMW-19P_11122015	Total/NA	Water	3010A	
680-118974-3	PDMW-10R_11122015	Total/NA	Water	3010A	
680-118974-4	TMW-4R_11122015	Total/NA	Water	3010A	
680-118974-6	PDMW-8R_11122015	Total/NA	Water	3010A	
680-118974-8	MW-3R_11122015	Total/NA	Water	3010A	
680-118974-11	EBP_11122015	Total/NA	Water	3010A	
680-118974-12	EBJ_11122015	Total/NA	Water	3010A	
680-118974-13	FB_11122015	Total/NA	Water	3010A	
LCS 680-410722/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-410722/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 410905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-1	EW-1_11122015	Total/NA	Water	6010C	410722
680-118974-2	PDMW-19P_11122015	Total/NA	Water	6010C	410722
680-118974-3	PDMW-10R_11122015	Total/NA	Water	6010C	410722
680-118974-4	TMW-4R_11122015	Total/NA	Water	6010C	410722
680-118974-6	PDMW-8R_11122015	Total/NA	Water	6010C	410722
680-118974-8	MW-3R_11122015	Total/NA	Water	6010C	410722
680-118974-11	EBP_11122015	Total/NA	Water	6010C	410722
680-118974-12	EBJ_11122015	Total/NA	Water	6010C	410722
680-118974-13	FB_11122015	Total/NA	Water	6010C	410722
LCS 680-410722/2-A	Lab Control Sample	Total/NA	Water	6010C	410722
MB 680-410722/1-A	Method Blank	Total/NA	Water	6010C	410722

Prep Batch: 410954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-5	PDMW-26T_11122015	Total/NA	Water	3010A	
680-118974-7	DUP-01_11122015	Total/NA	Water	3010A	
680-118974-9	TMW-1_11122015	Total/NA	Water	3010A	
680-118974-9 MS	TMW-1_11122015	Total/NA	Water	3010A	
680-118974-9 MSD	TMW-1_11122015	Total/NA	Water	3010A	
680-118974-10	DUP-02_11122015	Total/NA	Water	3010A	
LCS 680-410954/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 680-410954/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 411246

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-5	PDMW-26T_11122015	Total/NA	Water	6010C	410954
680-118974-7	DUP-01_11122015	Total/NA	Water	6010C	410954
680-118974-9	TMW-1_11122015	Total/NA	Water	6010C	410954

TestAmerica Savannah

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Metals (Continued)

Analysis Batch: 411246 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-9 MS	TMW-1_11122015	Total/NA	Water	6010C	410954
680-118974-9 MSD	TMW-1_11122015	Total/NA	Water	6010C	410954
680-118974-10	DUP-02_11122015	Total/NA	Water	6010C	410954
LCS 680-410954/2-A	Lab Control Sample	Total/NA	Water	6010C	410954
MB 680-410954/1-A	Method Blank	Total/NA	Water	6010C	410954

General Chemistry

Analysis Batch: 410397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-1	EW-1_11122015	Total/NA	Water	353.2	
680-118974-2	PDMW-19P_11122015	Total/NA	Water	353.2	
680-118974-3	PDMW-10R_11122015	Total/NA	Water	353.2	
680-118974-4	TMW-4R_11122015	Total/NA	Water	353.2	
680-118974-5	PDMW-26T_11122015	Total/NA	Water	353.2	
680-118974-6	PDMW-8R_11122015	Total/NA	Water	353.2	
680-118974-7	DUP-01_11122015	Total/NA	Water	353.2	
680-118974-8	MW-3R_11122015	Total/NA	Water	353.2	
680-118974-9	TMW-1_11122015	Total/NA	Water	353.2	
680-118974-9 MS	TMW-1_11122015	Total/NA	Water	353.2	
680-118974-9 MSD	TMW-1_11122015	Total/NA	Water	353.2	
680-118974-10	DUP-02_11122015	Total/NA	Water	353.2	
680-118974-10 DU	DUP-02_11122015	Total/NA	Water	353.2	
680-118974-11	EBP_11122015	Total/NA	Water	353.2	
680-118974-12	EBJ_11122015	Total/NA	Water	353.2	
680-118974-13	FB_11122015	Total/NA	Water	353.2	
LCS 680-410397/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-410397/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 411340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118974-1	EW-1_11122015	Total/NA	Water	350.1	
680-118974-2	PDMW-19P_11122015	Total/NA	Water	350.1	
680-118974-3	PDMW-10R_11122015	Total/NA	Water	350.1	
680-118974-4	TMW-4R_11122015	Total/NA	Water	350.1	
680-118974-5	PDMW-26T_11122015	Total/NA	Water	350.1	
680-118974-6	PDMW-8R_11122015	Total/NA	Water	350.1	
680-118974-7	DUP-01_11122015	Total/NA	Water	350.1	
680-118974-8	MW-3R_11122015	Total/NA	Water	350.1	
680-118974-9	TMW-1_11122015	Total/NA	Water	350.1	
680-118974-9 MS	TMW-1_11122015	Total/NA	Water	350.1	
680-118974-9 MSD	TMW-1_11122015	Total/NA	Water	350.1	
680-118974-10	DUP-02_11122015	Total/NA	Water	350.1	
680-118974-11	EBP_11122015	Total/NA	Water	350.1	
680-118974-12	EBJ_11122015	Total/NA	Water	350.1	
680-118974-13	FB_11122015	Total/NA	Water	350.1	
LCS 680-411340/46	Lab Control Sample	Total/NA	Water	350.1	
LCSD 680-411340/35	Lab Control Sample Dup	Total/NA	Water	350.1	
MB 680-411340/30	Method Blank	Total/NA	Water	350.1	

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: EW-1_11122015

Date Collected: 11/12/15 09:58

Date Received: 11/13/15 08:30

Lab Sample ID: 680-118974-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410722	11/17/15 10:31	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410905	11/18/15 04:24	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		200	2 mL	2 mL	411340	11/19/15 18:47	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410397	11/13/15 15:43	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-19P_11122015

Date Collected: 11/12/15 09:30

Date Received: 11/13/15 08:30

Lab Sample ID: 680-118974-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410722	11/17/15 10:31	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410905	11/18/15 04:28	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		5	2 mL	2 mL	411340	11/19/15 17:34	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410397	11/13/15 15:50	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-10R_11122015

Date Collected: 11/12/15 10:48

Date Received: 11/13/15 08:30

Lab Sample ID: 680-118974-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410722	11/17/15 10:31	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410905	11/18/15 04:33	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		5	2 mL	2 mL	411340	11/19/15 16:58	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410397	11/13/15 16:52	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: TMW-4R_11122015

Date Collected: 11/12/15 10:30

Date Received: 11/13/15 08:30

Lab Sample ID: 680-118974-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410722	11/17/15 10:31	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410905	11/18/15 04:37	BCB	TAL SAV
		Instrument ID: ICPE								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: TMW-4R_11122015

Lab Sample ID: 680-118974-4

Date Collected: 11/12/15 10:30

Matrix: Water

Date Received: 11/13/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		2	2 mL	2 mL	411340	11/19/15 17:34	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410397	11/13/15 16:53	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-26T_11122015

Lab Sample ID: 680-118974-5

Date Collected: 11/12/15 13:55

Matrix: Water

Date Received: 11/13/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410954	11/18/15 10:36	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	411246	11/19/15 14:51	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		400	2 mL	2 mL	411340	11/20/15 09:10	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410397	11/13/15 15:56	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: PDMW-8R_11122015

Lab Sample ID: 680-118974-6

Date Collected: 11/12/15 13:00

Matrix: Water

Date Received: 11/13/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410722	11/17/15 10:31	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410905	11/18/15 04:42	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		50	2 mL	2 mL	411340	11/19/15 18:02	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410397	11/13/15 16:50	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: DUP-01_11122015

Lab Sample ID: 680-118974-7

Date Collected: 11/12/15 00:00

Matrix: Water

Date Received: 11/13/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410954	11/18/15 10:36	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	411246	11/19/15 14:55	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		400	2 mL	2 mL	411340	11/20/15 09:10	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410397	11/13/15 16:01	GRX	TAL SAV
		Instrument ID: LACHAT2								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: MW-3R_11122015

Lab Sample ID: 680-118974-8

Date Collected: 11/12/15 00:00

Matrix: Water

Date Received: 11/13/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410722	11/17/15 10:31	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410905	11/18/15 04:55	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	411340	11/19/15 17:20	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410397	11/13/15 16:02	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: TMW-1_11122015

Lab Sample ID: 680-118974-9

Date Collected: 11/12/15 15:13

Matrix: Water

Date Received: 11/13/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	410671	11/17/15 13:20	CEJ	TAL SAV
		Instrument ID: CMSO2								
Total/NA	Prep	3520C	RE		260 mL	0.5 mL	411724	11/24/15 15:42	RBS	TAL SAV
Total/NA	Analysis	8270D	RE	1	260 mL	0.5 mL	412162	11/27/15 19:28	CAR	TAL SAV
		Instrument ID: CMSE								
Total/NA	Prep	3520C			263.3 mL	0.5 mL	410700	11/17/15 15:53	RBS	TAL SAV
Total/NA	Analysis	8270D		1	263.3 mL	0.5 mL	411357	11/20/15 21:00	CAR	TAL SAV
		Instrument ID: CMSG								
Total/NA	Prep	3010A			50 mL	50 mL	410954	11/18/15 10:36	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	411246	11/19/15 14:40	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		5000	2 mL	2 mL	411340	11/20/15 09:25	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		200	2 mL	2 mL	410397	11/13/15 15:37	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: DUP-02_11122015

Lab Sample ID: 680-118974-10

Date Collected: 11/12/15 00:00

Matrix: Water

Date Received: 11/13/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	410671	11/17/15 15:27	CEJ	TAL SAV
		Instrument ID: CMSO2								
Total/NA	Prep	3520C			258.5 mL	0.5 mL	410700	11/17/15 15:53	RBS	TAL SAV
Total/NA	Analysis	8270D		1	258.5 mL	0.5 mL	411357	11/20/15 21:25	CAR	TAL SAV
		Instrument ID: CMSG								
Total/NA	Prep	3010A			50 mL	50 mL	410954	11/18/15 10:36	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	411246	11/19/15 14:58	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		5000	2 mL	2 mL	411340	11/20/15 09:25	JME	TAL SAV
		Instrument ID: KONELAB1								

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: DUP-02_11122015

Lab Sample ID: 680-118974-10

Date Collected: 11/12/15 00:00

Matrix: Water

Date Received: 11/13/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	353.2		200	2 mL	2 mL	410397	11/13/15 15:41	GRX	TAL SAV
Instrument ID: LACHAT2										

Client Sample ID: EBP_11122015

Lab Sample ID: 680-118974-11

Date Collected: 11/12/15 15:15

Matrix: Water

Date Received: 11/13/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	410722	11/17/15 10:31	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410905	11/18/15 05:00	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Analysis	350.1		1	2 mL	2 mL	411340	11/19/15 16:38	JME	TAL SAV
Instrument ID: KONELAB1										
Total/NA	Analysis	353.2		1	2 mL	2 mL	410397	11/13/15 16:03	GRX	TAL SAV
Instrument ID: LACHAT2										

Client Sample ID: EBJ_11122015

Lab Sample ID: 680-118974-12

Date Collected: 11/12/15 16:35

Matrix: Water

Date Received: 11/13/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	410671	11/17/15 11:35	CEJ	TAL SAV
Instrument ID: CMSO2										
Total/NA	Prep	3520C			259.6 mL	0.5 mL	410700	11/17/15 15:53	RBS	TAL SAV
Total/NA	Analysis	8270D		1	259.6 mL	0.5 mL	411357	11/20/15 21:50	CAR	TAL SAV
Instrument ID: CMSG										
Total/NA	Prep	3010A			50 mL	50 mL	410722	11/17/15 10:31	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410905	11/18/15 05:04	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Analysis	350.1		1	2 mL	2 mL	411340	11/19/15 16:38	JME	TAL SAV
Instrument ID: KONELAB1										
Total/NA	Analysis	353.2		1	2 mL	2 mL	410397	11/13/15 16:05	GRX	TAL SAV
Instrument ID: LACHAT2										

Client Sample ID: FB_11122015

Lab Sample ID: 680-118974-13

Date Collected: 11/12/15 15:35

Matrix: Water

Date Received: 11/13/15 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	410671	11/17/15 11:56	CEJ	TAL SAV
Instrument ID: CMSO2										
Total/NA	Prep	3520C			260.4 mL	0.5 mL	410700	11/17/15 15:53	RBS	TAL SAV

TestAmerica Savannah

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Client Sample ID: FB_11122015

Date Collected: 11/12/15 15:35

Date Received: 11/13/15 08:30

Lab Sample ID: 680-118974-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270D		1	260.4 mL	0.5 mL	412023	11/26/15 02:09	CAR	TAL SAV
		Instrument ID: CMSN								
Total/NA	Prep	3010A			50 mL	50 mL	410722	11/17/15 10:31	CRW	TAL SAV
Total/NA	Analysis	6010C		1	50 mL	50 mL	410905	11/18/15 05:09	BCB	TAL SAV
		Instrument ID: ICPE								
Total/NA	Analysis	350.1		1	2 mL	2 mL	411340	11/19/15 16:38	JME	TAL SAV
		Instrument ID: KONELAB1								
Total/NA	Analysis	353.2		1	2 mL	2 mL	410397	11/13/15 16:06	GRX	TAL SAV
		Instrument ID: LACHAT2								

Client Sample ID: TB_11122015

Date Collected: 11/12/15 00:00

Date Received: 11/13/15 08:30

Lab Sample ID: 680-118974-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	410671	11/17/15 12:17	CEJ	TAL SAV
		Instrument ID: CMSO2								

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CSX

CHAIN OF CUSTODY

TRANSPORTATION

LABORATORY INFORMATION

TestAmerica Savannah - 5102 LaRoche Avenue, Savannah, GA 31404 P: 912-354-7858 F: 912-352-0165

TestAmerica North Canton - 4101 Shuffel Drive NW, North Canton, OH 44720 P: 330-497-9396 F: 330-497-0772

TestAmerica Tampa - 6712 Benjamin Road, Suite 100, Tampa, FL 33634 P: 813-885-7427 F: 813-885-7049

TestAmerica Pensacola - 3355 McLenore Drive, Pensacola, FL 32514 P: 850-474-1001 F: 850-478-2671

TestAmerica Buffalo - 10 Hazelwood Drive, Suite 106, Amherst, NY 14228 P: 716-691-2600 F: 716-961-7991

TestAmerica Chicago - 2417 Bond Street, University Park, IL 60466 P: 708-534-5200 F: 708-534-5211

SHIPMENT INFORMATION

Shipment Method: Lab Courier

Shipment Tracking No: _____

CSXT PROJECT INFORMATION

CSXT Project Number: 9415575

CSXT Project Name: Hutchinson Island

CSXT Contact: Sam Ross

CONSULTANT INFORMATION

Company: Amec Foster Wheeler

Address: 1181 Channelside Drive

City, State, Zip: Tampa, FL 33602

LAB USE

Project #: 6-4300-5246

PM: Aaron Gatchell

Email: aaron.gatchell@amecfw.com

Phone: (813) 636-1541

Turnaround Time: ☐ Standard 6-13 Days ☐ Specify # Days _____

☐ 1 Day Rush ☐ Standard 14 Days

☐ 2 Day Rush ☒ Other CSXT Standard

☐ 3 Day Rush

Deliverables: ☐ Other Deliv: _____

☒ CSXT Standard (Level II) ☐ EDD Required, Format: _____

☐ Level III ☐ Level IV

Matrix Codes: SO = Soil LIQ = Liquid

GW = Groundwater SL = Sludge

WW = Waste Water OI = Oil

SW = Surface Water SOL = Other Solid

Preservative Codes: 3 = Sulfuric Acid Pres.

0 = No Preservatives 4 = Sodium Thiosulfate

1 = Hydrochloric Acid 5 = Sodium Hydroxide

2 = Nitric Acid 6 = Other _____

Matrix Codes: SO = Soil LIQ = Liquid

GW = Groundwater SL = Sludge

WW = Waste Water OI = Oil

SW = Surface Water SOL = Other Solid

Methods for Analysis

Method	As & Pb	Nickel	Chromium	Zinc	PAHs
Ammonia	X	X	X	X	X
Nitrate & Nitrite	X	X	X	X	X
As & Pb	X	X	X	X	X
Nickel	X	X	X	X	X
Chromium	X	X	X	X	X
Zinc	X	X	X	X	X
PAHs	X	X	X	X	X

Barcode: 680-118974 Chain of Custody

Comments & Special Analytical Requirements:

0.4c / 0.8c

0.8c / 1.2c

0.8c / 1.2c

0.8c / 1.2c

Relinquished By: [Signature] Date/Time: 11/13/15 07:50

Relinquished By: [Signature] Date/Time: 11/13/15 08:30

Relinquished By: [Signature] Date/Time: 11/13/15 08:30

Received By Laboratory: [Signature] Date/Time: 11/13/15 08:30

Lab Remarks: ORIGINAL - RETURN TO LABORATORY WITH SAMPLES

Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 680-118974-1

SDG Number: ENV0000120647/R9415575

Login Number: 118974

List Number: 1

Creator: Kicklighter, Marilyn D

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-118974-1
SDG: ENV0000120647/R9415575

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-16

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-125713-1

TestAmerica SDG: ENV0000123996/R9415575

Client Project/Site: CSX GA, Hutchinson Island, VRP

For:

AMEC Foster Wheeler E & I, Inc

1075 Big Shanty Road, NW

Suite 100

Kennesaw, Georgia 30144

Attn: Mr. Matthew Grostick



Authorized for release by:

6/2/2016 11:06:40 AM

Robert Bearden, Project Manager I

(912)354-7858

robert.bearden@testamericainc.com

Designee for

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-125713-1
SDG: ENV0000123996/R9415575

Qualifiers

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-125713-1
SDG: ENV0000123996/R9415575

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-125713-1	PDMW-47	Water	05/25/16 13:05	05/26/16 13:48
680-125713-2	DUP-1	Water	05/25/16 12:00	05/26/16 13:48

Case Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-125713-1
SDG: ENV0000123996/R9415575

Job ID: 680-125713-1

Laboratory: TestAmerica Savannah

Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project: CSX GA, Hutchinson Island, VRP
Report Number: 680-125713-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 05/26/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 4.4 C.

AMMONIA

Samples PDMW-47 (680-125713-1) and DUP-1 (680-125713-2) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were analyzed on 06/01/2016.

Samples PDMW-47 (680-125713-1)[20X] and DUP-1 (680-125713-2)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-125713-1
SDG: ENV0000123996/R9415575

Client Sample ID: PDMW-47

Date Collected: 05/25/16 13:05

Date Received: 05/26/16 13:48

Lab Sample ID: 680-125713-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	29		5.0		mg/L			06/01/16 09:10	20

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-125713-1
SDG: ENV0000123996/R9415575

Client Sample ID: DUP-1

Date Collected: 05/25/16 12:00

Date Received: 05/26/16 13:48

Lab Sample ID: 680-125713-2

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	30		5.0		mg/L			06/01/16 09:10	20

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-125713-1
SDG: ENV0000123996/R9415575

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-435556/2
Matrix: Water
Analysis Batch: 435556

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			05/31/16 16:47	1

Lab Sample ID: LCS 680-435556/1
Matrix: Water
Analysis Batch: 435556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	0.961		mg/L		96	90 - 110

Lab Sample ID: LCSD 680-435556/4
Matrix: Water
Analysis Batch: 435556

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.00	0.960		mg/L		96	90 - 110	0	30

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-125713-1
SDG: ENV0000123996/R9415575

General Chemistry

Analysis Batch: 435556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-125713-1	PDMW-47	Total/NA	Water	350.1	
680-125713-2	DUP-1	Total/NA	Water	350.1	
LCS 680-435556/1	Lab Control Sample	Total/NA	Water	350.1	
LCSD 680-435556/4	Lab Control Sample Dup	Total/NA	Water	350.1	
MB 680-435556/2	Method Blank	Total/NA	Water	350.1	

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-125713-1
SDG: ENV0000123996/R9415575

Client Sample ID: PDMW-47

Date Collected: 05/25/16 13:05

Date Received: 05/26/16 13:48

Lab Sample ID: 680-125713-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		20	2 mL	2 mL	435556	06/01/16 09:10	JME	TAL SAV
Instrument ID: KONELAB1										

Client Sample ID: DUP-1

Date Collected: 05/25/16 12:00

Date Received: 05/26/16 13:48

Lab Sample ID: 680-125713-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		20	2 mL	2 mL	435556	06/01/16 09:10	JME	TAL SAV
Instrument ID: KONELAB1										

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-125713-1
SDG: ENV0000123996/R9415575

Method	Method Description	Protocol	Laboratory
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 680-125713-1

SDG Number: ENV0000123996/R9415575

Login Number: 125713

List Number: 1

Creator: White, Menica R

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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?	N/A	
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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Serial Number: 103655

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica


THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

○ Alternate Laboratory Name/Location

Phone:
Fax:

[illegible]

680-125713 Chain of Custody

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES <input type="radio"/> NO <input type="radio"/>	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS 4.1/4.4
LABORATORY USE ONLY						

13.48

Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-125713-1
SDG: ENV0000123996/R9415575

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-16 *

* Certification renewal pending - certification considered valid.

TestAmerica Savannah

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-127916-1

TestAmerica SDG: ENV0000123996 / R9415575

Client Project/Site: CSX GA, Hutchinson Island, VRP

For:

AMEC Foster Wheeler E & I, Inc

1075 Big Shanty Road, NW

Suite 100

Kennesaw, Georgia 30144

Attn: Mr. Matthew Grostick



Authorized for release by:

7/28/2016 9:15:20 AM

Lisa Harvey, Project Manager II

(912)354-7858 e.3221

lisa.harvey@testamericainc.com

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The test results in this report meet all 2003 NELAP and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-127916-1
SDG: ENV0000123996 / R9415575

Qualifiers

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-127916-1
SDG: ENV0000123996 / R9415575

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-127916-1	PDMW-47	Water	07/26/16 11:18	07/26/16 12:06
680-127916-2	DUP-1	Water	07/26/16 11:18	07/26/16 12:06

Case Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-127916-1
SDG: ENV0000123996 / R9415575

Job ID: 680-127916-1

Laboratory: TestAmerica Savannah

Narrative

Client: AMEC Foster Wheeler E & I, Inc
Project: CSX GA, Hutchinson Island, VRP
Report Number: 680-127916-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 07/26/2016; the samples arrived in good condition. The temperature of the coolers at receipt was 7.2 C.

AMMONIA

Samples PDMW-47 (680-127916-1) and DUP-1 (680-127916-2) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were analyzed on 07/27/2016.

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

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-127916-1
SDG: ENV0000123996 / R9415575

Client Sample ID: PDMW-47

Date Collected: 07/26/16 11:18

Date Received: 07/26/16 12:06

Lab Sample ID: 680-127916-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	19		2.5		mg/L			07/27/16 13:54	10

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-127916-1
SDG: ENV0000123996 / R9415575

Client Sample ID: DUP-1

Date Collected: 07/26/16 11:18

Date Received: 07/26/16 12:06

Lab Sample ID: 680-127916-2

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	19		2.5		mg/L			07/27/16 14:03	10

QC Sample Results

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-127916-1
SDG: ENV0000123996 / R9415575

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-443127/15

Matrix: Water

Analysis Batch: 443127

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.25	U	0.25		mg/L			07/27/16 13:44	1

Lab Sample ID: LCS 680-443127/10

Matrix: Water

Analysis Batch: 443127

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	0.991		mg/L		99	90 - 110

Lab Sample ID: LCSD 680-443127/11

Matrix: Water

Analysis Batch: 443127

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.00	1.00		mg/L		100	90 - 110	1	30

QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-127916-1
SDG: ENV0000123996 / R9415575

General Chemistry

Analysis Batch: 443127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-127916-1	PDMW-47	Total/NA	Water	350.1	
680-127916-2	DUP-1	Total/NA	Water	350.1	
MB 680-443127/15	Method Blank	Total/NA	Water	350.1	
LCS 680-443127/10	Lab Control Sample	Total/NA	Water	350.1	
LCSD 680-443127/11	Lab Control Sample Dup	Total/NA	Water	350.1	

Lab Chronicle

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-127916-1
SDG: ENV0000123996 / R9415575

Client Sample ID: PDMW-47

Date Collected: 07/26/16 11:18

Date Received: 07/26/16 12:06

Lab Sample ID: 680-127916-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		10	2 mL	2 mL	443127	07/27/16 13:54	ALS	TAL SAV
Instrument ID: KONELAB1										

Client Sample ID: DUP-1

Date Collected: 07/26/16 11:18

Date Received: 07/26/16 12:06

Lab Sample ID: 680-127916-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		10	2 mL	2 mL	443127	07/27/16 14:03	ALS	TAL SAV
Instrument ID: KONELAB1										

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Method Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-127916-1
SDG: ENV0000123996 / R9415575

Method	Method Description	Protocol	Laboratory
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 680-127916-1

SDG Number: ENV0000123996 / R9415575

Login Number: 127916

List Number: 1

Creator: White, Menica R

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	Received same day of collection; chilling process has begun.
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?	N/A	
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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: AMEC Foster Wheeler E & I, Inc
Project/Site: CSX GA, Hutchinson Island, VRP

TestAmerica Job ID: 680-127916-1
SDG: ENV0000123996 / R9415575

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	803	06-30-17

1

2

3

4

5

6

7

8

9

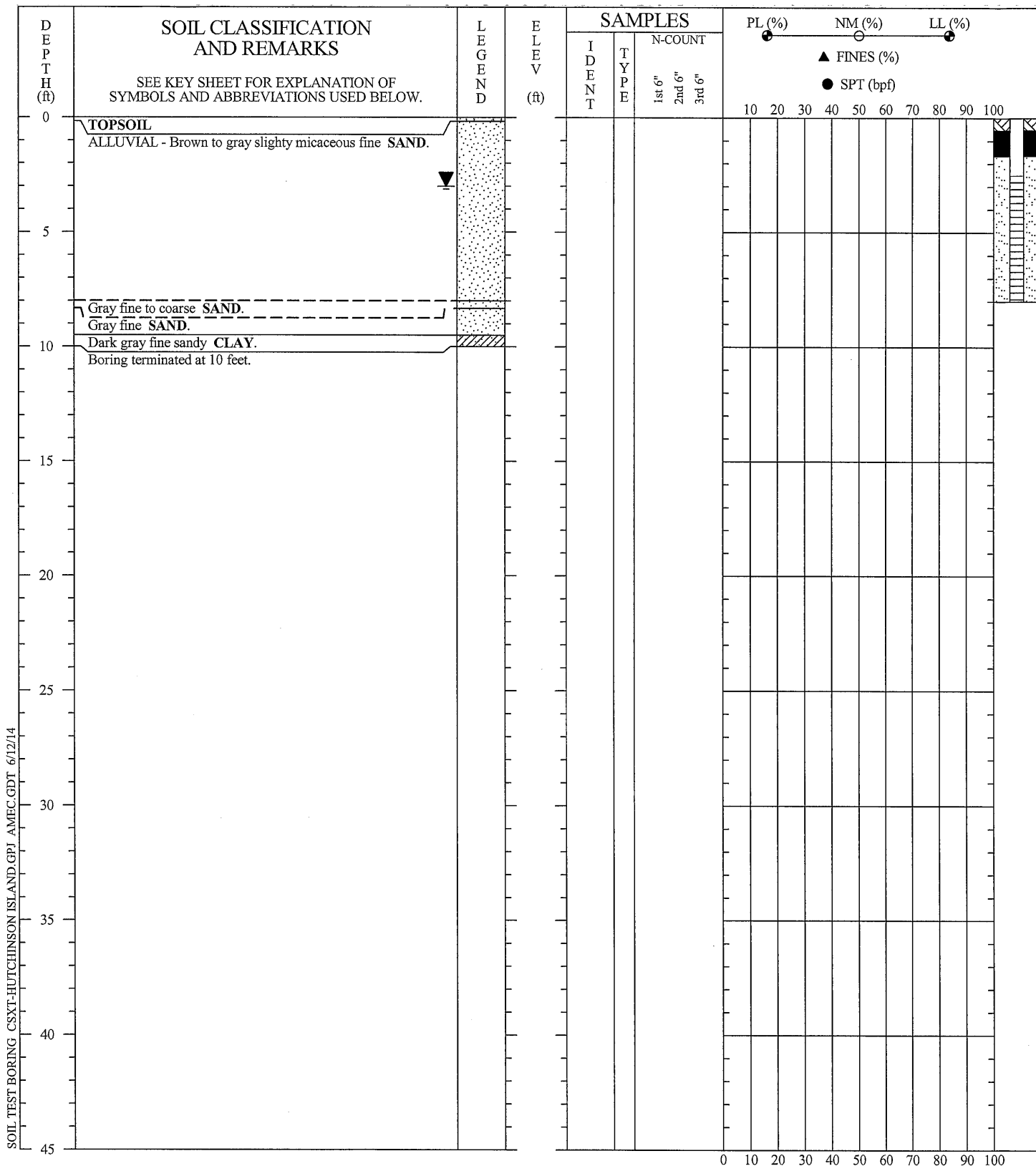
10

11

12

APPENDIX B

BORING LOGS



DRILLER: Geolab
EQUIPMENT: Geoprobe
METHOD: Direct Push/Hollow Stem Auger
HOLE DIA.: 8 inches
REMARKS: Groundwater monitoring well installed. Stabilized water depth 3.01 feet.

Prepared by: S. Foley Reviewed by: Chuck Ferry

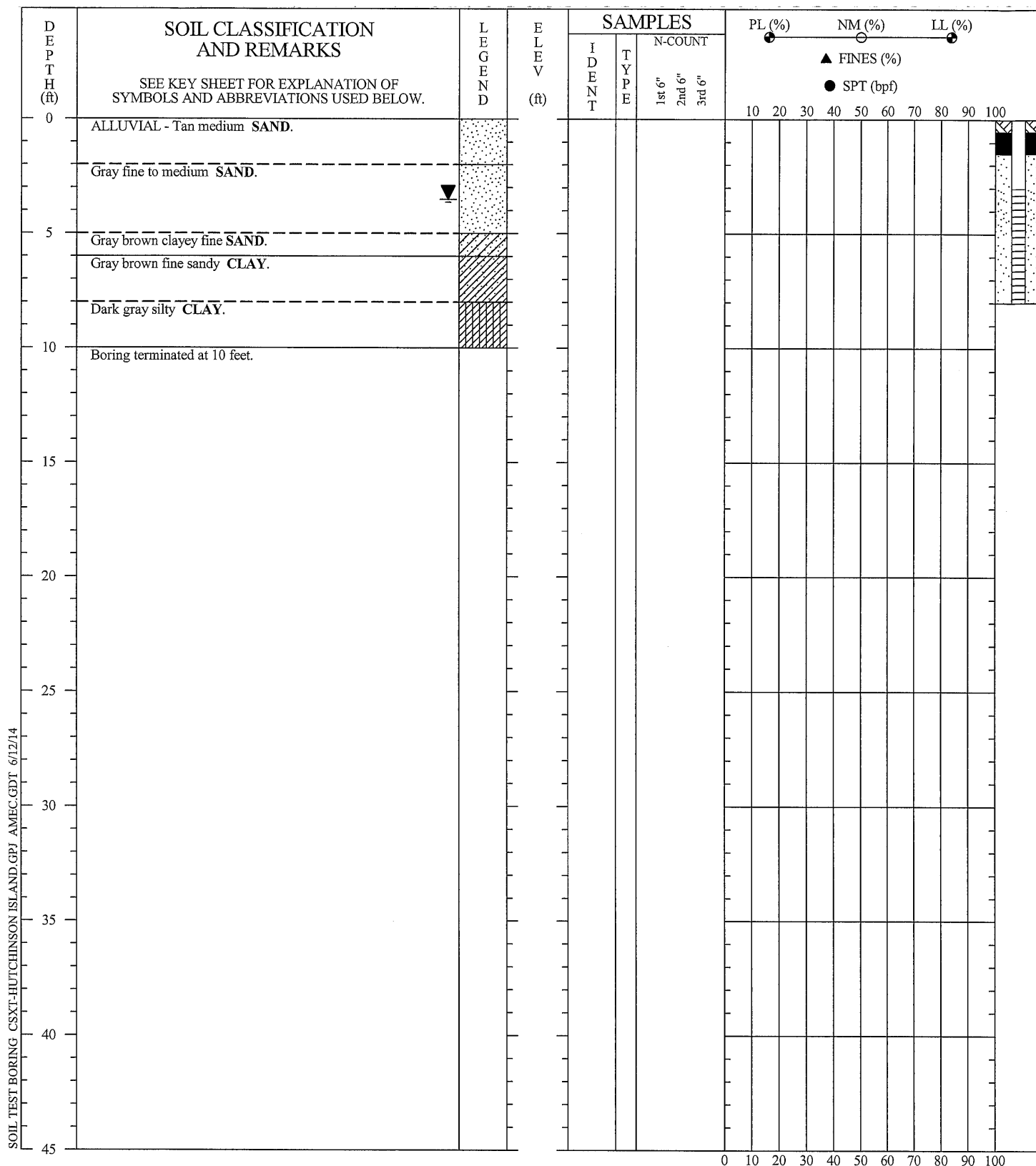
THIS RECORD IS A REASONABLE INTERPRETATION OF
SUBSURFACE CONDITIONS AT THE EXPLORATION
LOCATION. SUBSURFACE CONDITIONS AT OTHER
LOCATIONS AND AT OTHER TIMES MAY DIFFER.
INTERFACES BETWEEN STRATA ARE APPROXIMATE.
TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

SOIL TEST BORING RECORD

BORING NO.: PDMW-46
PROJECT: CSXT - Hutchinson Island
LOCATION: Savannah, Georgia
DRILLED: June 2, 2014
PROJECT NO.: 6-4300-5240

PAGE 1 OF 1

amec



DRILLER: Geolab
 EQUIPMENT: Geoprobe
 METHOD: Direct Push/Hollow Stem Auger
 HOLE DIA.: 8 inches
 REMARKS: Groundwater monitoring well installed. Stabilized water depth 3.52 feet.

Prepared by: S. Foley Reviewed by: Chuck Ferry

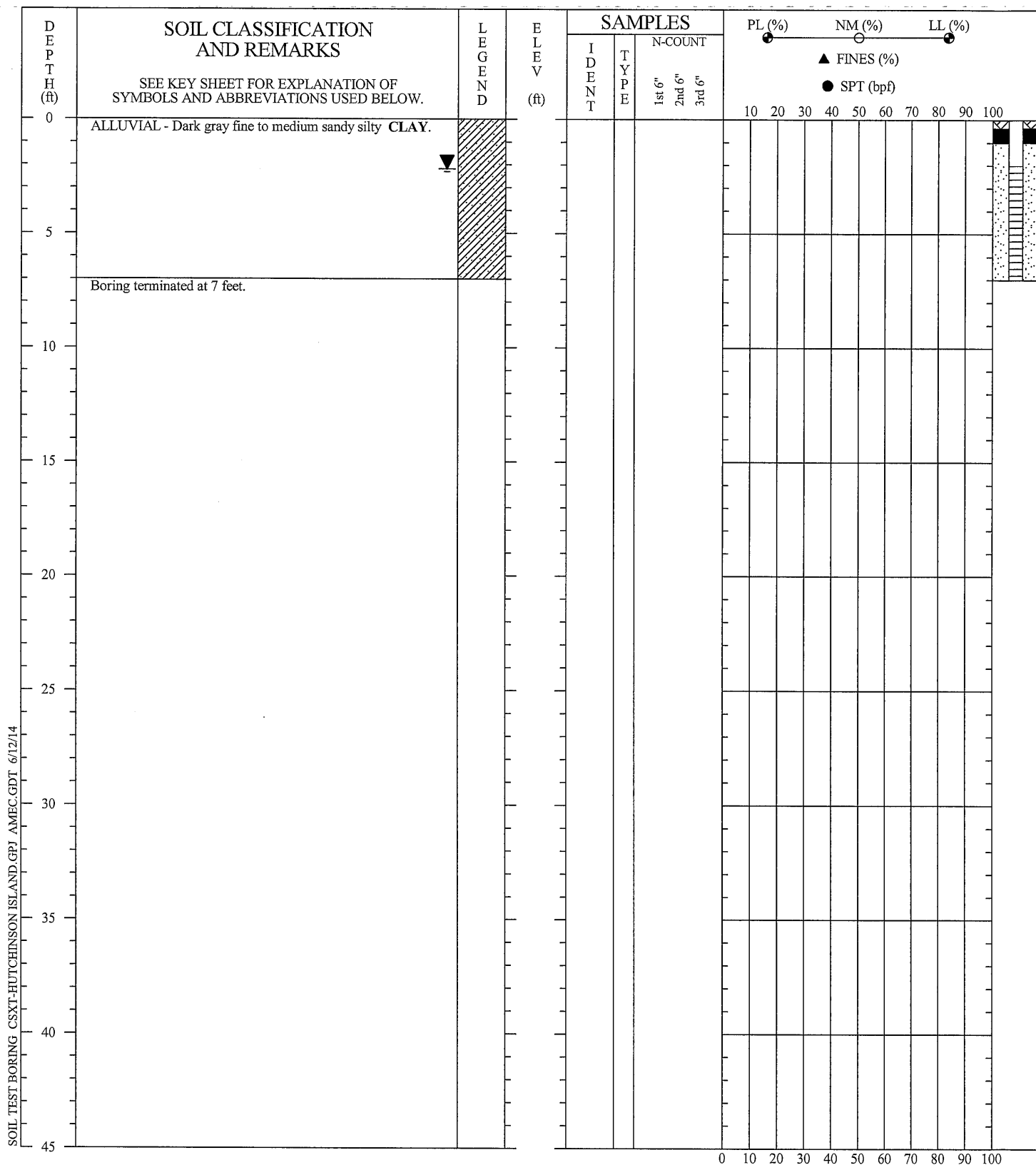
THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

SOIL TEST BORING RECORD

BORING NO.: PDMW-47
PROJECT: CSXT - Hutchinson Island
LOCATION: Savannah, Georgia
DRILLED: June 2, 2014
PROJECT NO.: 6-4300-5240

PAGE 1 OF 1

amec



DRILLER: Geolab
 EQUIPMENT: Hand Auger
 METHOD: Hand Auger
 HOLE DIA.: 6 inches
 REMARKS: Groundwater monitoring well installed. Stabilized water depth 2.19 feet.

Prepared by: S. Foley Reviewed by: Chuck Ferry

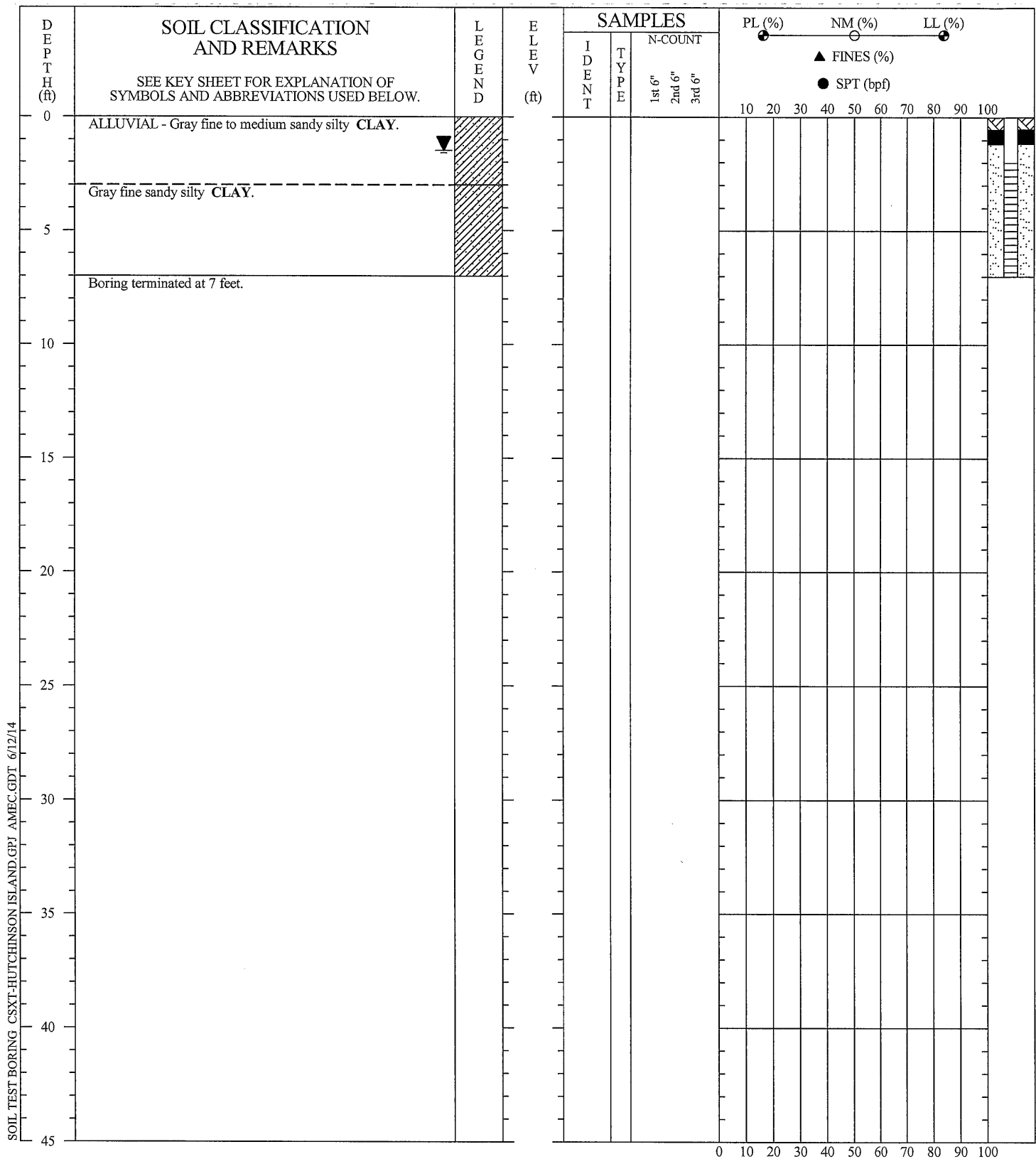
THIS RECORD IS A REASONABLE INTERPRETATION OF
 SUBSURFACE CONDITIONS AT THE EXPLORATION
 LOCATION. SUBSURFACE CONDITIONS AT OTHER
 LOCATIONS AND AT OTHER TIMES MAY DIFFER.
 INTERFACES BETWEEN STRATA ARE APPROXIMATE.
 TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

SOIL TEST BORING RECORD

BORING NO.: PDMW-48
 PROJECT: CSXT - Hutchinson Island
 LOCATION: Savannah, Georgia
 DRILLED: June 3, 2014
 PROJECT NO.: 6-4300-5240

PAGE 1 OF 1





DRILLER: Geolab
 EQUIPMENT: Hand Auger
 METHOD: Hand Auger
 HOLE DIA.: 6 inches
 REMARKS: Groundwater monitoring well installed. Stabilized water depth 1.47 feet.

Prepared by: S. Foley Reviewed by: Chuck Ferry

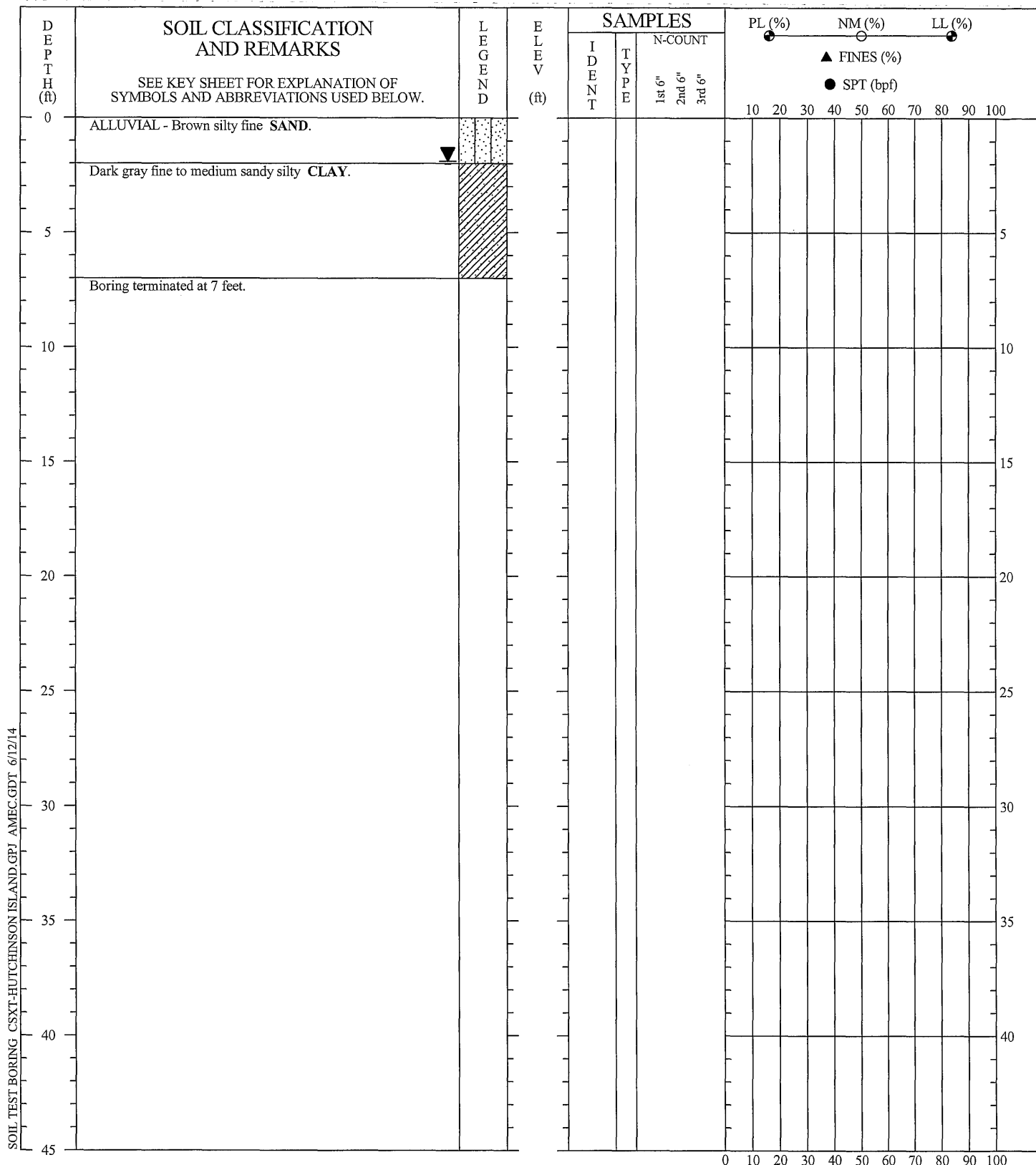
THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

SOIL TEST BORING RECORD

BORING NO.: PDMW-49
PROJECT: CSXT - Hutchinson Island
LOCATION: Savannah, Georgia
DRILLED: June 3, 2014
PROJECT NO.: 6-4300-5240

PAGE 1 OF 1





DRILLER: Geolab
 EQUIPMENT: Hand Auger
 METHOD: Hand Auger
 HOLE DIA.: 6 inches
 REMARKS: Groundwater monitoring well installed. Stabilized water depth 1.90 feet.

Prepared by: S. Foley Reviewed by: Chuck Ferry

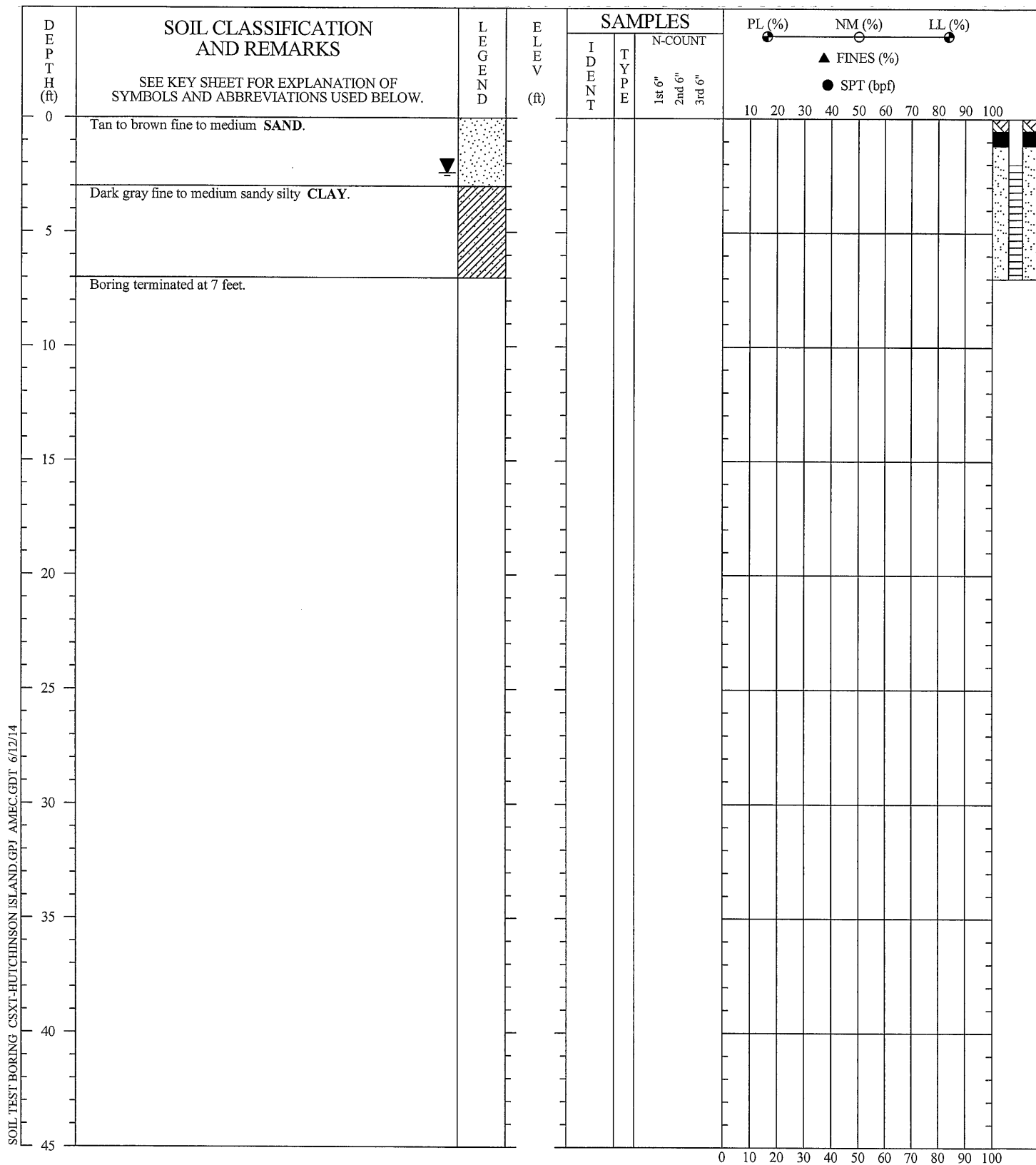
THIS RECORD IS A REASONABLE INTERPRETATION OF
 SUBSURFACE CONDITIONS AT THE EXPLORATION
 LOCATION. SUBSURFACE CONDITIONS AT OTHER
 LOCATIONS AND AT OTHER TIMES MAY DIFFER.
 INTERFACES BETWEEN STRATA ARE APPROXIMATE.
 TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

SOIL TEST BORING RECORD

BORING NO.: PDMW-50
PROJECT: CSXT - Hutchinson Island
LOCATION: Savannah, Georgia
DRILLED: June 3, 2014
PROJECT NO.: 6-4300-5240

PAGE 1 OF 1





DRILLER: Geolab
 EQUIPMENT: Hand Auger
 METHOD: Hand Auger
 HOLE DIA.: 6 inches
 REMARKS: Groundwater monitoring well installed. Stabilized water depth 2.41 feet.

Prepared by: S. Foley Reviewed by: Chuck Ferry

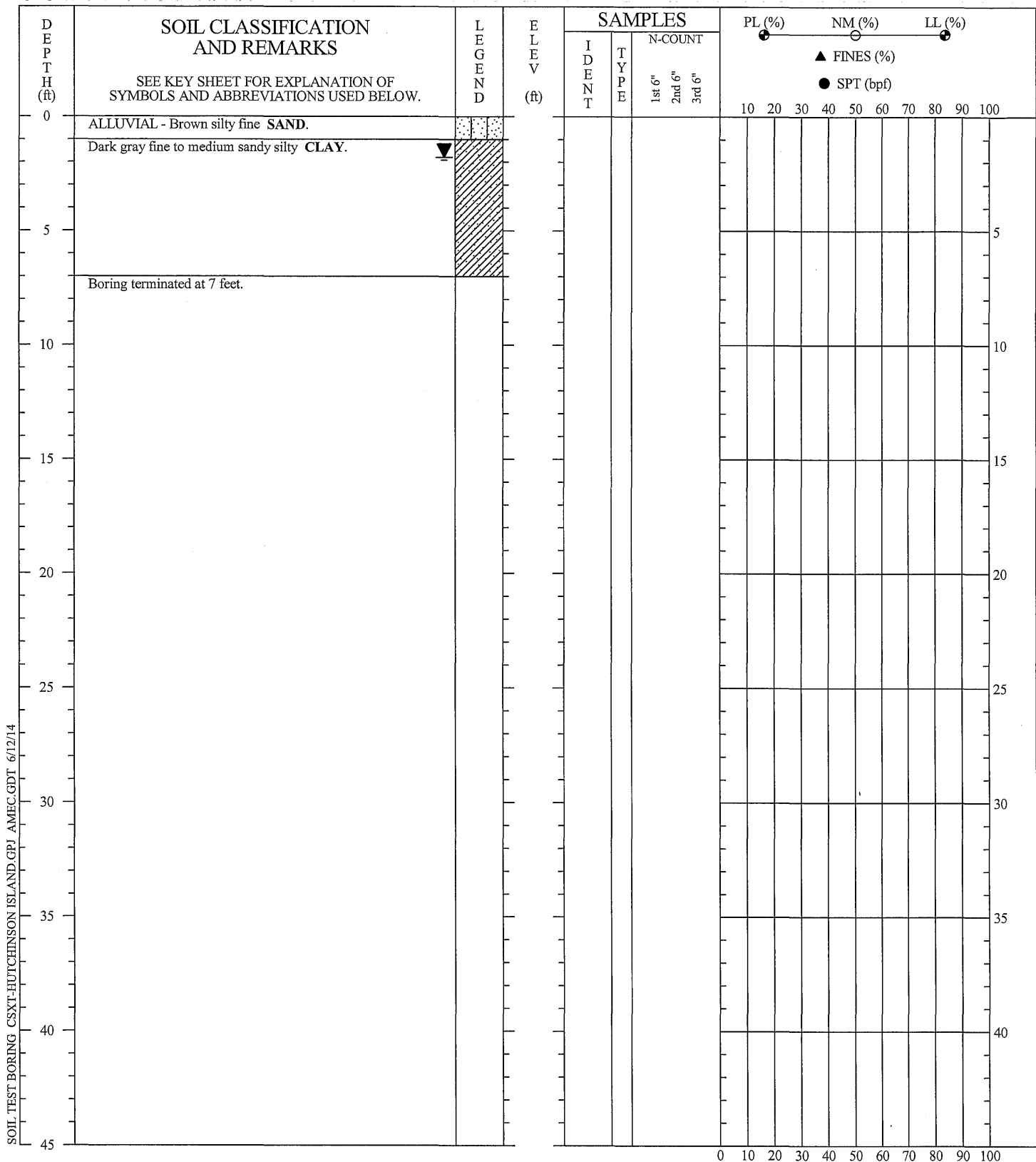
THIS RECORD IS A REASONABLE INTERPRETATION OF
 SUBSURFACE CONDITIONS AT THE EXPLORATION
 LOCATION. SUBSURFACE CONDITIONS AT OTHER
 LOCATIONS AND AT OTHER TIMES MAY DIFFER.
 INTERFACES BETWEEN STRATA ARE APPROXIMATE.
 TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

SOIL TEST BORING RECORD

BORING NO.: PDMW-51
PROJECT: CSXT - Hutchinson Island
LOCATION: Savannah, Georgia
DRILLED: June 3, 2014
PROJECT NO.: 6-4300-5240

PAGE 1 OF 1

amec



DRILLER: Geolab
 EQUIPMENT: Hand Auger
 METHOD: Hand Auger
 HOLE DIA.: 6 inches
 REMARKS: Groundwater monitoring well installed. Stabilized water depth 1.79 feet.

Prepared by: S. Foley Reviewed by: Chuck Ferry

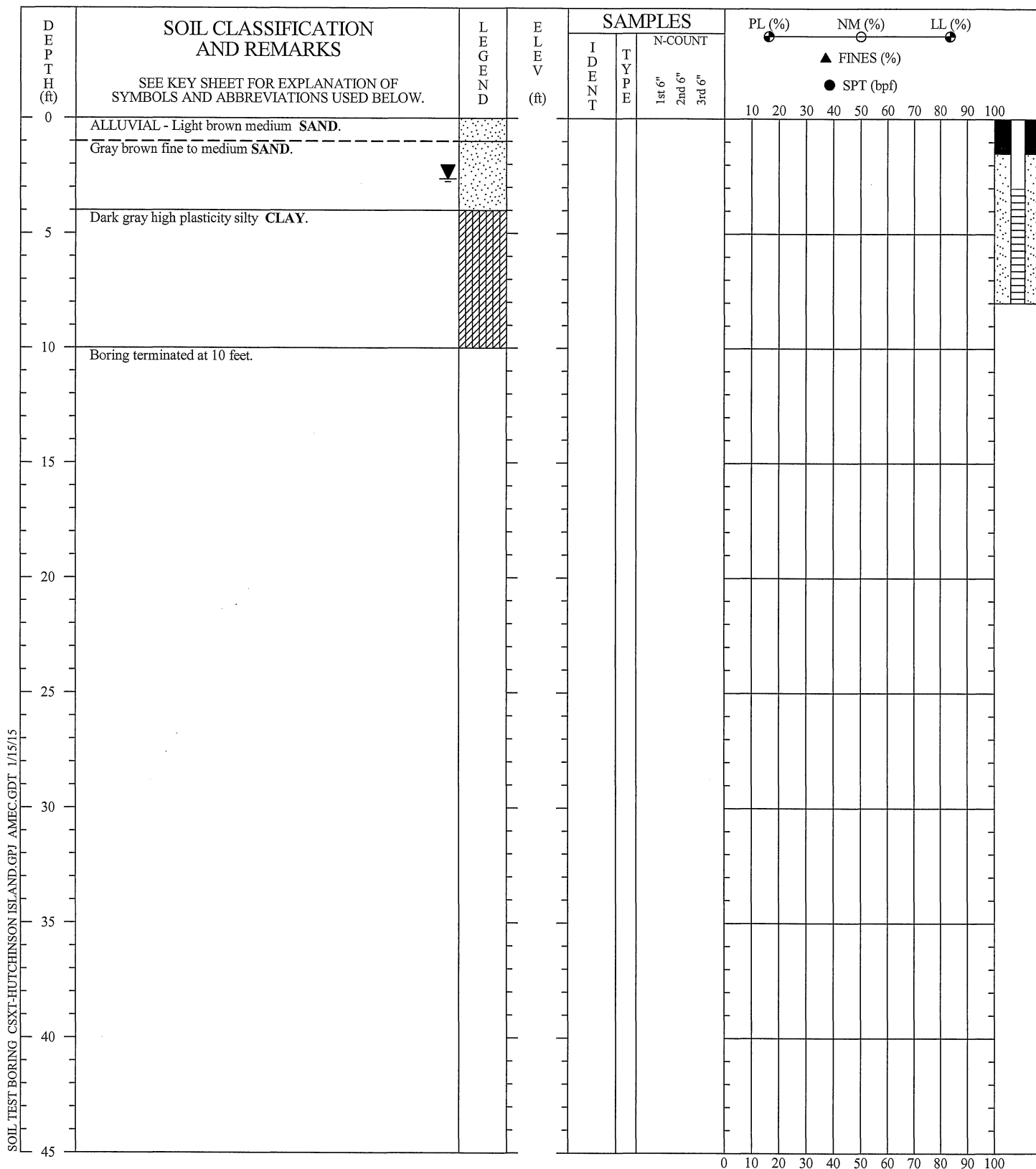
SOIL TEST BORING RECORD

BORING NO.: PDMW-52
PROJECT: CSXT - Hutchinson Island
LOCATION: Savannah, Georgia
DRILLED: June 3, 2014
PROJECT NO.: 6-4300-5240

PAGE 1 OF 1

THIS RECORD IS A REASONABLE INTERPRETATION OF
 SUBSURFACE CONDITIONS AT THE EXPLORATION
 LOCATION. SUBSURFACE CONDITIONS AT OTHER
 LOCATIONS AND AT OTHER TIMES MAY DIFFER.
 INTERFACES BETWEEN STRATA ARE APPROXIMATE.
 TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

amec



DRILLER: Geolab
 EQUIPMENT: Geoprobe
 METHOD: Direct Push/HSA
 HOLE DIA.: 2 inches/8 inches
 REMARKS: Groundwater monitoring well installed. Stabilized groundwater depth 2.63 feet.

Prepared by: S. Foley Reviewed by: C. Ferry

THIS RECORD IS A REASONABLE INTERPRETATION OF
 SUBSURFACE CONDITIONS AT THE EXPLORATION
 LOCATION. SUBSURFACE CONDITIONS AT OTHER
 LOCATIONS AND AT OTHER TIMES MAY DIFFER.
 INTERFACES BETWEEN STRATA ARE APPROXIMATE.
 TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

SOIL TEST BORING RECORD

BORING NO.: PDMW-53
PROJECT: CSXT - Hutchinson Island
LOCATION: Savannah, Georgia
DRILLED: October 31, 2014
PROJECT NO.: 6-4300-5240

PAGE 1 OF 1



APPENDIX C

BIOCHLOR OUTPUT SHEETS

Table C-1 – Summary of Biochlor Input Parameters

Data Type	Parameter	Value		Source of Data
		Northern Plume	Southern Plume	
Hydrogeology	Hydraulic Conductivity	7.8×10^{-4} cm/sec	3×10^{-3} cm/sec	Slug Test Results, AMEC Modified Corrective Action Plan, dated June 6, 2009.
	Hydraulic Gradient	0.0146	0.0015	Static Water Level Measurements 11/3/14
	Effective Porosity	0.25	0.25	Estimated based on typical sandy soil
Dispersion	Longitudinal Dispersivity	30	60	10% of estimated plume length
	Transverse Dispersivity	0.1	0.1	0.1 x longitudinal dispersivity
	Vertical Dispersivity	1×10^{-99}	1×10^{-99}	Biochlor recommended value
Adsorption	Retardation Factor	1.1	1.1	Calculated from $R=1+K_{oc} \times f_{oc} \times p/n$ for northern and southern plumes.
	Aquifer Matrix Density	1.7 gm/cm ³	1.7 gm/cm ³	Estimated based on typical density of sandy soil
	Foc	0.001	0.001	Default value
	Koc	14	14	Literature value
Biotransformation	Biotransformation Rate Coefficient	0.693	0.21	Based on calibration to field data using 40-year simulation time (release of ammonia assumed in the 1970s). Started with literature values (Buss, S.R., Herbert, A.W., Morgan, P., & Thornton, S.F., 2003) and adjusted model to fit field data.
General	Modeled Area Length	200	600	Northern plume modeled from TMW-1 to PDMW-49, located adjacent to drainage canal. Southern plume modeled from EW-1 to PDMW-30P.
	Modeled Area Width	300	180	Modeled area widths were estimated based on location of 100 mg/L isopleth.
	Simulation Time	150	150	Simulation time from estimated release to point at which ammonia plume begins to recede.
Source Data	Source Thickness, ft.	10	10	From monitoring well boring logs.
	Source Width, ft.	300	100	Modeled as a single-plane source based on location of 100 mg/L isopleth.
	Source Concentrations, mg/L	18000	5000	TW-1 data represents the highest concentration detected to date. EW-1 initial concentration estimated based on current concentration and estimated release date.

Table C-2 - Model Sensitivity Analysis; Calculated for May 2015 at PDMW-49

Hydraulic Conductivity (Baseline = 7.8×10^{-4} cm/sec)				
Constituent	Concentrations (mg/L)			
	2x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	296	10.7	0.001	0.63
Hydraulic Gradient (Baseline = 0.005)				
Constituent	Concentrations (mg/L)			
	2x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	296	10.7	0.001	0.63
Effective Porosity (Baseline = 0.25)				
Constituent	Concentrations (mg/L)			
	1.2x Baseline	Baseline	0.8x Baseline	Observed
NH ₃	1.85	10.7	49.8	0.63
Longitudinal Dispersivity (Baseline = 30 feet)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	22.7	10.7	2.3	0.63
Transverse Dispersivity (Baseline = 0.1 x Longitudinal Dispersivity)				
Constituent	Concentrations (mg/L)			
	2x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	10.7	10.7	10.7	0.63
Retardation Factor (Baseline = 4.0)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	0.5	10.7	14.1	0.63
Aquifer Matrix Density (Baseline = 1.7 gm/cm³)				
Constituent	Concentrations (mg/L)			
	1.2x Baseline	Baseline	0.90x Baseline	Observed
NH ₃	10.6	10.7	10.7	0.63
Foc (Baseline = 0.001)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.85x Baseline	Observed
NH ₃	10.7	10.7	10.7	0.63
Koc (Baseline = 14)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	10.7	10.7	0.03	0.63
Biotransformation Rate Constant (Baseline = 0.533)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	3.0	10.7	114	0.63
First Order Decay Constant (Baseline = 0.04)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	1,632	3,634	8,087	3,600
Source Width (Baseline = 300 Ft)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.85x Baseline	Observed
NH ₃	10.7	10.7	10.7	0.63

Table C-3 - Model sensitivity analysis; calculated for May 2015 at PDMW-30P

Hydraulic Conductivity (Baseline = 3.0×10^{-3} cm/sec)				
Constituent	Concentrations (mg/L)			
	2x Baseline	Baseline	0.5x Baseline*	Observed
NH ₃	38.8	6.3	0.2	1.1
Hydraulic Gradient (Baseline = 0.00153)				
Constituent	Concentrations (mg/L)			
	2x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	38.8	6.3	0.2	1.1
Effective Porosity (Baseline = 0.25)				
Constituent	Concentrations (mg/L)			
	1.2x Baseline	Baseline	0.8x Baseline	Observed
NH ₃	3.12	6.3	12.8	1.1
Longitudinal Dispersivity (Baseline = 10 feet)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	5.5	6.3	7.7	1.1
Transverse Dispersivity (Baseline = 0.1 x Longitudinal Dispersivity)				
Constituent	Concentrations (mg/L)			
	2x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	6.3	6.3	6.3	1.1
Retardation Factor (Baseline = 2.0)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	4.8	6.3	9.9	1.1
Aquifer Matrix Density (Baseline = 1.7 gm/cm³)				
Constituent	Concentrations (mg/L)			
	1.2x Baseline	Baseline	0.90x Baseline	Observed
NH ₃	6.3	6.3	6.4	1.1
Foc (Baseline = 0.001)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.85x Baseline	Observed
NH ₃	6.3	6.3	6.3	1.1
Koc (Baseline = 14)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	3.0	6.3	2.8	1.1
Biotransformation Rate Constant (Baseline = 0.693)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	0.9	6.3	51.6	1.1
First Order Decay Constant (Baseline = 0.04)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	4.0	271	557	270
Source Width (Baseline = 300 Ft)				
Constituent	Concentrations (mg/L)			
	1.5x Baseline	Baseline	0.5x Baseline	Observed
NH ₃	6.3	6.3	6.2	1.1

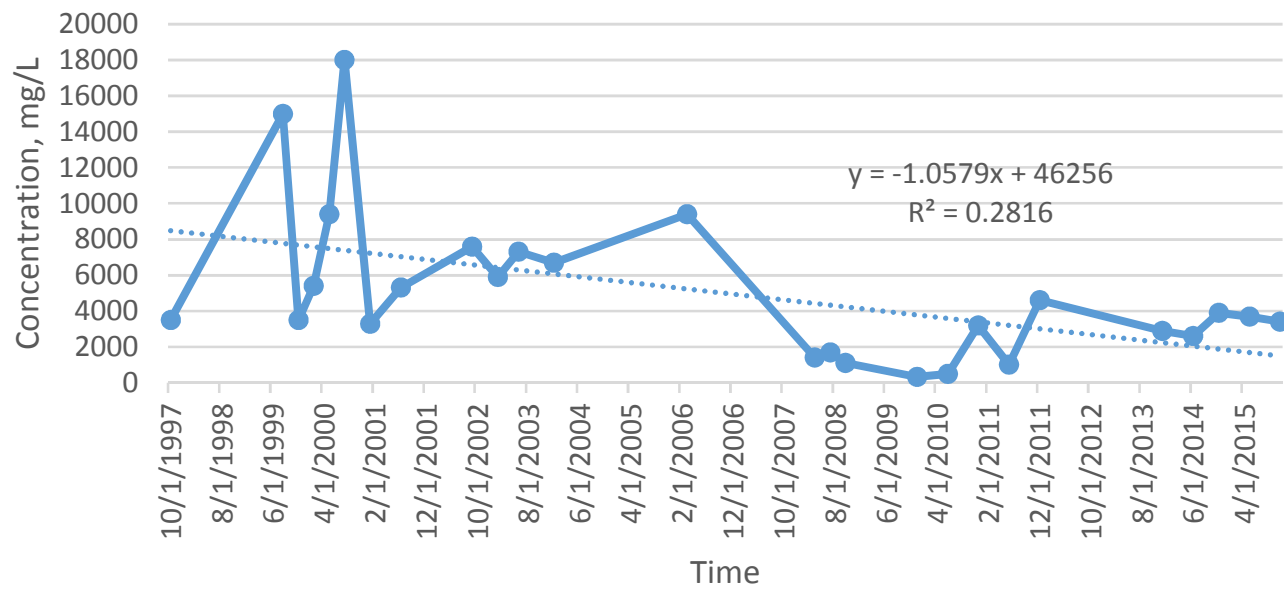
CSXT-Hutchinson Island

Savannah, Georgia

Table C-4 – Summary of Predicted vs. Observed COC Concentrations, 2015

Location	Sampling Date	Ammonia		Nitrite		Nitrate		Comments
		Predicted	Observed	Predicted	Observed	Predicted	Observed	
TMW-1	11/2015	3,634	3,600	0.04	<10	56.5	250	Source Area Well
PDMW-48	11/2015	557	28	0.09	0.11	133	0.11	
PDMW-49	11/2015	10.6	0.63	0.015	<0.05	21.5	<0.05	POD Well
EW-1	11/2015	271.3	270	0.0	<0.05	0.07	<0.05	Source Area Well
PDMW-10R	11/2015	87.7	7.9	0.0	<0.05	0.086	<0.05	
PDMW-46	11/2015	6.3	1.1	0.0	<0.05	0.13	0.073	POD Well

TMW-1 Ammonia Concentration Over Time



BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

TMW-1 - PDMW-49

Calibration

Run Name

Data Input Instructions:

- 115 → 1. Enter value directly....or
↑ or 0.02 → 2. Calculate by filling in gray cells. Press Enter, then (C)
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if
Biotransformation
is Occurring →

Natural Attenuation
Screening Protocol

TYPE OF CONSTITUENT:

Ammonia



Ethanes



1. ADVECTION

Seepage Velocity*

Vs

22.3

(ft/yr)

or

Hydraulic Conductivity

K

7.8E-04

(cm/sec)

Hydraulic Gradient

i

0.0069

(ft/ft)

Effective Porosity

n

0.25

(-)

2. DISPERSION

Alpha x*

10

(ft)

(Alpha y) / (Alpha x)*

0.1

(-)

(Alpha z) / (Alpha x)*

1.E-99

(-)

3. ADSORPTION

Retardation Factor*

R

or

Soil Bulk Density, rho

1.7

(kg/L)

Fraction Organic Carbon, foc

1.0E-3

(-)

Partition Coefficient

Koc

14

(L/kg)

1.10

(-)

Ammonia

Nitrite

Nitrate

0

(L/kg)

1.00

(-)

0

(L/kg)

1.00

(-)

(L/kg)

1.00

(-)

(L/kg)

1.00

(-)

Common R (used in model)* = 4.00

4. BIOTRANSFORMATION

Zone 1

NH3 → Nitrite

Nitrite → Nitrate

-1st Order Decay Coefficient*

λ (1/yr)

0.533

0.693

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

half-life (yrs)

1.30

1.00

Yield

2.75

1.35

Zone 2



λ (1/yr)

0.000

0.000

0.000

0.000

0.000

half-life (yrs)

λ
HELP

5. GENERAL

Simulation Time*

40

(yr)

Modeled Area Width*

300

(ft)

Modeled Area Length*

320

(ft)

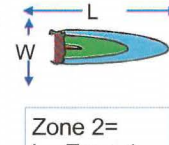
Zone 1 Length*

320

(ft)

Zone 2 Length*

(ft)



6. SOURCE DATA

Source Options

TYPE: Decaying
Single Planar

Source Thickness in Sat. Zone*

10

(ft)

Width* (ft)

300

Conc. (mg/L)*

C1

Ammonia

18000.0

Nitrite

.19

Nitrate

280.0

k_s*
(1/yr)

0.04

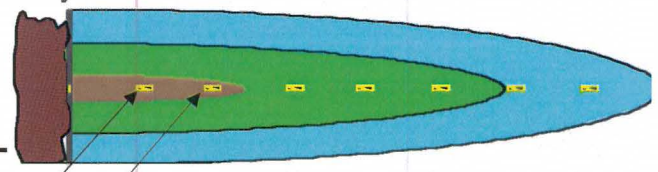
0.04

0.04

0.04

0.04

0.04



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

Ammonia Conc. (mg/L)

3600.0

28.0

.63

Nitrite Conc. (mg/L)

.05

.11

<0.05

Nitrate Conc. (mg/L)

250.0

.11

<0.05

Distance from Source (ft)

0

120

320

Date Data Collected

2015

2013

2

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE

RUN ARRAY

Help

Restore

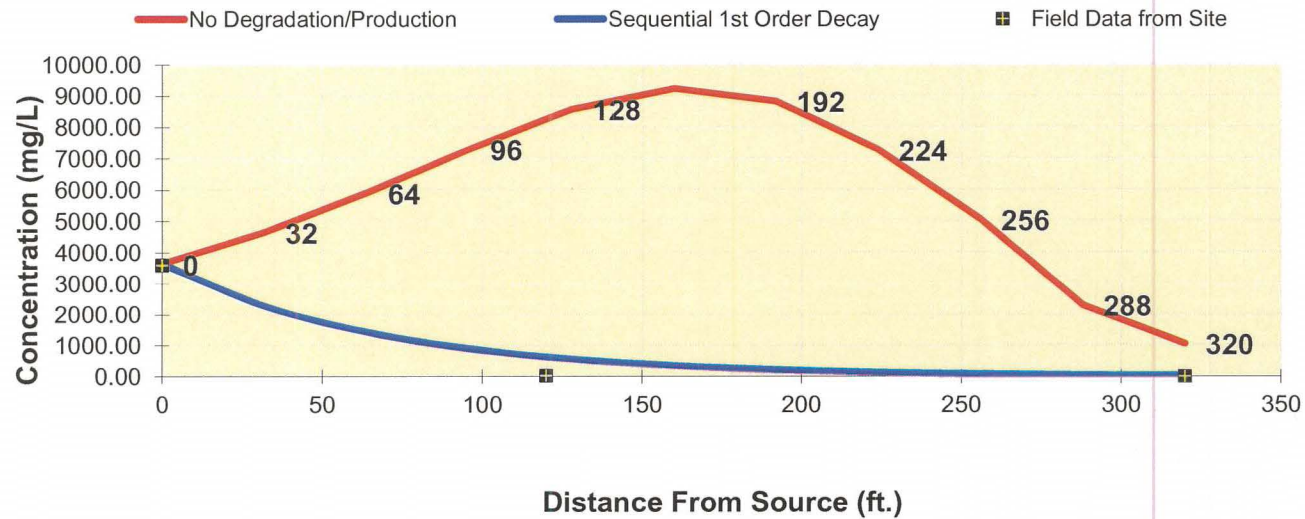
RESET

SEE OUTPUT

Paste

AMMONIA CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Ammonia	Distance from Source (ft)										
	0	32	64	96	128	160	192	224	256	288	320
No Degradation	3634.138	4651.756	5900.108	7297.250	8567.835	9232.710	8826.700	7273.109	5052.096	2298.801	1055.458
Biotransformation	3634.1368	2276.674	1426.107	892.701	557.117	344.230	207.378	118.792	62.268	26.958	10.659
Field Data from Site	Monitoring Well Locations (ft)										
	TMW-1	PDMW-48	PDMW-49								
Field Data from Site	3600.000	28.000	0.630								



See PCE

See TCE

See DCE

Prepare Animation

Time:

40.0 Years

Log ↔ Linear

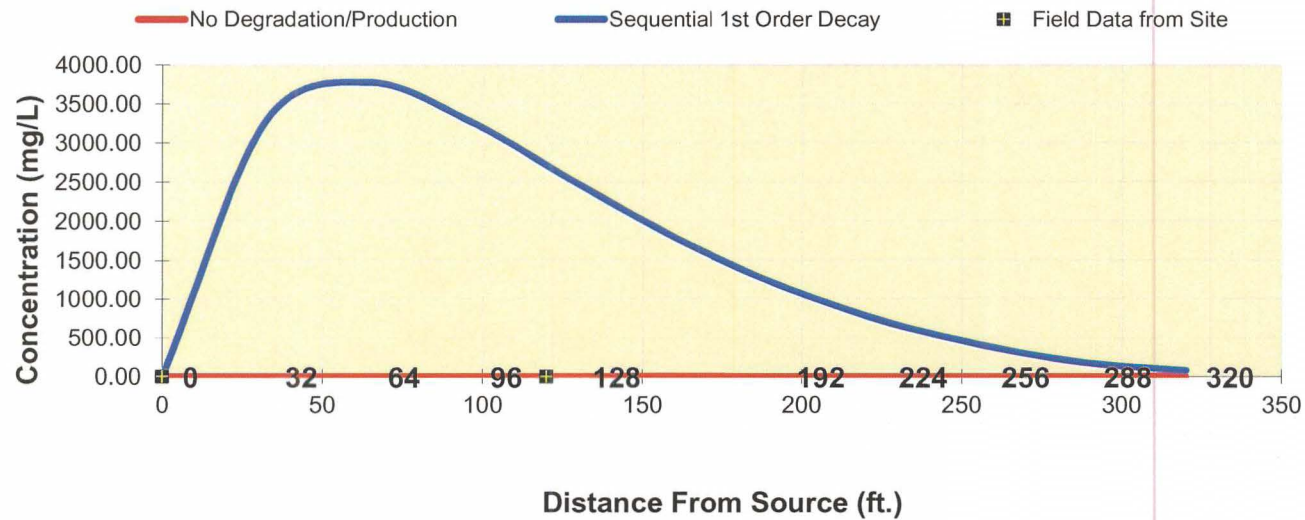
Return to
Input

To All

To Array

NITRITE CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Nitrite	Distance from Source (ft)										
	0	32	64	96	128	160	192	224	256	288	320
No Degradation	0.038	0.049	0.062	0.077	0.090	0.097	0.093	0.077	0.053	0.031	0.015
Biotransformation	0.0401	3275.545	3780.781	3276.827	2519.191	1796.603	1196.879	735.462	409.935	179.135	72.392
Field Data from Site	Monitoring Well Locations (ft)										
	TMW-1	PDMW-48	PDMW-49								
	0.050	0.110	<0.05								



See PCE

See TCE

See DCE

Prepare Animation

Time:

40.0 Years

Log ↔ Linear

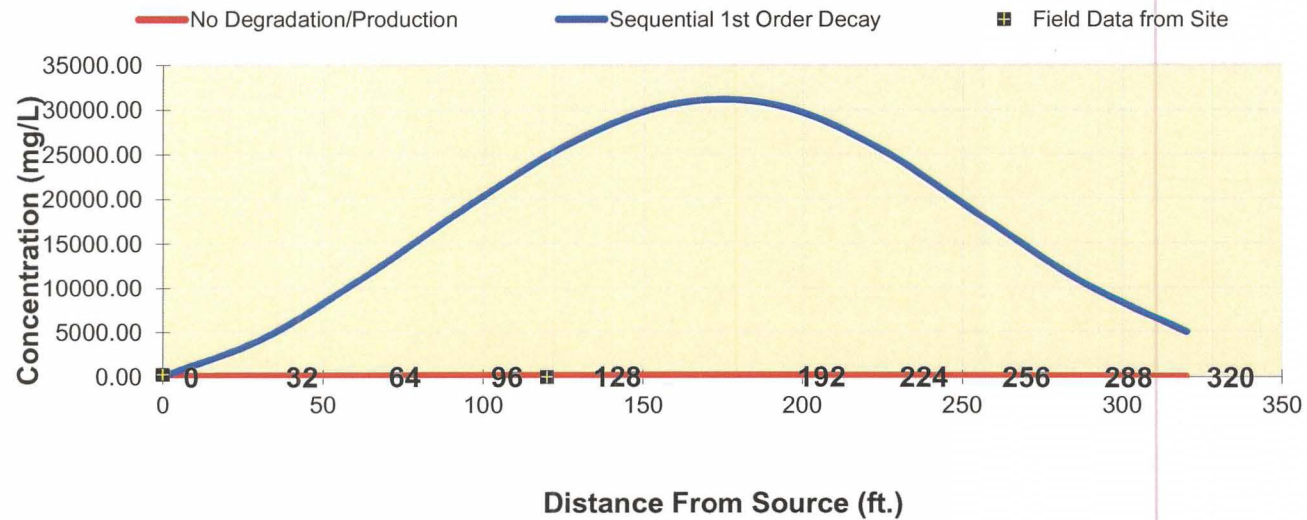
Return to
Input

To All

To Array

NITRATE CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Nitrate	Distance from Source (ft)											
	0	32	64	96	128	160	192	224	256	288	320	
No Degradation	56.531	72.361	91.779	113.513	133.277	143.620	137.304	113.137	78.588	45.289	21.417	
Biotransformation	56.5316	4467.933	11597.535	19466.786	26472.280	30716.822	30520.873	25680.770	18049.985	10512.056	4995.486	
Monitoring Well Locations (ft)												
	TMW-1	PDMW-48	PDMW-49									
Field Data from Site	250.000	0.110	<0.05									



See PCE

See TCE

See DCE

Prepare Animation

Time:

40.0 Years

Log ↔ Linear

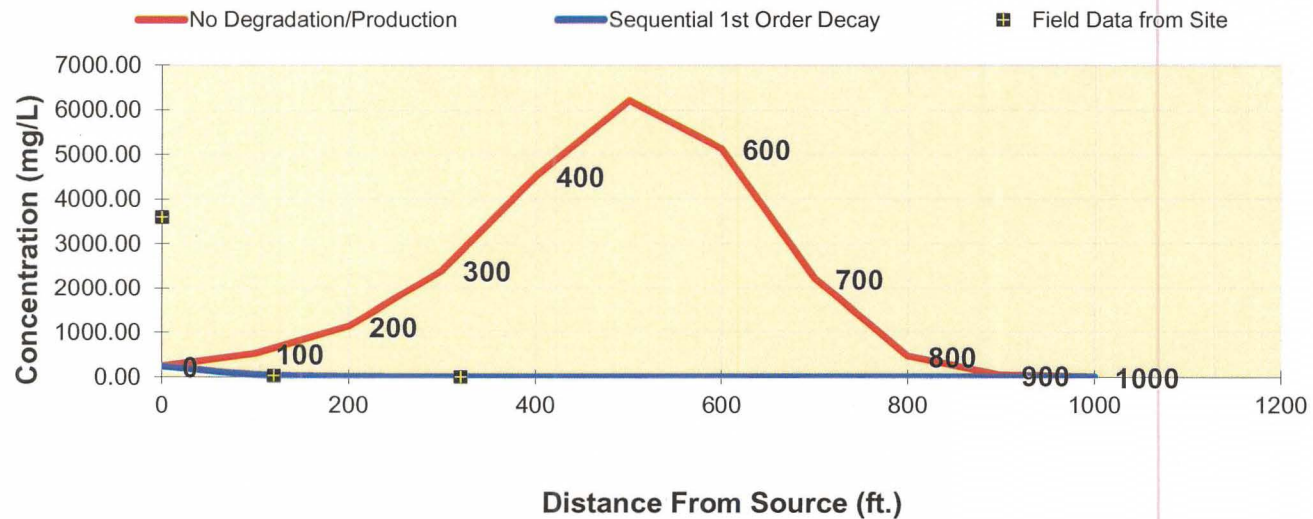
Return to
Input

To All

To Array

AMMONIA CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Ammonia	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
No Degradation	239.398	521.711	1134.161	2405.761	4519.696	6213.587	5129.378	2222.368	468.455	46.100	2.069
Biotransformation	239.3979	55.520	12.876	2.986	0.692	0.160	0.035	0.007	0.001	0.000	0.000
Monitoring Well Locations (ft)											
Field Data from Site											



See PCE

See TCE

See DCE

Replay

Time:

108.0 Years

Log \longleftrightarrow Linear

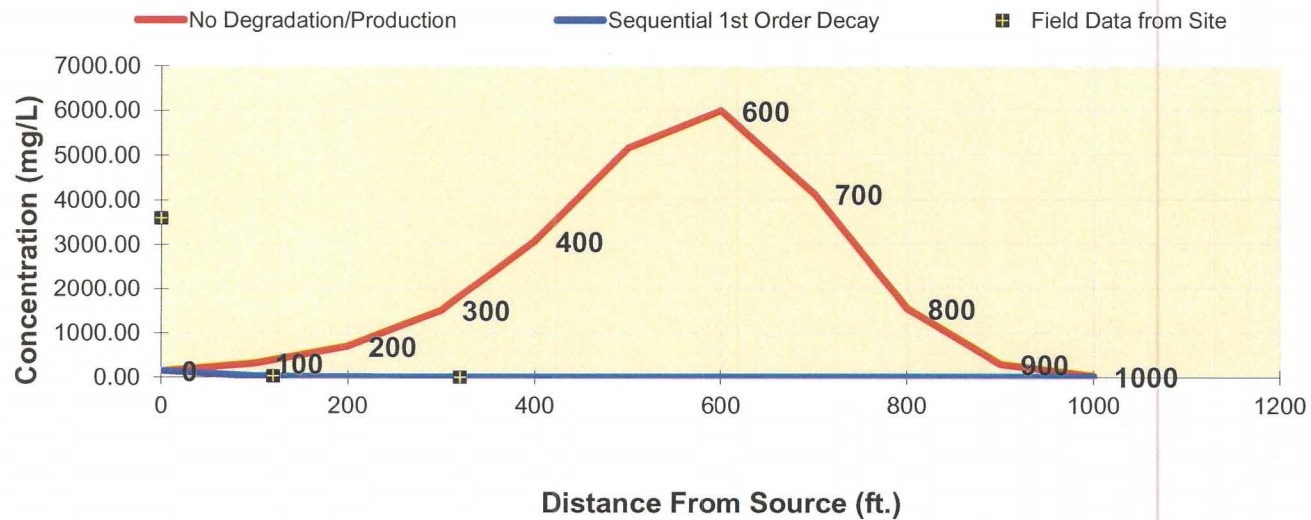
Return to
Input

To All

To Array

AMMONIA CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Ammonia	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
No Degradation	148.135	322.833	702.992	1516.179	3081.370	5173.337	6000.513	4146.588	1556.151	300.987	29.131
Biotransformation	148.1354	34.355	7.967	1.848	0.429	0.099	0.023	0.005	0.001	0.000	0.000
Monitoring Well Locations (ft)											
Field Data from Site											



See PCE

See TCE

See DCE

Replay

Time:

120.0 Years

Log \longleftrightarrow Linear

Return to
Input

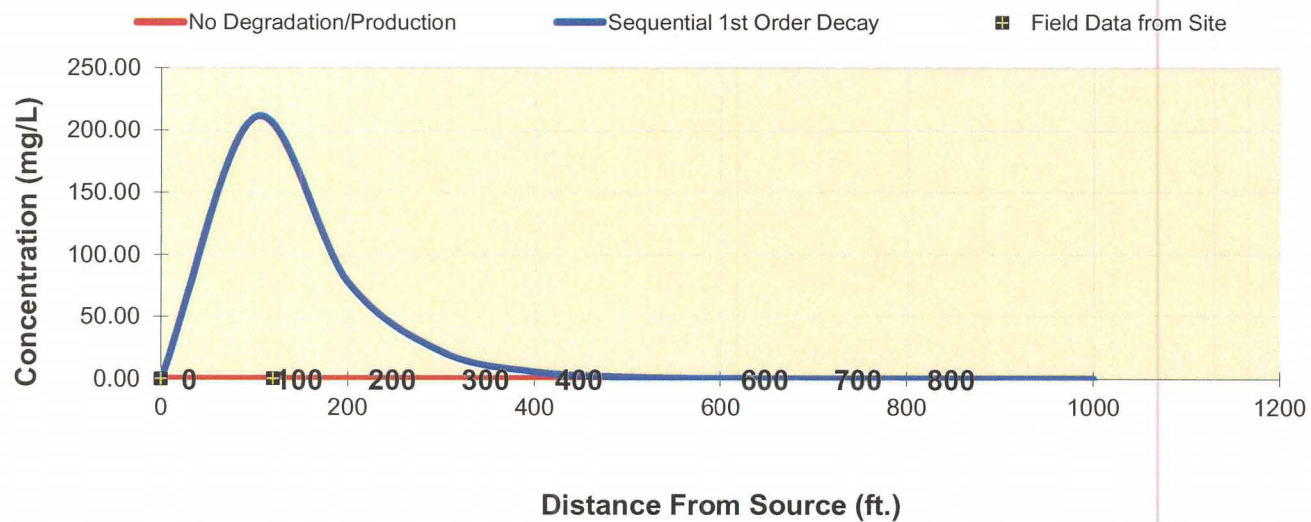
To All

To Array

NITRITE CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Nitrite	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
No Degradation	0.003	0.006	0.012	0.026	0.049	0.066	0.054	0.023	0.005	0.000	0.000
Biotransformation	0.0026	210.438	77.427	21.850	5.595	1.362	0.310	0.058	0.007	0.001	0.000

Field Data from Site	Monitoring Well Locations (ft)										



See PCE

See TCE

See DCE

Replay

Time:

108.0 Years

Log ↔ Linear

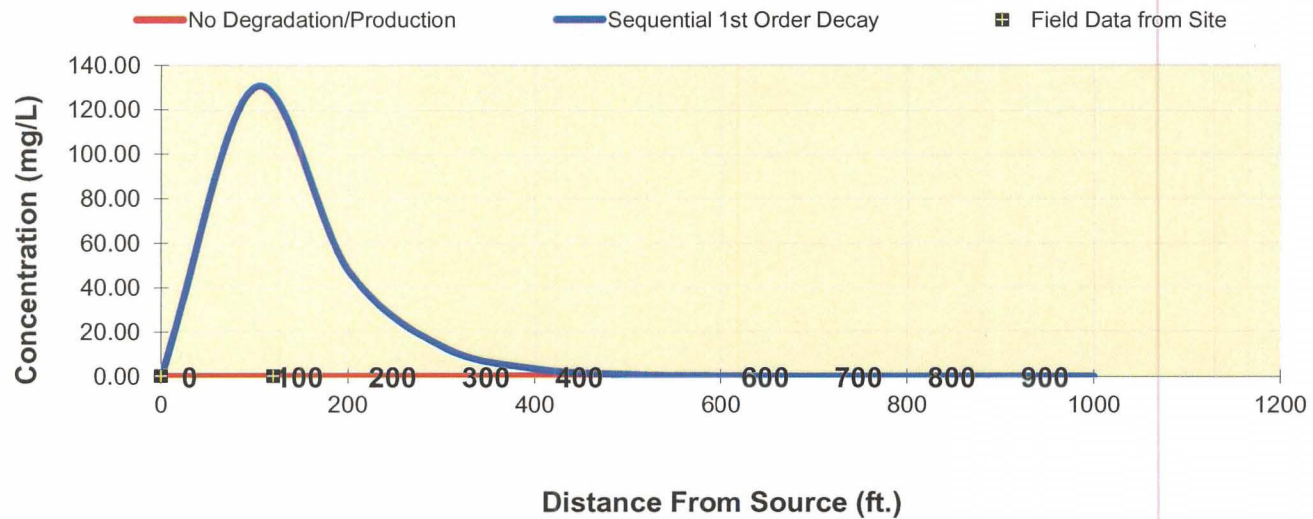
Return to
Input

To All

To Array

NITRITE CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Nitrite	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
No Degradation	0.002	0.003	0.007	0.016	0.033	0.055	0.063	0.044	0.016	0.003	0.000
Biotransformation	0.0016	130.216	47.911	13.520	3.463	0.847	0.200	0.044	0.008	0.001	0.000
Field Data from Site	Monitoring Well Locations (ft)										



See PCE

See TCE

See DCE

Replay

Time:

120.0 Years

Log \longleftrightarrow Linear

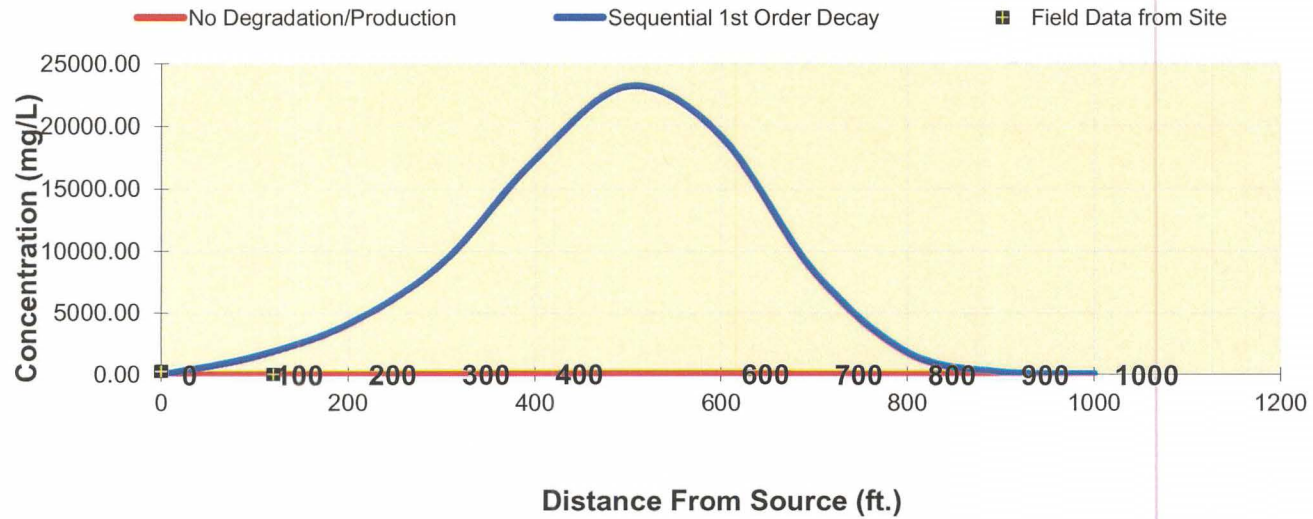
Return to
Input

To All

To Array

NITRATE CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Nitrate	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
No Degradation	3.724	8.116	17.663	37.764	72.463	96.656	79.790	34.570	7.287	0.717	0.032
Biotransformation	3.7240	1454.767	4080.908	9010.103	17356.596	23162.257	19122.130	8285.038	1746.418	171.865	7.715
Monitoring Well Locations (ft)											
Field Data from Site											



See PCE

See TCE

See DCE

Replay

Time:

108.0 Years

Log \longleftrightarrow Linear

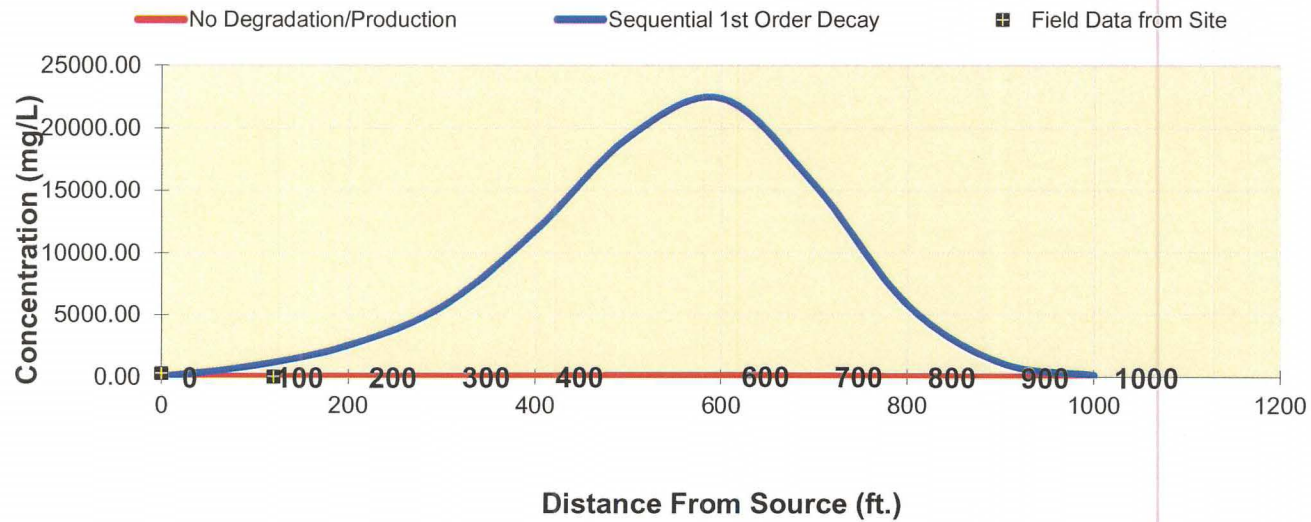
Return to
Input

To All

To Array

NITRATE CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Nitrate	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
No Degradation	2.304	5.022	10.940	23.677	49.267	80.474	93.341	64.502	24.207	4.682	0.453
Biotransformation	2.3044	900.213	2527.631	5649.372	11801.193	19285.048	22369.975	15458.693	5801.426	1122.099	108.601
Field Data from Site	Monitoring Well Locations (ft)										



See PCE

See TCE

See DCE

Replay

Time:

120.0 Years

Log ↔ Linear

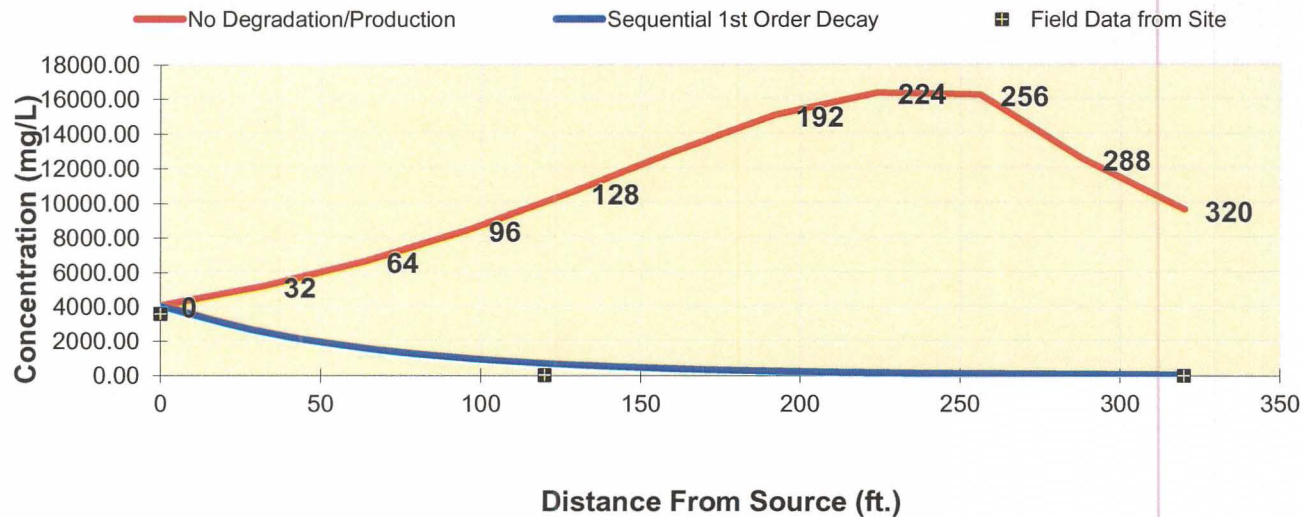
Return to
Input

To All

To Array

AMMONIA CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Ammonia	Distance from Source (ft)										
	0	32	64	96	128	160	192	224	256	288	320
No Degradation	4036.380	5176.958	6628.305	8439.385	10597.125	12938.772	15067.535	16374.485	16258.965	12550.057	9609.353
Biotransformation	4036.3786	2528.695	1584.162	992.413	621.629	389.163	243.159	151.077	92.827	54.159	30.512
Monitoring Well Locations (ft)											
Field Data from Site											

[See PCE](#)[See TCE](#)[See DCE](#)[Replay](#)

Time:

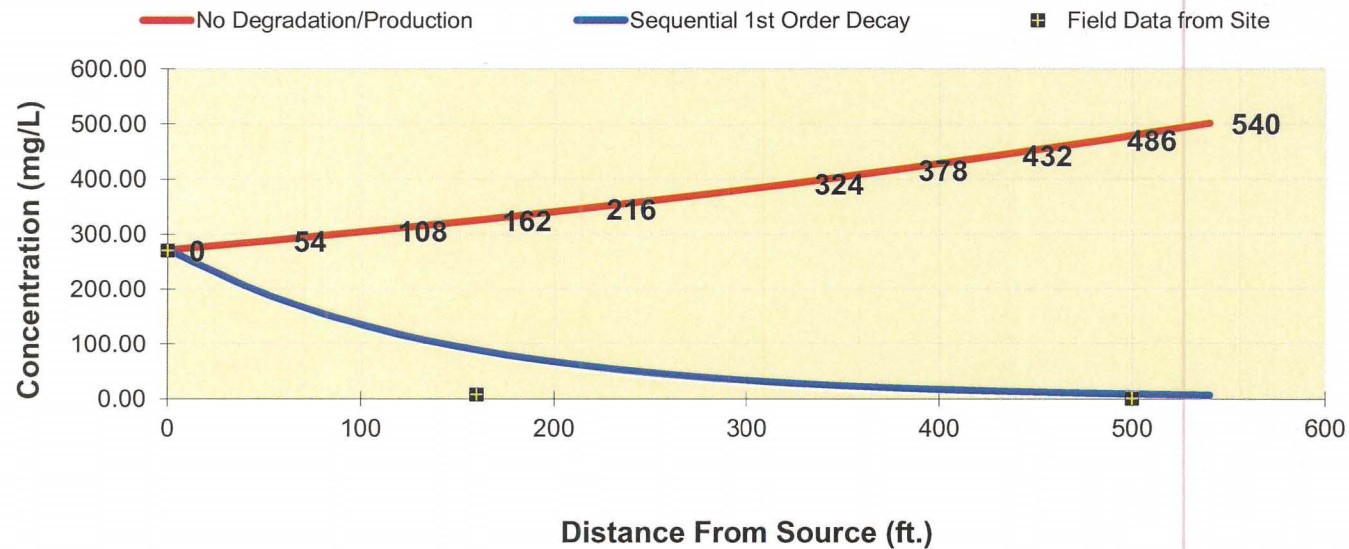
54.0 Years

Log \longleftrightarrow Linear[Return to Input](#)[To All](#)[To Array](#)

AMMONIA CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Ammonia	Distance from Source (ft)										
	0	54	108	162	216	270	324	378	432	486	540
No Degradation	271.257	288.489	306.817	326.309	347.039	369.086	392.534	417.471	443.993	472.198	502.191
Biotransformation	271.2566	186.142	127.735	87.654	60.150	41.276	28.325	19.437	13.338	9.153	6.281

Field Data from Site	Monitoring Well Locations (ft)										
	EW-1	PDMW-10R	PDMW-46								
	270.000	7.900	1.100								

[See PCE](#)[See TCE](#)[See DCE](#)[Prepare Animation](#)

Time:

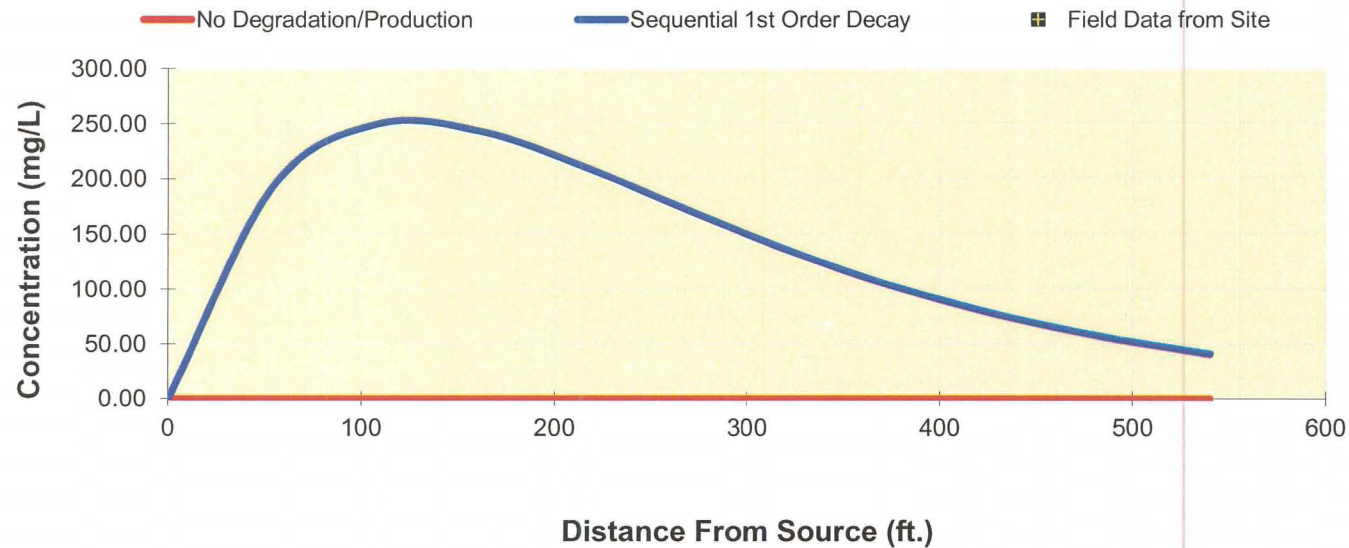
40.0 Years

Log \longleftrightarrow Linear[Return to
Input](#)[To All](#)[To Array](#)

NITRITE CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Nitrite	Distance from Source (ft)										
	0	54	108	162	216	270	324	378	432	486	540
No Degradation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.0001	192.575	249.384	242.502	209.858	170.459	133.074	101.121	75.359	55.346	40.191

Field Data from Site	Monitoring Well Locations (ft)										
	EW-1	PDMW-10R	PDMW-46								
	<0.05	<0.05	<0.05								



See PCE

See TCE

See DCE

Prepare Animation

Time:

40.0 Years

Log \longleftrightarrow LinearReturn to
Input

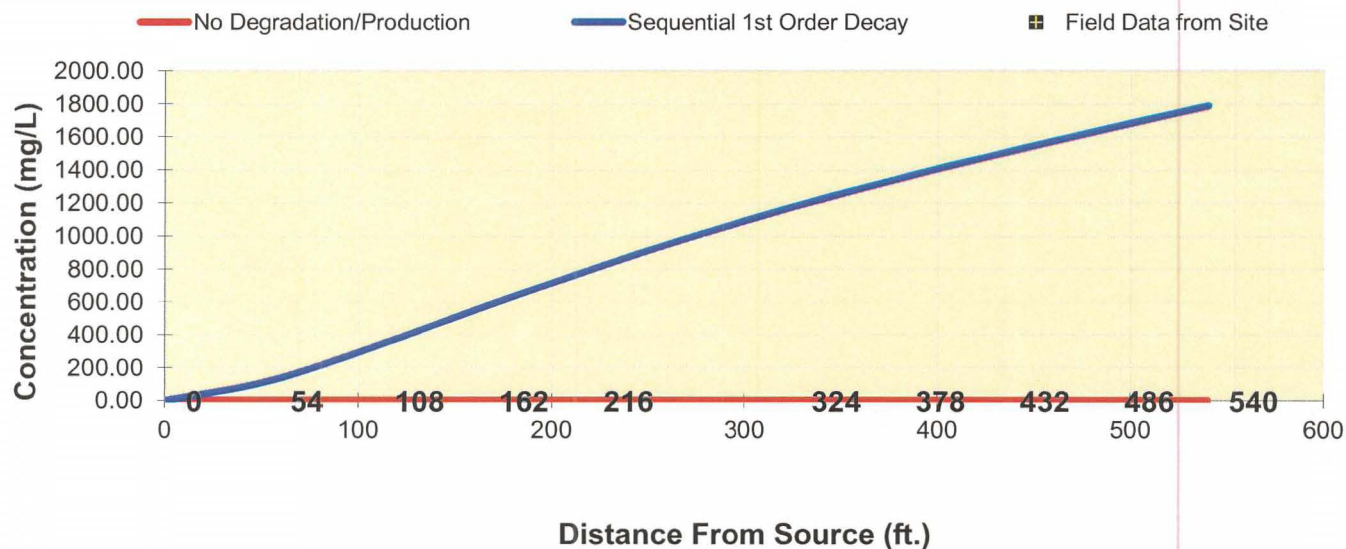
To All

To Array

NITRATE CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Nitrate	Distance from Source (ft)										
	0	54	108	162	216	270	324	378	432	486	540
No Degradation	0.072	0.076	0.081	0.086	0.091	0.097	0.103	0.110	0.117	0.124	0.132
Biotransformation	0.0715	120.064	328.255	558.714	781.858	986.972	1172.580	1341.299	1497.188	1644.463	1786.941

Field Data from Site	Monitoring Well Locations (ft)										
	EW-1	PDMW-10R	PDMW-46								
	<0.05	<0.05	<0.05								



See PCE

See TCE

See DCE

Prepare Animation

Time:

40.0 Years

Log \longleftrightarrow LinearReturn to
Input

To All

To Array

EW-1 - PDMW-46

Maximum Extent of Plume

115 → 1. Enter value directly....or
 ↑ or 2. Calculate by filling in gray
 0.02 cells. Press Enter, then (C)
 (Restore formulas, hit "Restore Formulas" button)
 variable* → Data used directly in model.

Ammonia	<input checked="" type="radio"/>
Ethanes	<input type="radio"/>

Seepage Velocity*	Vs	62.1	(ft/yr)
or			
Hydraulic Conductivity	K	3.0E-03	(cm/sec)
Hydraulic Gradient	i	0.005	(ft/ft)
Effective Porosity	n	0.25	(-)

Alpha x*	10	(ft)	Calc. Alpha x
(Alpha y) / (Alpha x)*	0.1	(-)	
(Alpha z) / (Alpha x)*	1.E-99	(-)	

Retardation Factor* \longrightarrow R

or

Soil Bulk Density, ρ

1.7

 (kg/L)

Fraction Organic Carbon, f_{oc}

1.0E-3

 (-)

Partition Coefficient K_{oc} ↘

Ammonia	14	(L/kg)	1.10	(-)
Nitrite	0	(L/kg)	1.00	(-)
Nitrate	0	(L/kg)	1.00	(-)
		(L/kg)	1.00	(-)
		(L/kg)	1.00	(-)

Common R (used in model)* = 2.00

Zone 1

NH₃ → Nitrite

Nitrite → Nitrate

Zone 2

Nitrate → Nitrite

Nitrite → NH₃

Compound	half-life (yrs)	Yield (kg/ha)	Zone
NH ₃	1.30	2.75	Zone 1
Nitrite	1.00	1.35	Zone 1
Nitrate	0.000	0.000	Zone 2
Nitrate	0.000	0.000	Zone 2
Nitrate	0.000	0.000	Zone 2
Nitrate	0.000	0.000	Zone 2

Simulation Time*
Modeled Area Width*
Modeled Area Length*
Zone 1 Length*
Zone 2 Length*

60	(yr)
300	(ft)
1200	(ft)
1200	(ft)
	(ft)

Zone 2 =
| - Zone 1

TYPE: Decaying
Single Planar

Source Thickness in Sat. Zone* (ft)

Width* (ft)

Conc. (mg/L)*	C1
Ammonia	1100.0
Nitrite	
Nitrate	.29

Ammonia Conc. (mg/L)	270.0	7.9	1.1							
Nitrite Conc. (mg/L)	<0.05	<0.05	<0.05							
Nitrate Conc. (mg/L)	<0.05	<0.05	<0.05							

Date	Data Collected	2015	2013
------	----------------	------	------

RUN CENTERLINE

RUN ARRAY

Help

Restore

RESET

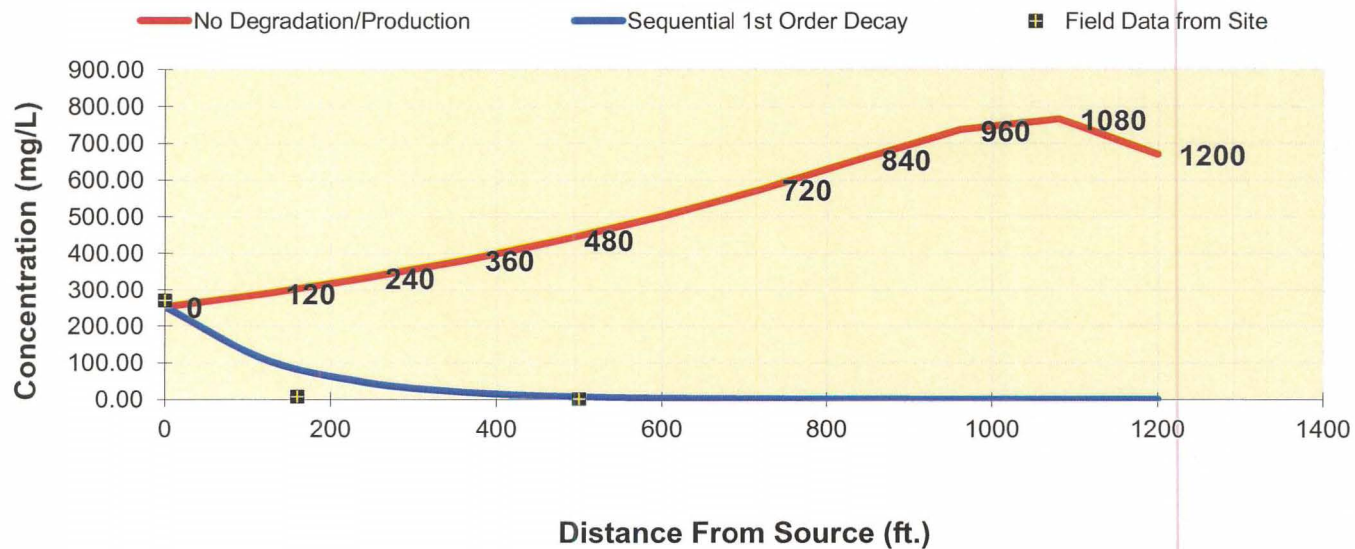
SEE OUTPUT

Paste

AMMONIA CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Ammonia	Distance from Source (ft)										
	0	120	240	360	480	600	720	840	960	1080	1200
No Degradation	252.918	290.017	332.557	381.338	437.273	501.399	574.745	656.759	735.939	766.343	670.939
Biotransformation	252.9180	109.538	47.441	20.547	8.899	3.854	1.669	0.723	0.313	0.135	0.056

Field Data from Site	Monitoring Well Locations (ft)										
	EW-1	PDMW-10R	PDMW-46								
	270.000	7.900	1.100								

[See PCE](#)[See TCE](#)[See DCE](#)[Replay](#)

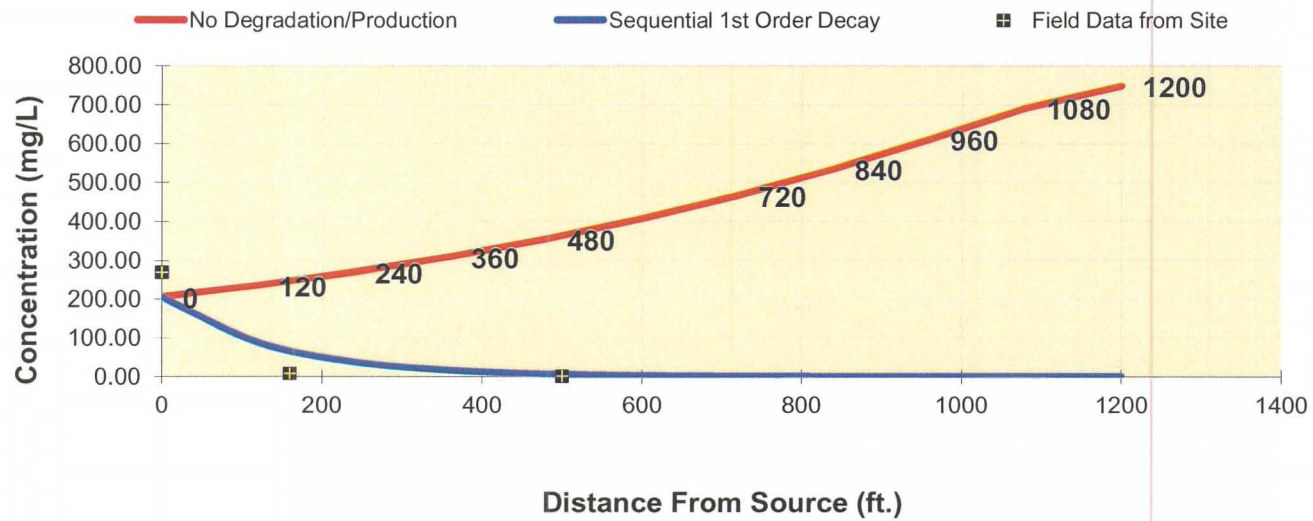
Time:

42.0 Years

Log \longleftrightarrow Linear[Return to
Input](#)[To All](#)[To Array](#)

AMMONIA CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Ammonia	Distance from Source (ft)										
	0	120	240	360	480	600	720	840	960	1080	1200
No Degradation	205.011	235.083	269.566	309.106	354.446	406.432	466.015	534.187	611.183	691.490	748.433
Biotransformation	205.0114	88.790	38.455	16.655	7.213	3.124	1.353	0.586	0.254	0.110	0.047
Monitoring Well Locations (ft)											
Field Data from Site											



See PCE

See TCE

See DCE

Replay

Time:

48.0 Years

Log ↔ Linear

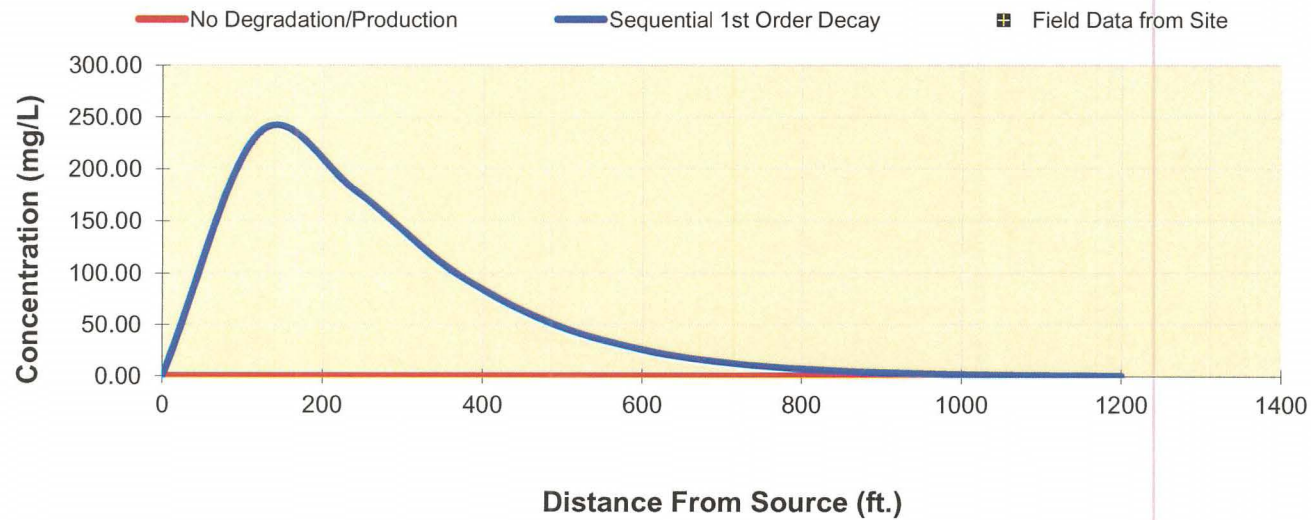
Return to
Input

To All

To Array

NITRITE CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Nitrite	Distance from Source (ft)										
	0	120	240	360	480	600	720	840	960	1080	1200
No Degradation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.0001	234.611	179.478	103.577	53.437	25.990	12.200	5.596	2.525	1.121	0.480
Monitoring Well Locations (ft)											
Field Data from Site											

[See PCE](#)[See TCE](#)[See DCE](#)[Replay](#)

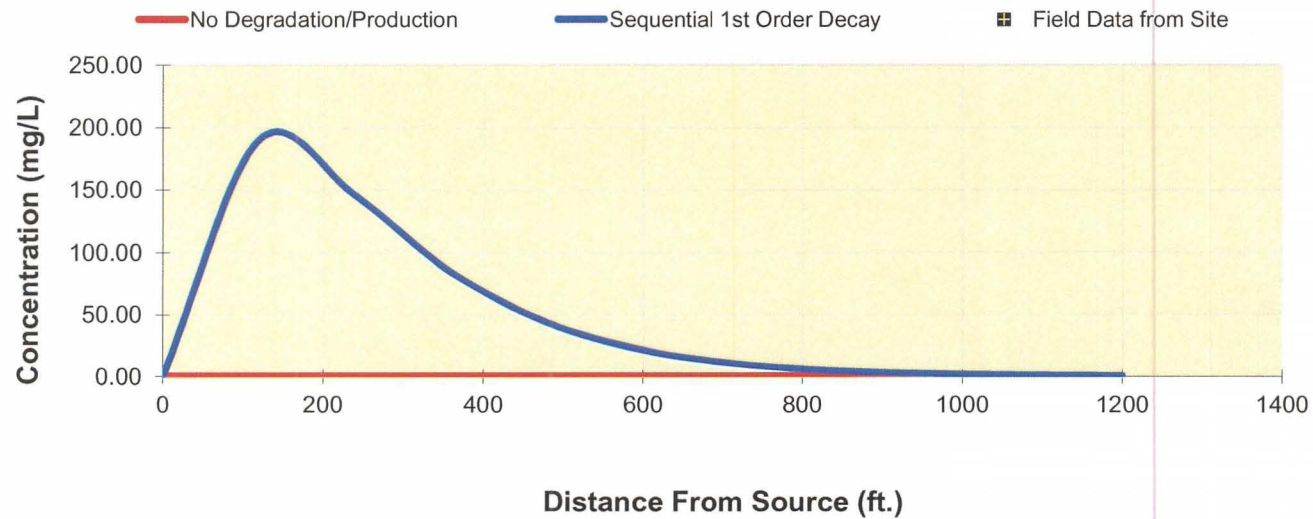
Time:

42.0 Years

Log \longleftrightarrow Linear[Return to
Input](#)[To All](#)[To Array](#)

NITRITE CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Nitrite	Distance from Source (ft)										
	0	120	240	360	480	600	720	840	960	1080	1200
No Degradation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.0000	190.172	145.482	83.958	43.315	21.067	9.890	4.537	2.048	0.914	0.404
Monitoring Well Locations (ft)											
Field Data from Site											

[See PCE](#)[See TCE](#)[See DCE](#)[Replay](#)

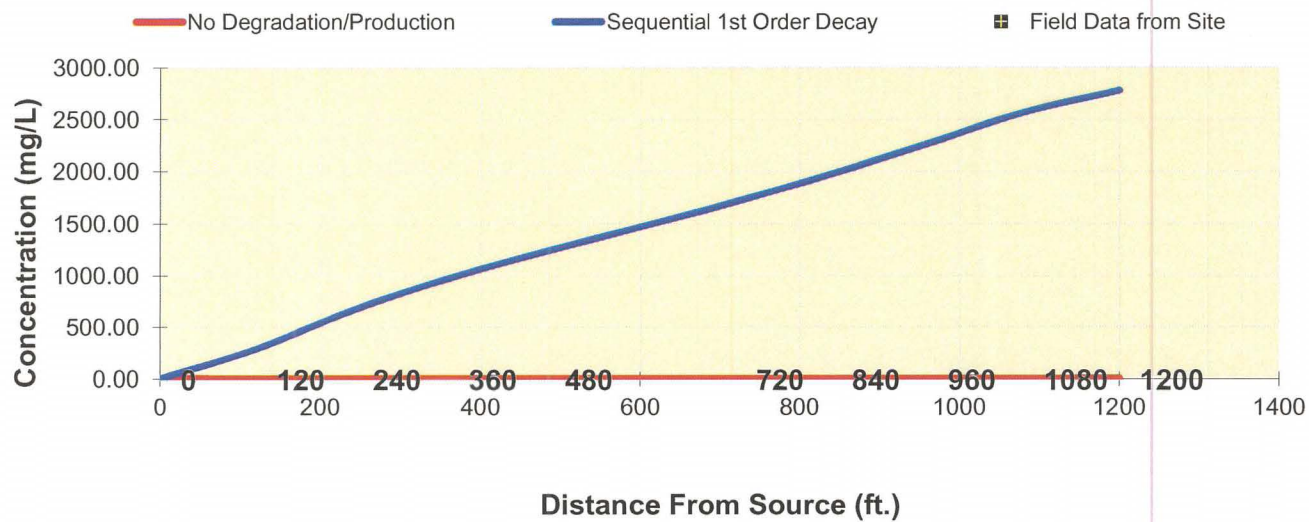
Time:

48.0 Years

Log \longleftrightarrow Linear[Return to
Input](#)[To All](#)[To Array](#)

NITRATE CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Nitrate	Distance from Source (ft)										
	0	120	240	360	480	600	720	840	960	1080	1200
No Degradation	0.054	0.062	0.071	0.081	0.093	0.107	0.123	0.141	0.161	0.182	0.197
Biotransformation	0.0541	286.442	661.669	972.465	1230.721	1468.947	1711.829	1975.010	2265.470	2565.696	2778.034
Monitoring Well Locations (ft)											
Field Data from Site											



See PCE

See TCE

See DCE

Replay

Time:

48.0 Years

Log ↔ Linear

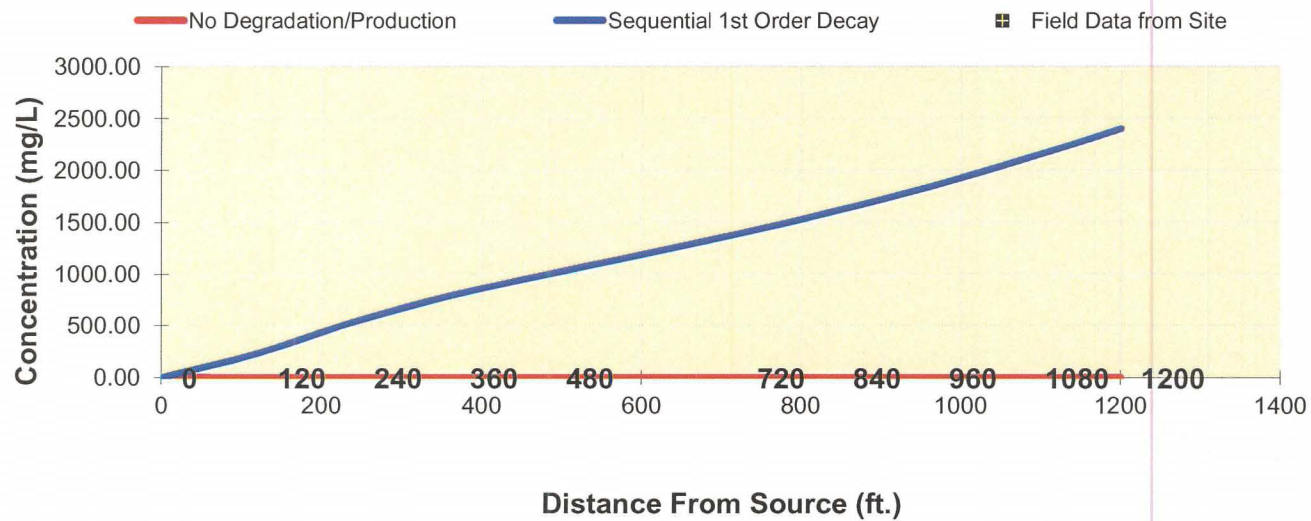
Return to
Input

To All

To Array

NITRATE CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Nitrate	Distance from Source (ft)										
	0	120	240	360	480	600	720	840	960	1080	1200
No Degradation	0.044	0.050	0.058	0.066	0.076	0.087	0.100	0.114	0.131	0.150	0.170
Biotransformation	0.0438	232.185	536.338	788.265	997.603	1190.706	1387.596	1601.190	1839.907	2108.356	2398.757
Monitoring Well Locations (ft)											
Field Data from Site											



See PCE

See TCE

See DCE

Replay

Time:

54.0 Years

Log ↔ Linear

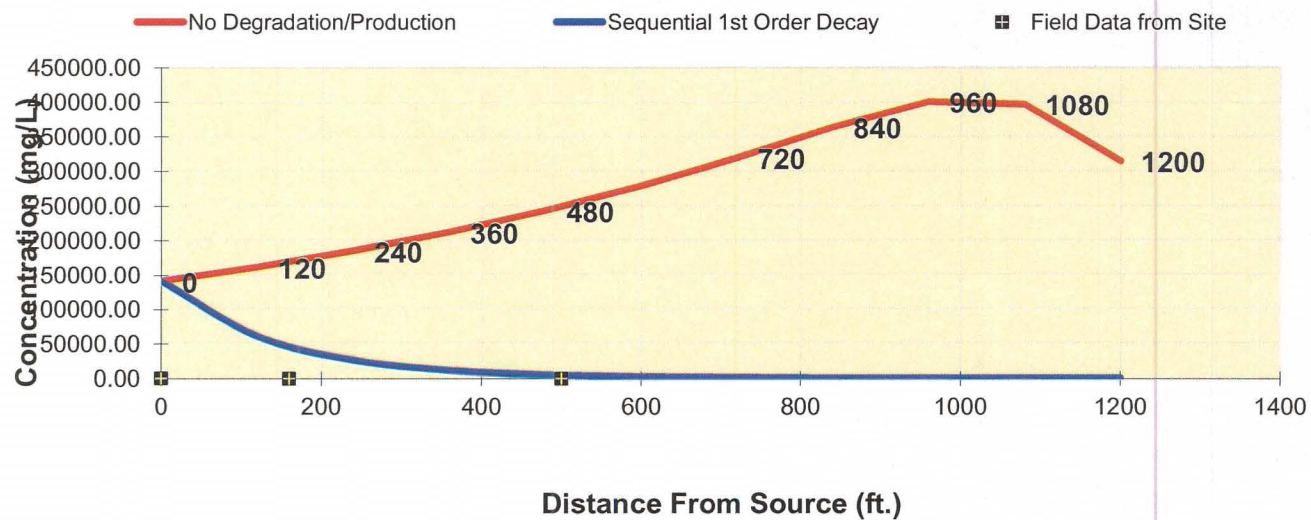
Return to
Input

To All

To Array

AMMONIA CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Ammonia	Distance from Source (ft)										
	0	120	240	360	480	600	720	840	960	1080	1200
No Degradation	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####
Biotransformation	#####	60869.878	26362.664	11417.635	4944.956	2141.625	927.474	401.581	173.626	74.271	30.240
Monitoring Well Locations (ft)											
Field Data from Site											



See PCE

See TCE

See DCE

Replay

Time:

40.5 Years

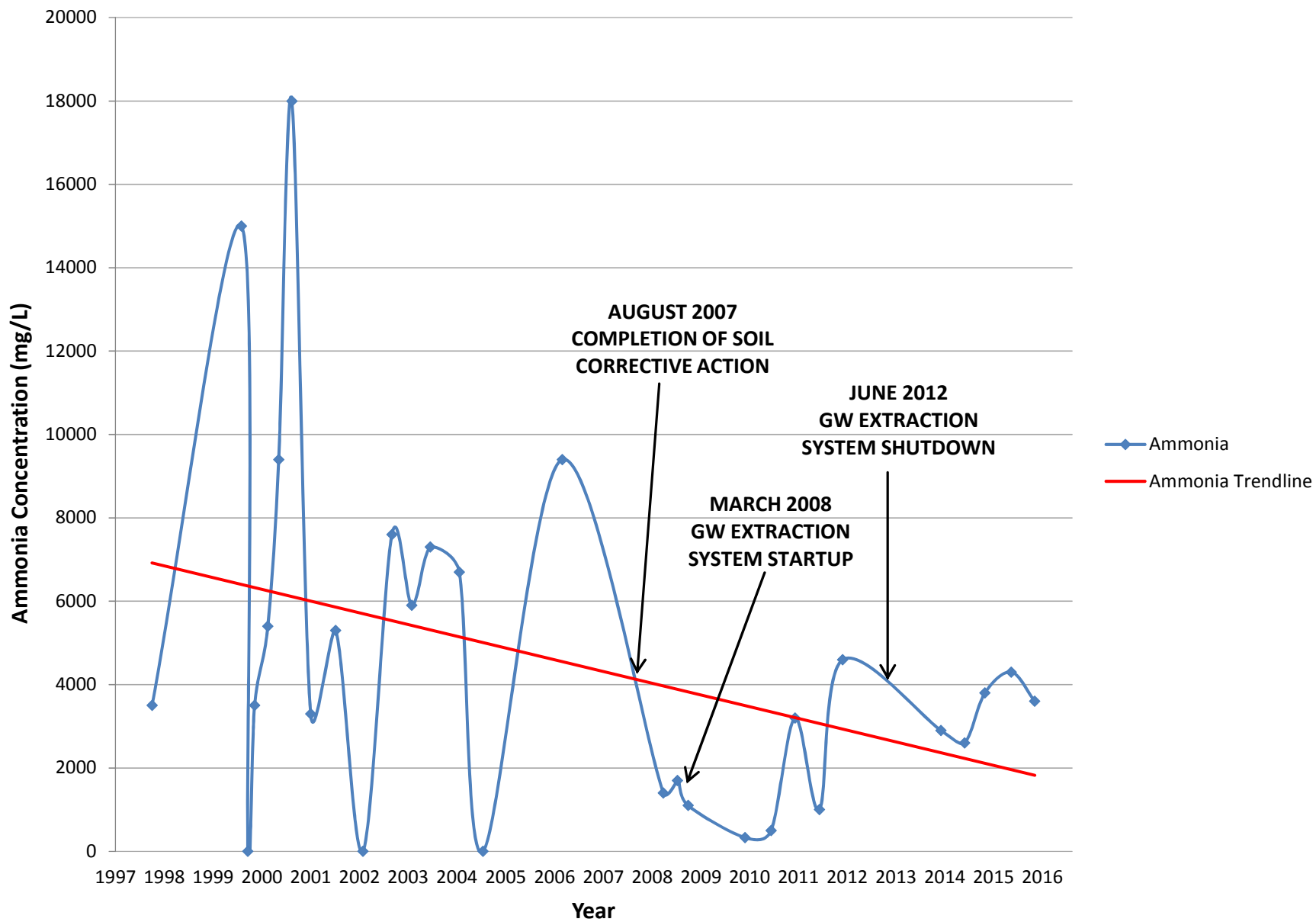
Log \longleftrightarrow LinearReturn to
Input

To All

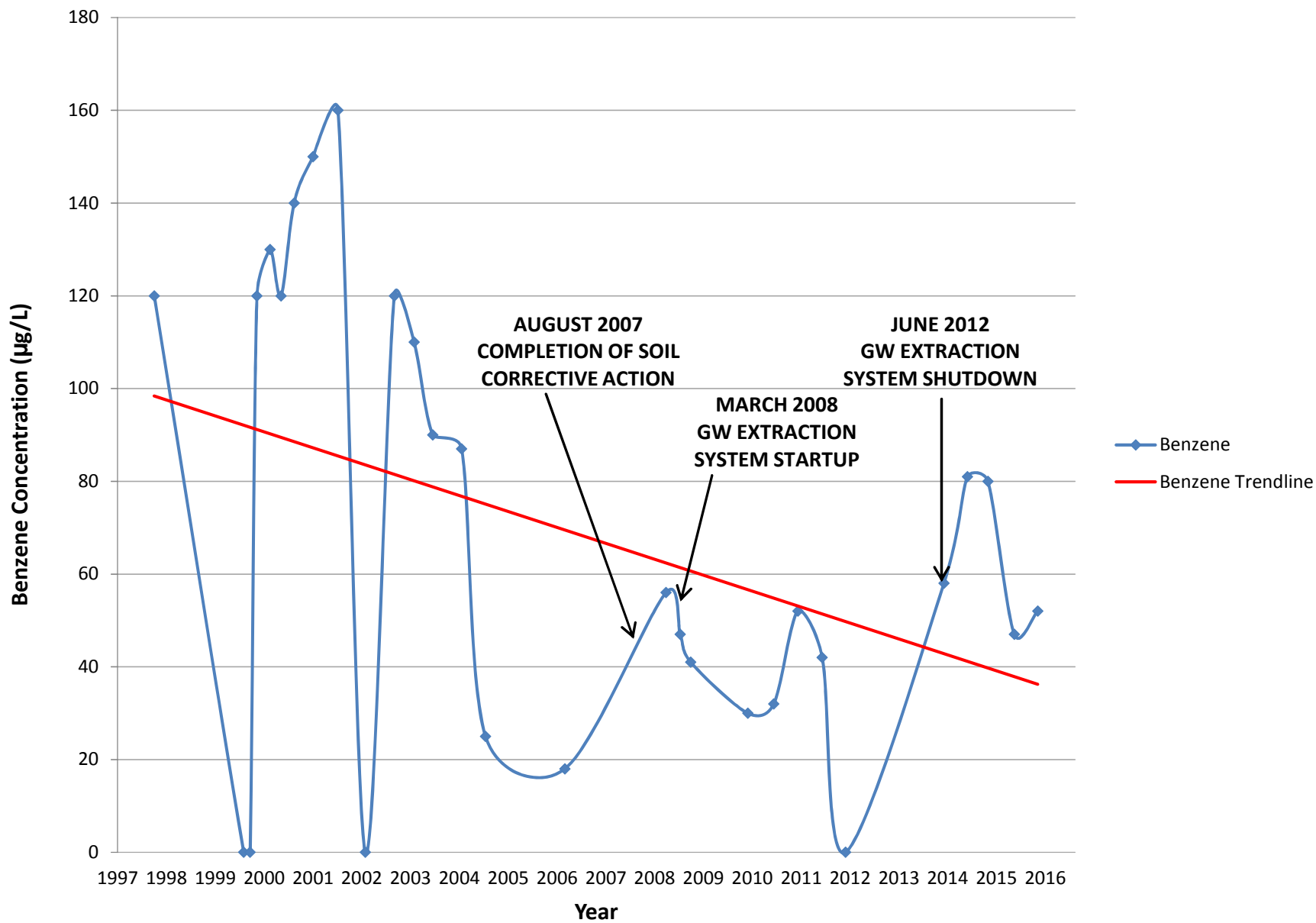
To Array

APPENDIX D
CONTAMINANT TREND GRAPHS

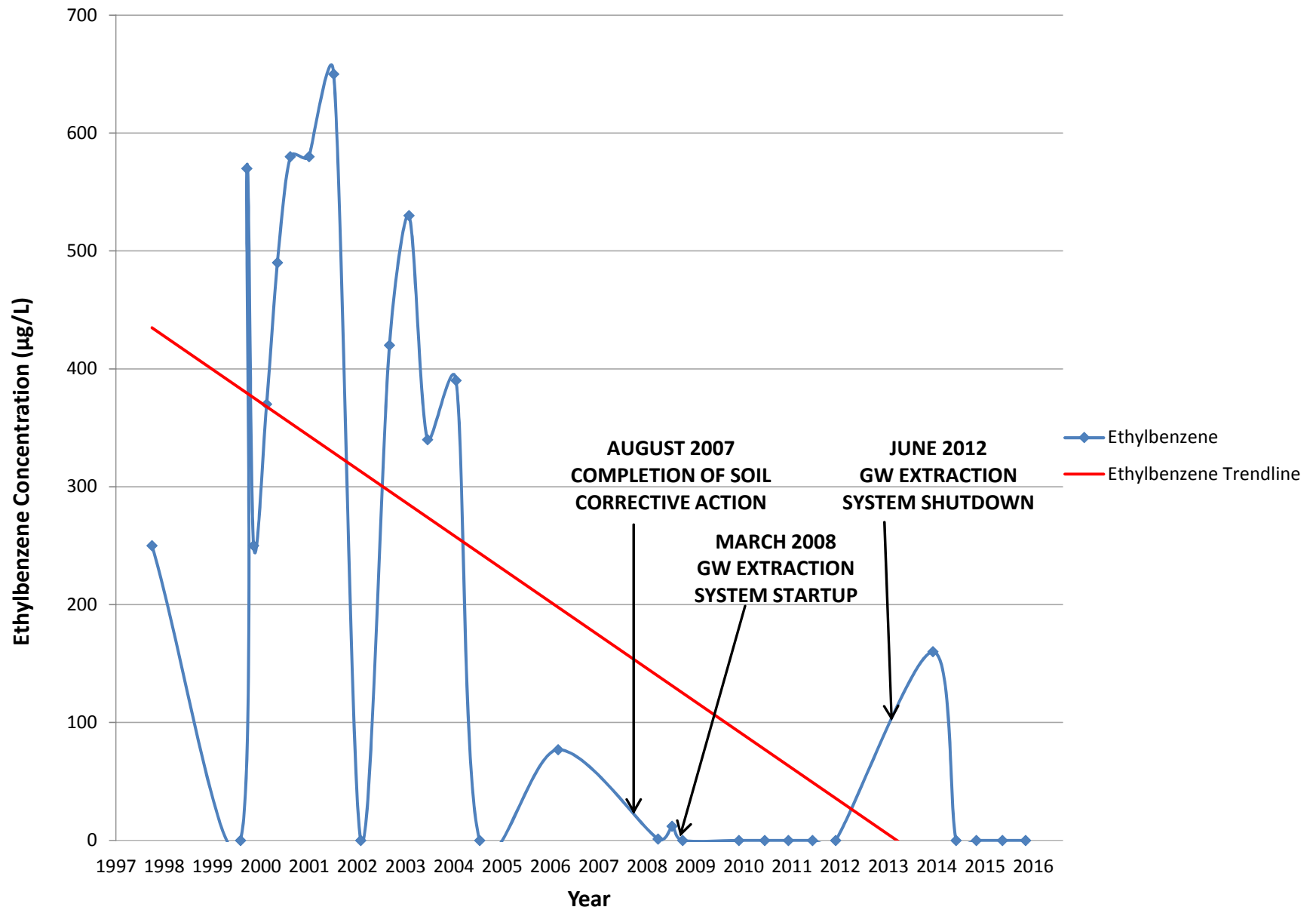
TMW-1 Ammonia



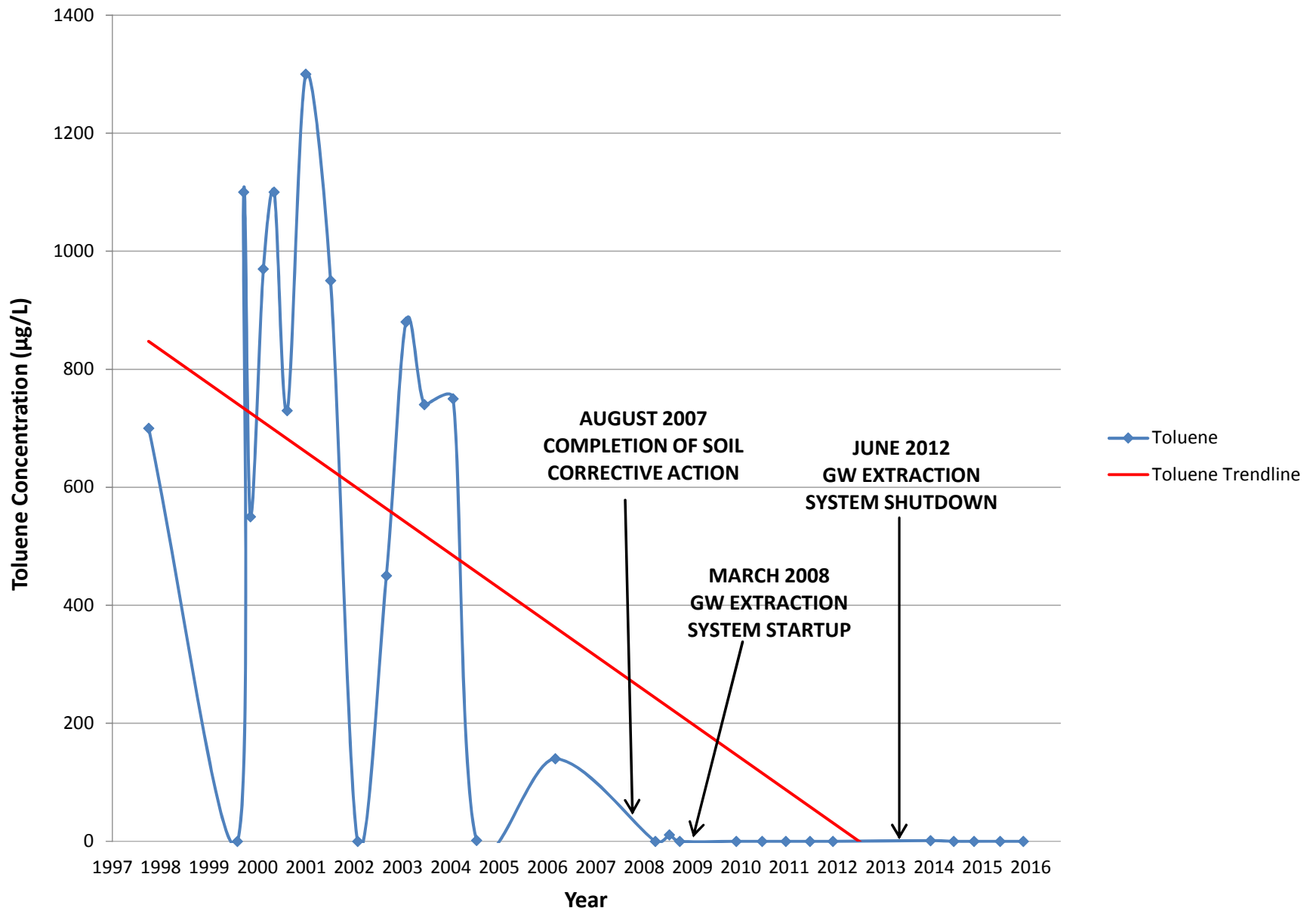
TMW-1 Benzene



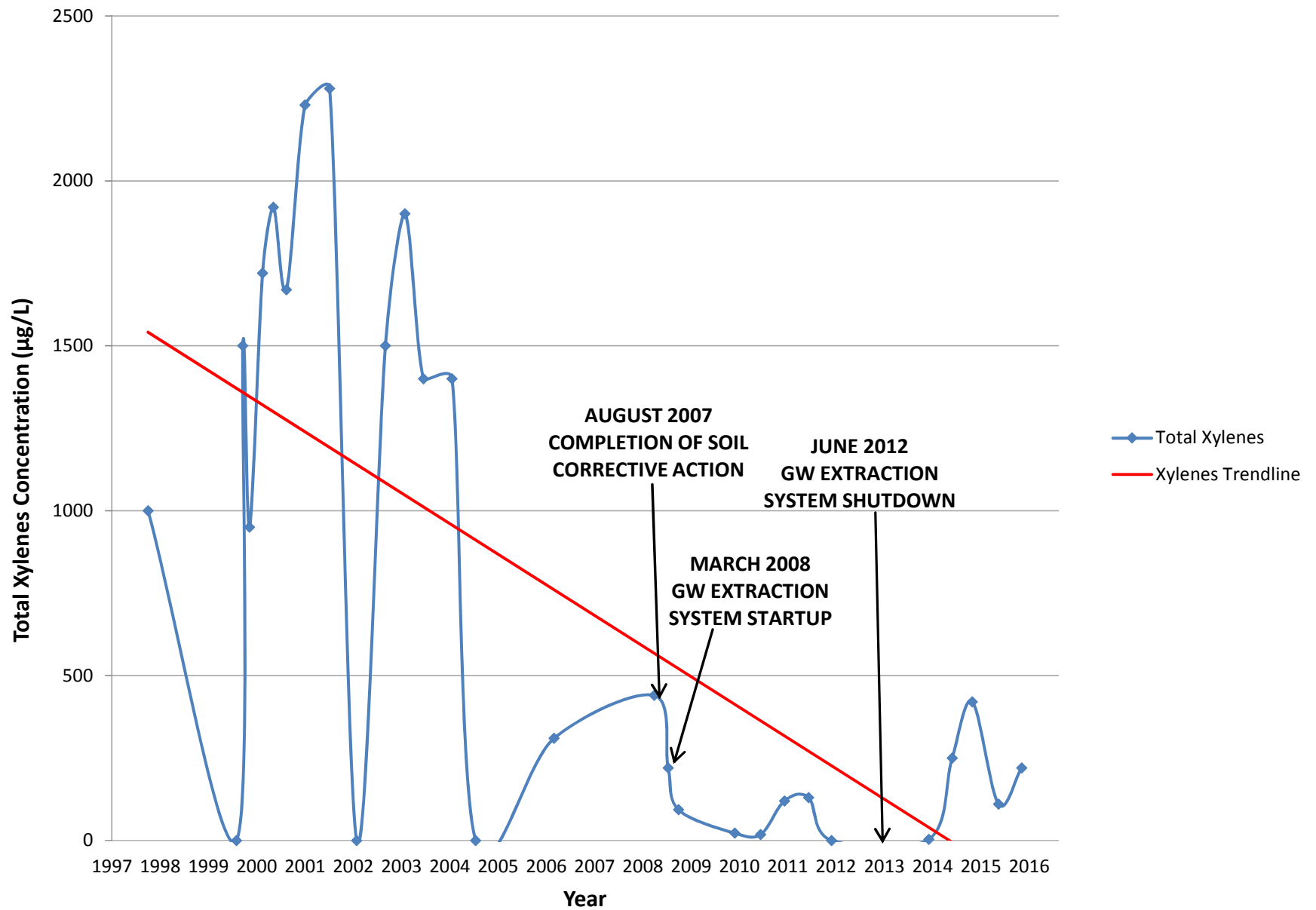
TMW-1 Ethylbenzene



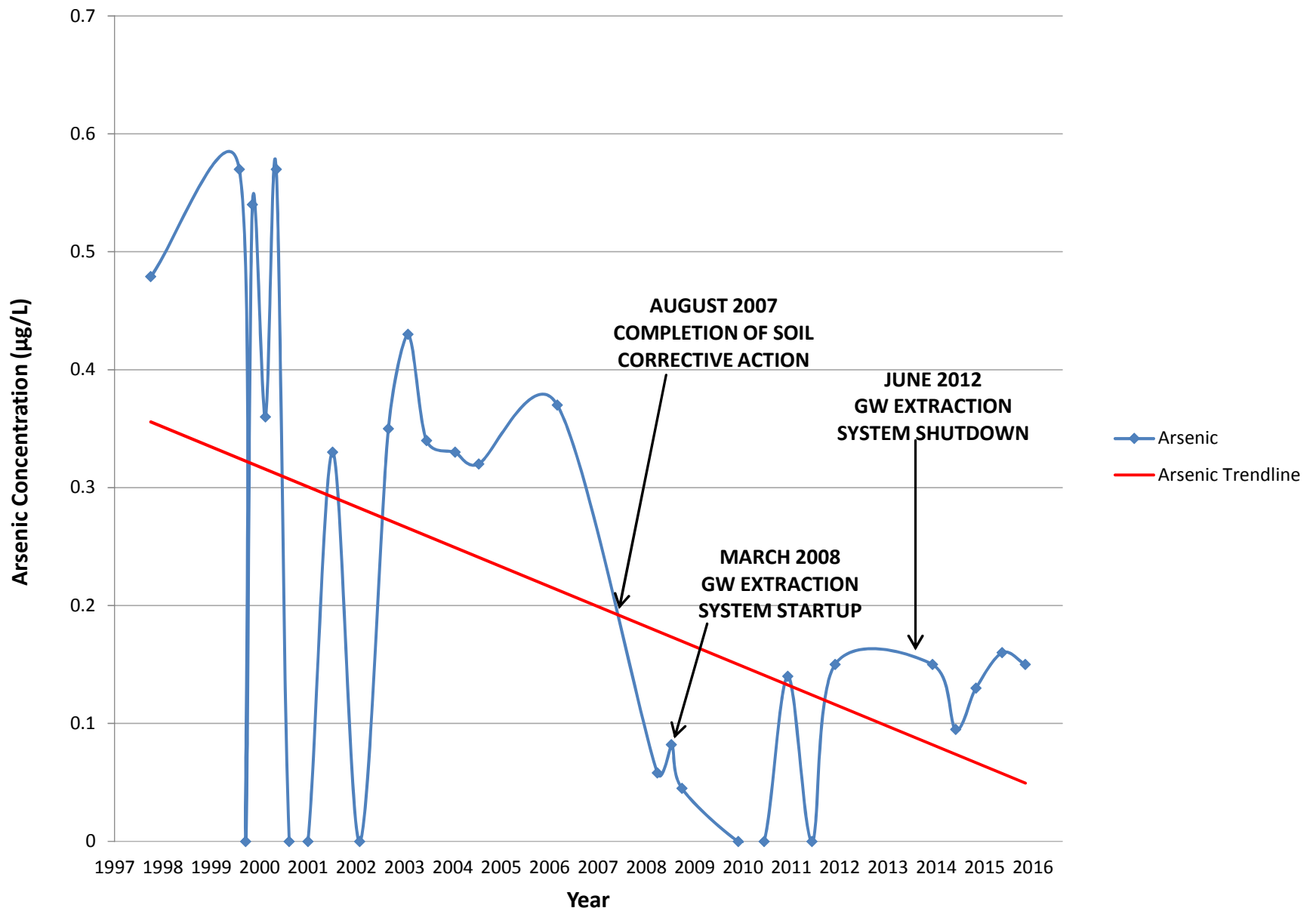
TMW-1 Toluene



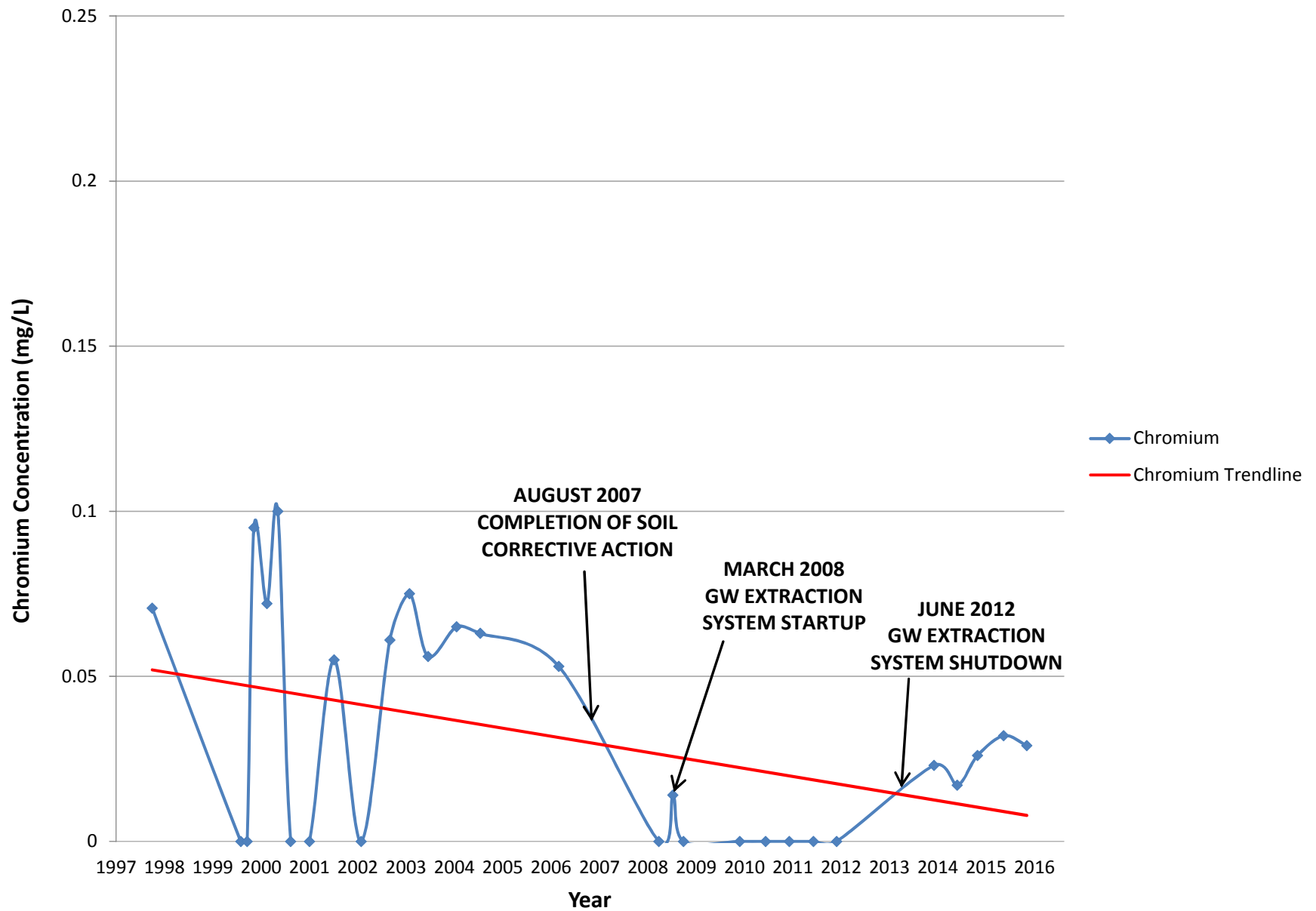
TMW-1 Total Xylenes



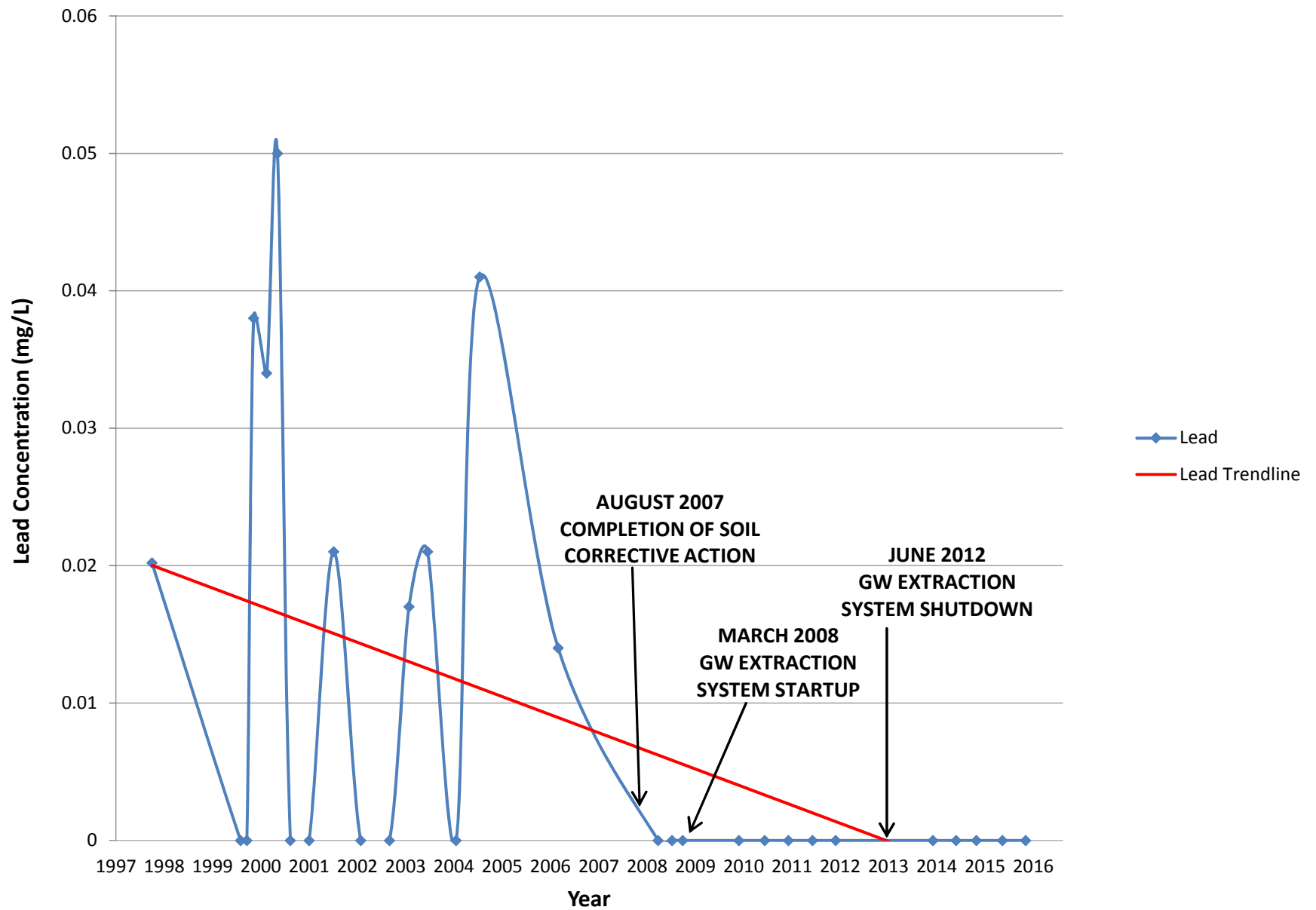
TMW-1 Arsenic



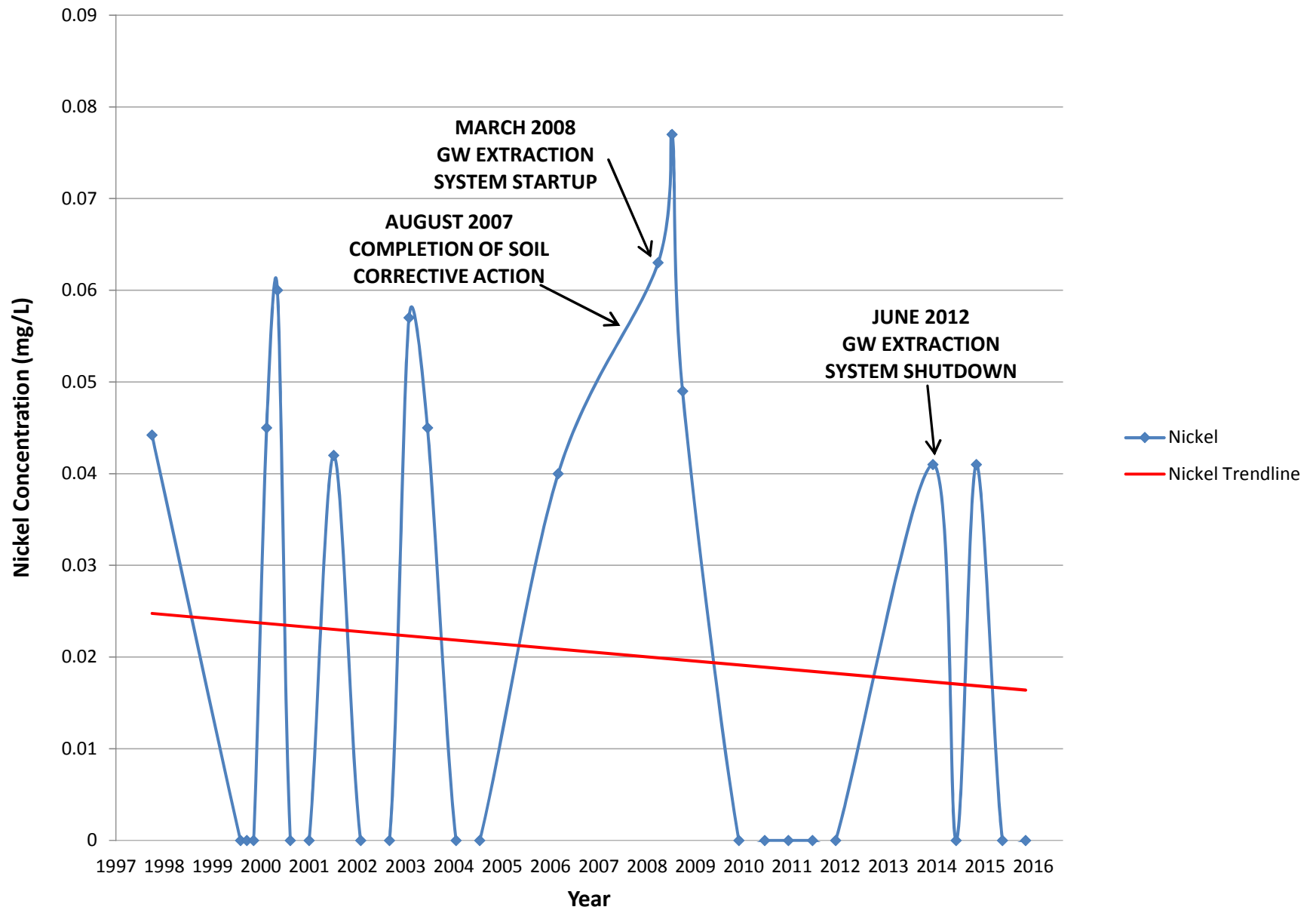
TMW-1 Chromium



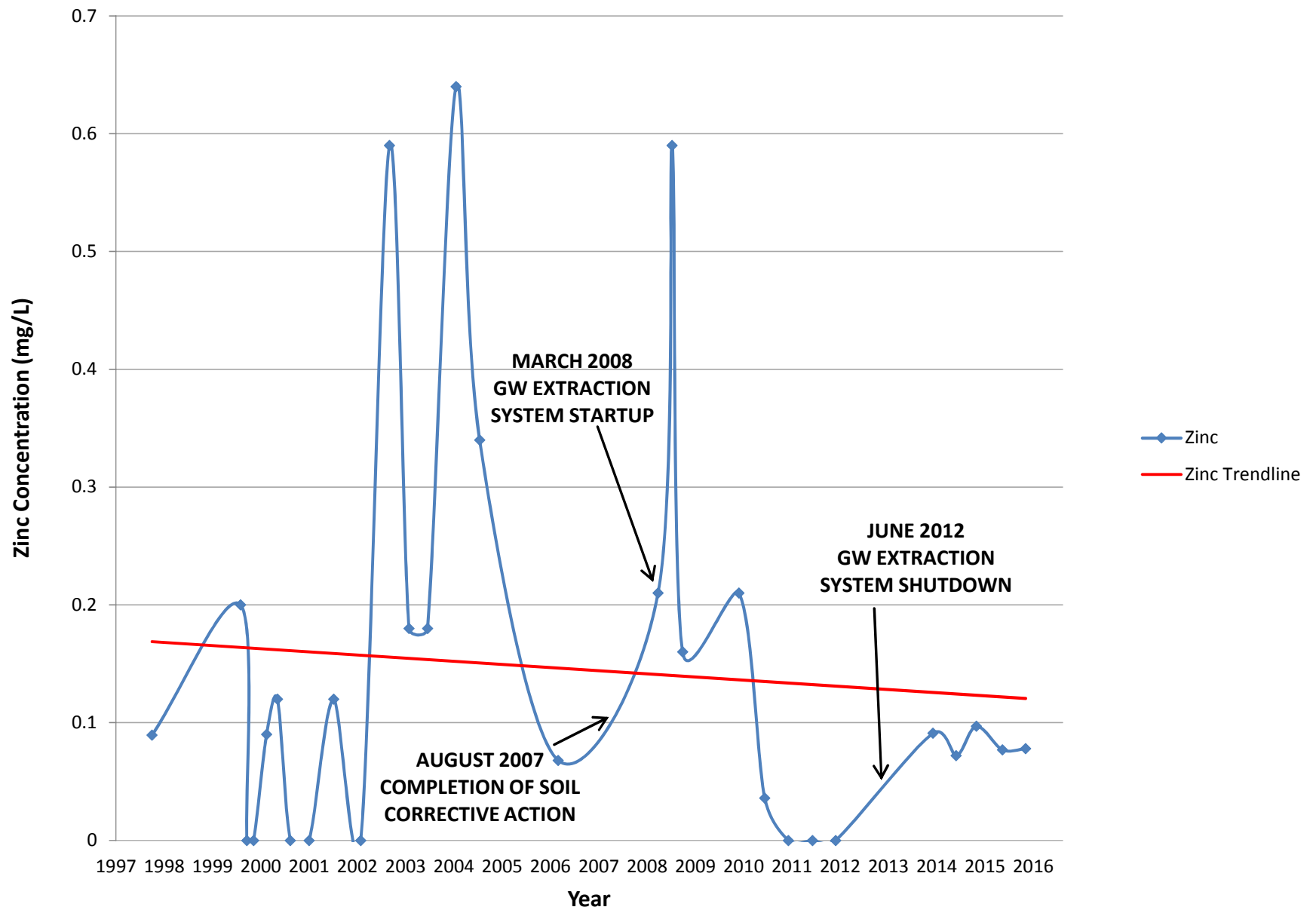
TMW-1 Lead



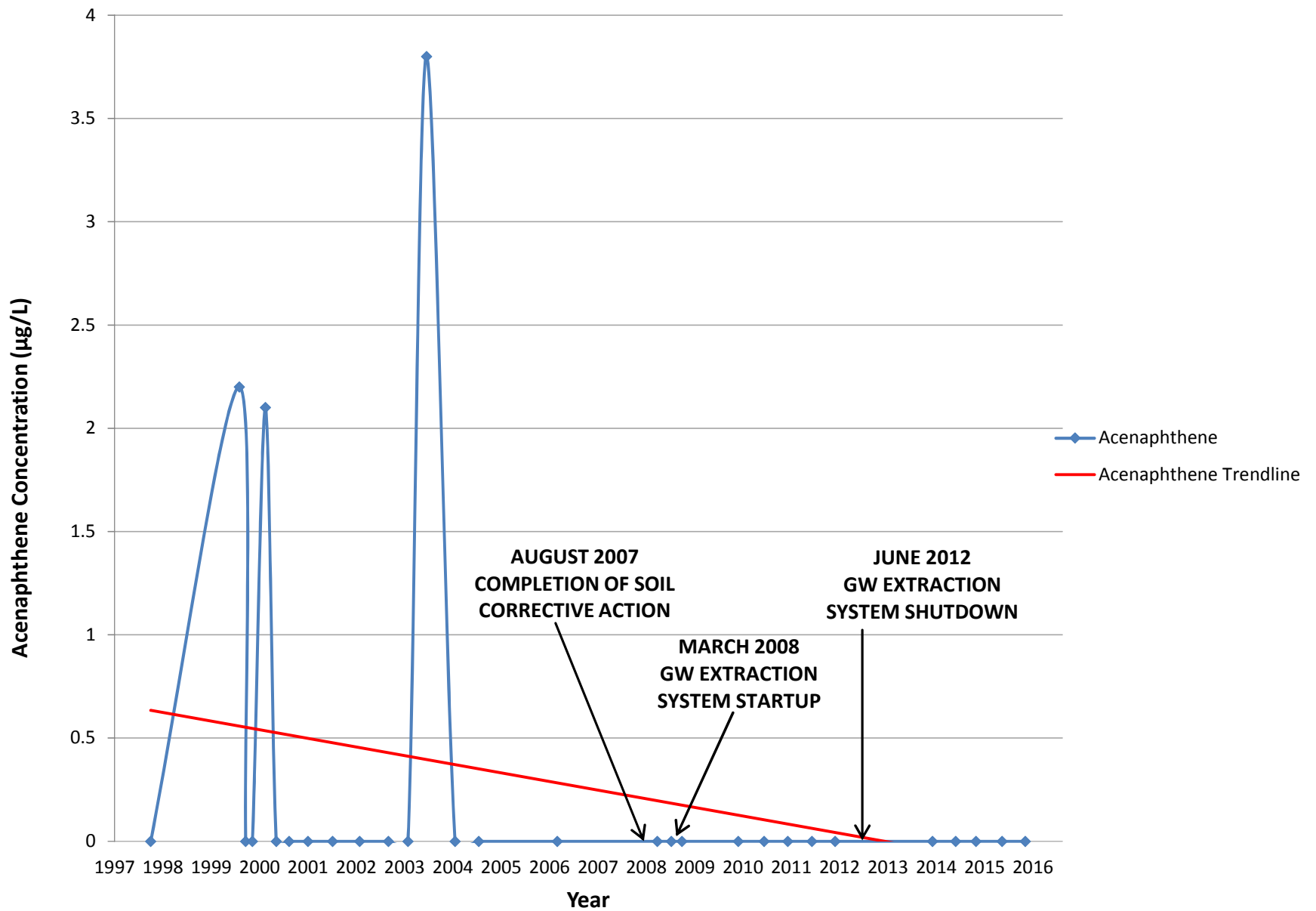
TMW-1 Nickel



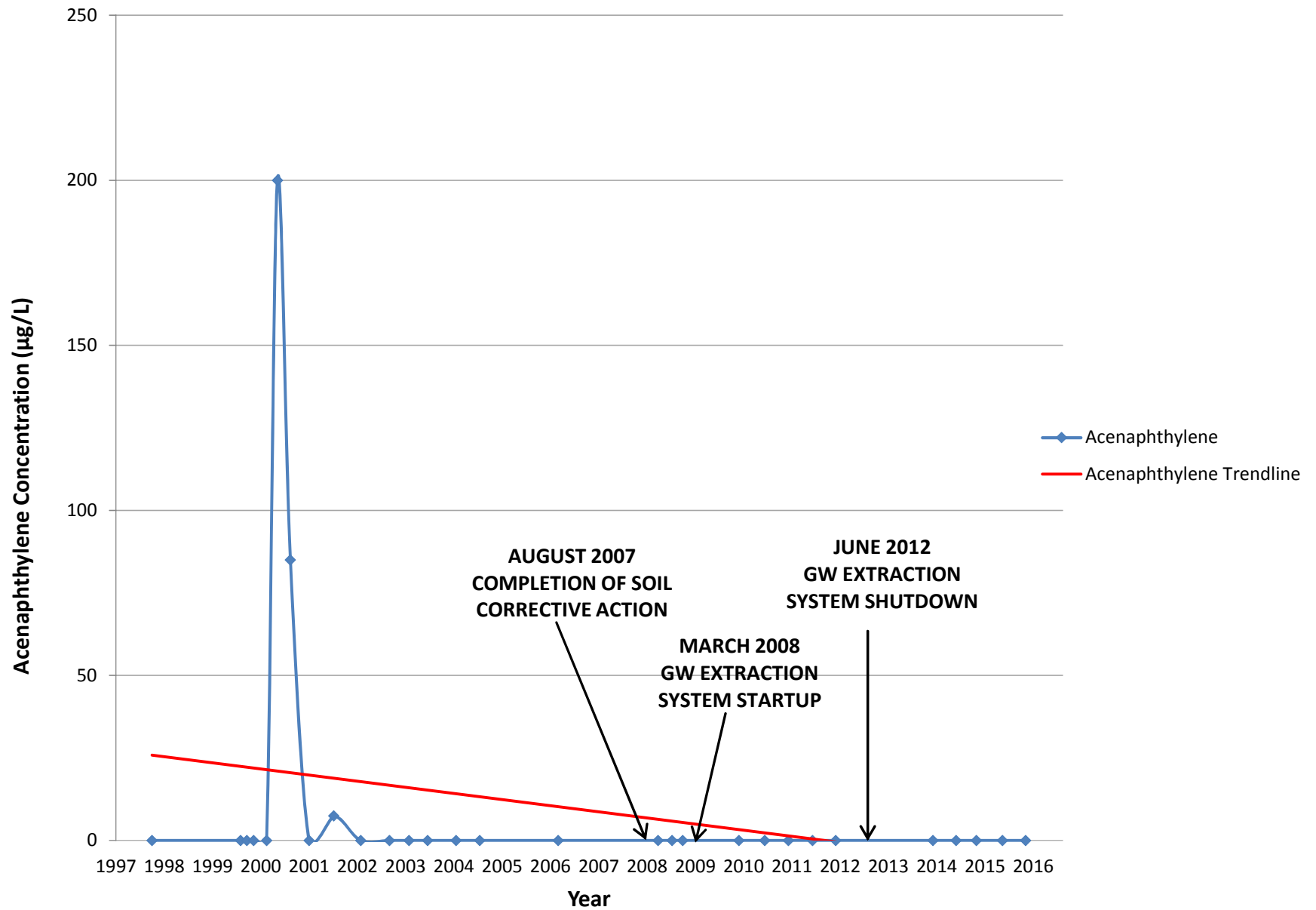
TMW-1 Zinc



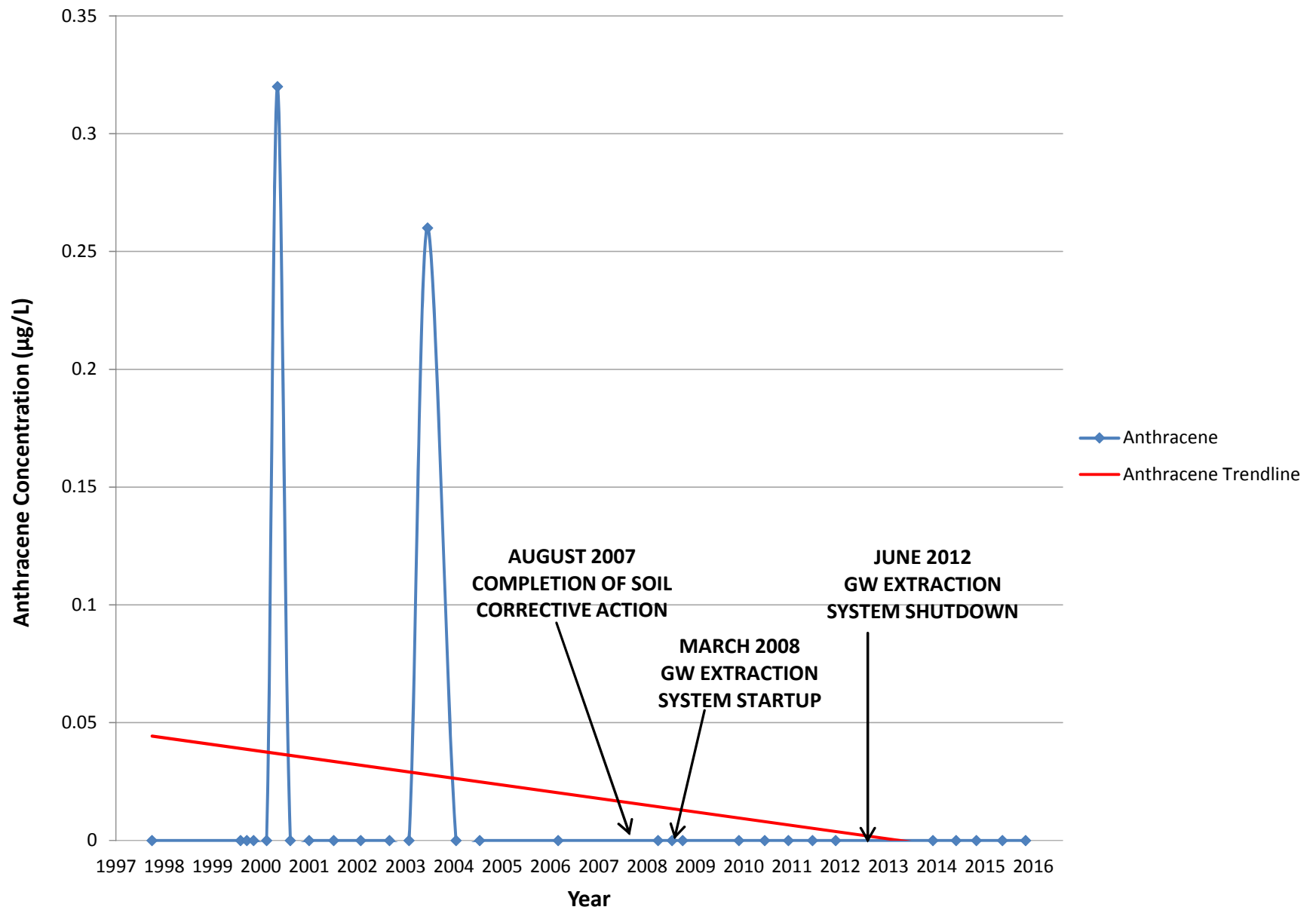
TMW-1 Acenaphthene



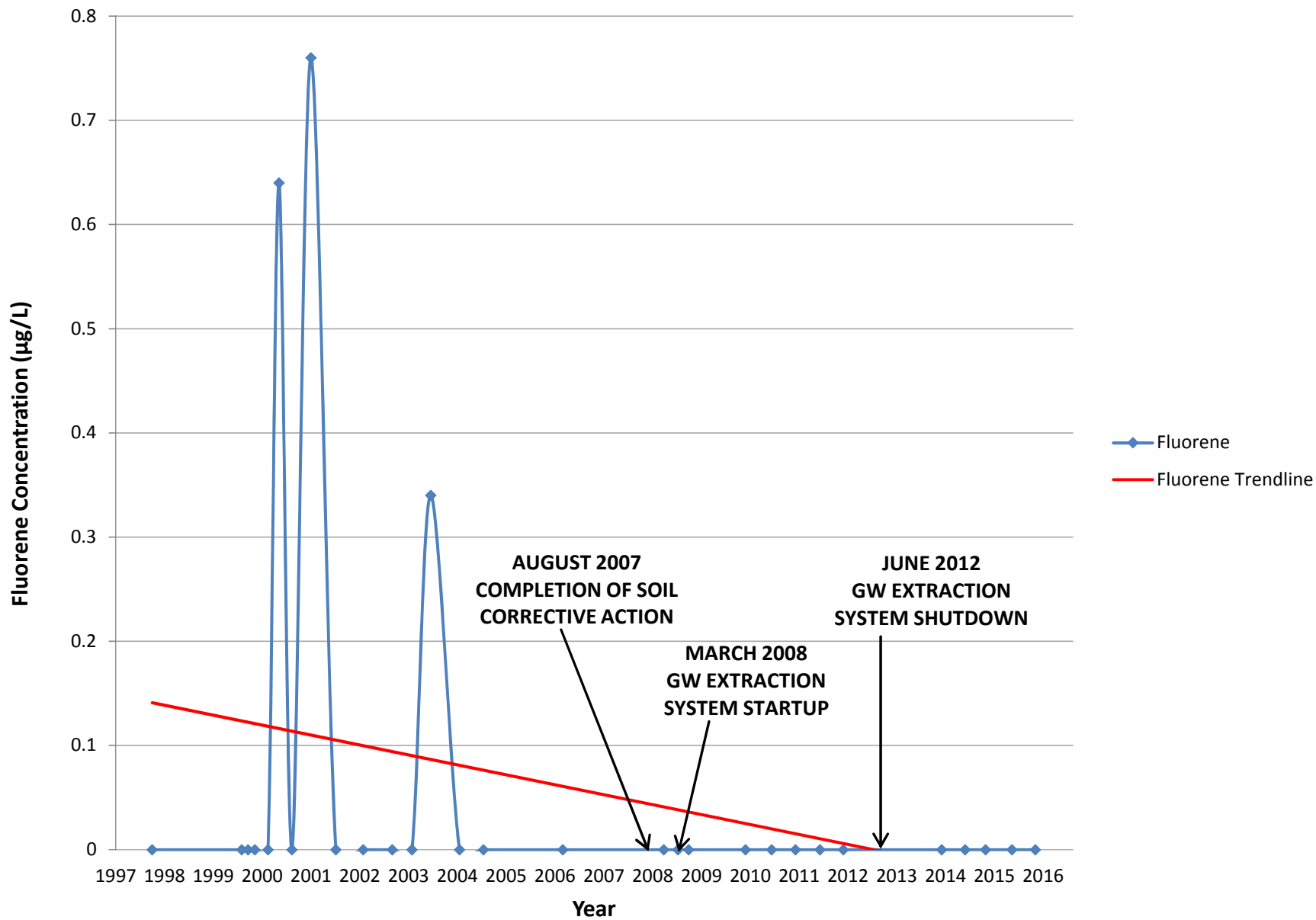
TMW-1 Acenaphthylene



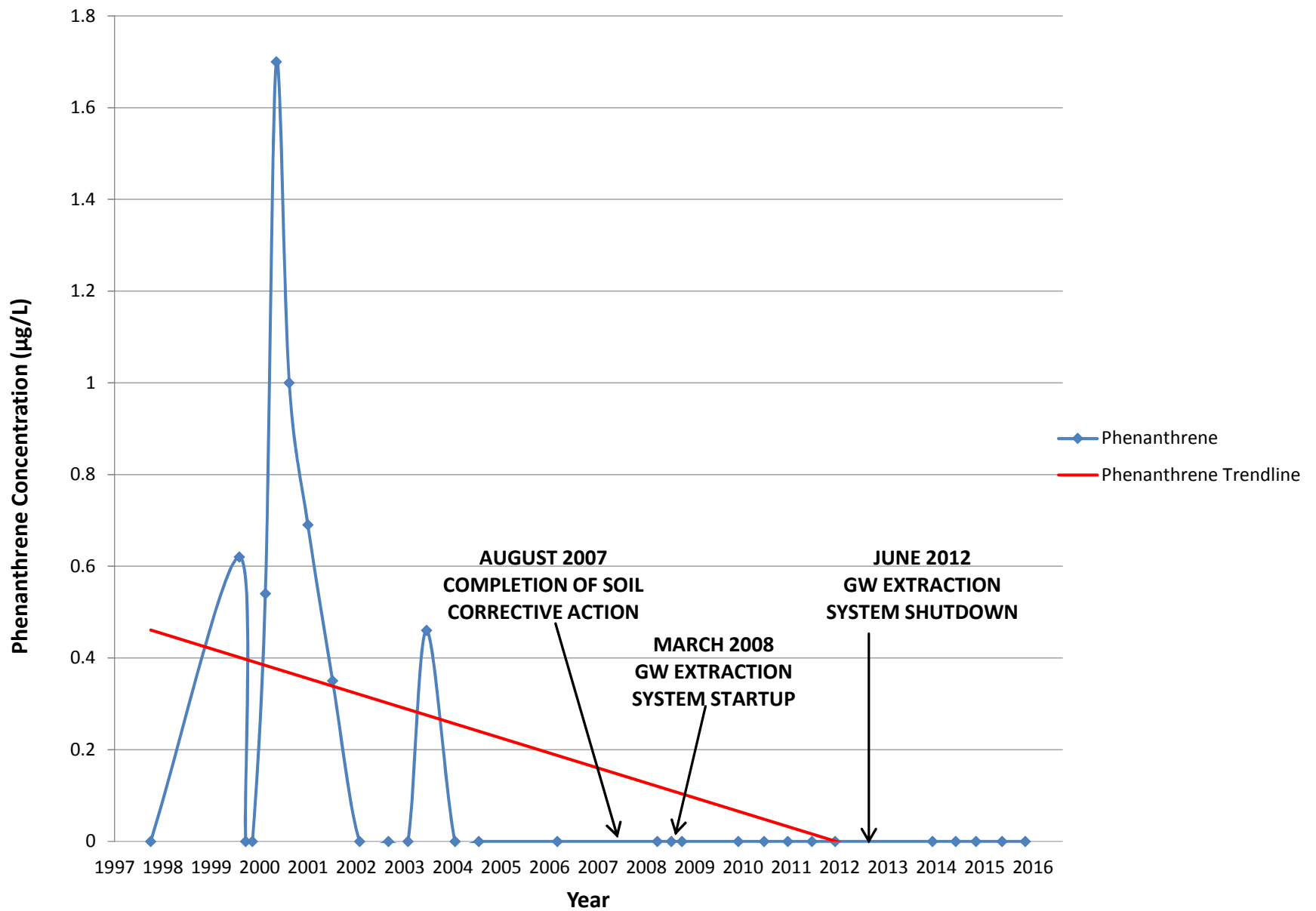
TMW-1 Anthracene



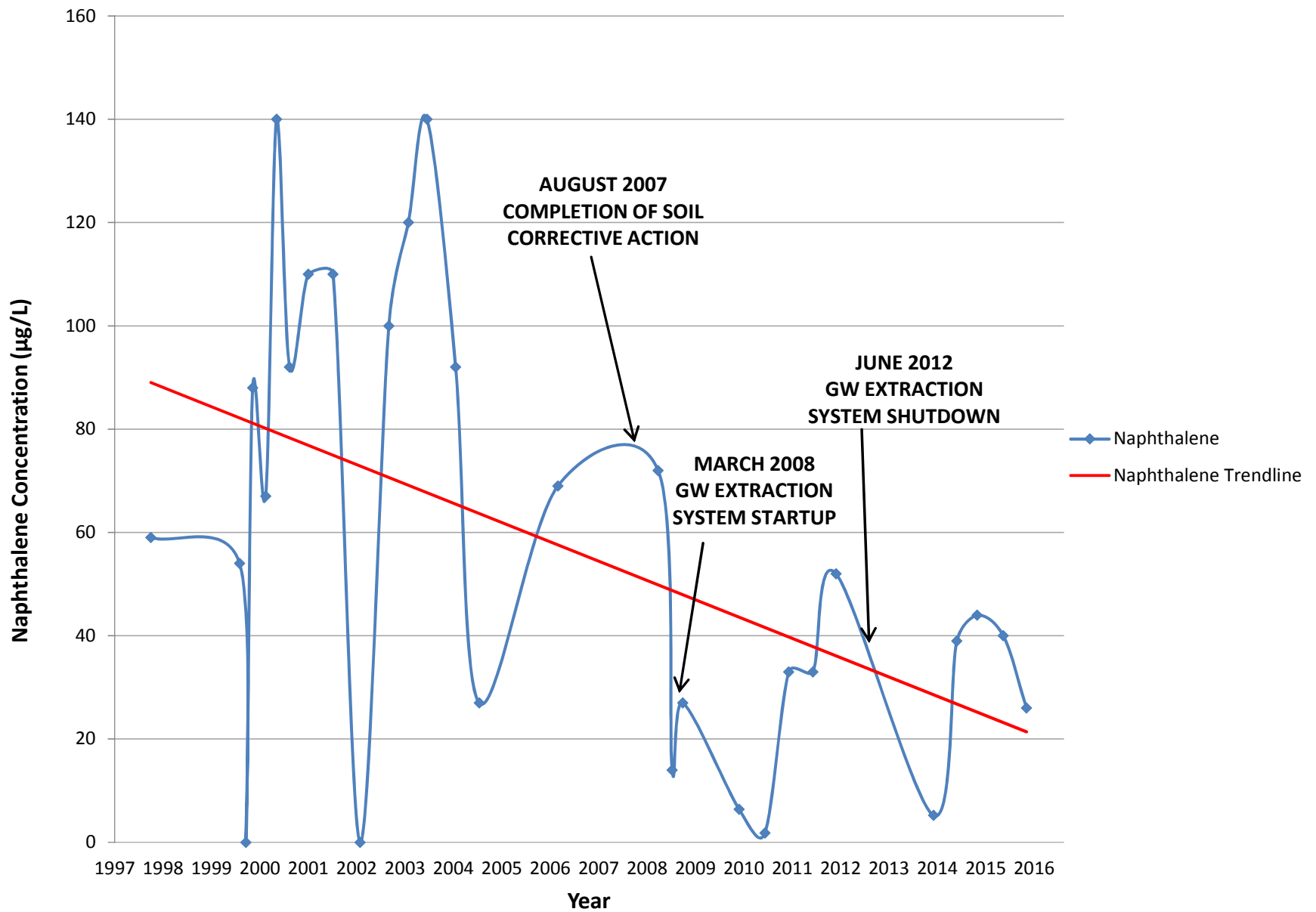
TMW-1 Fluorene



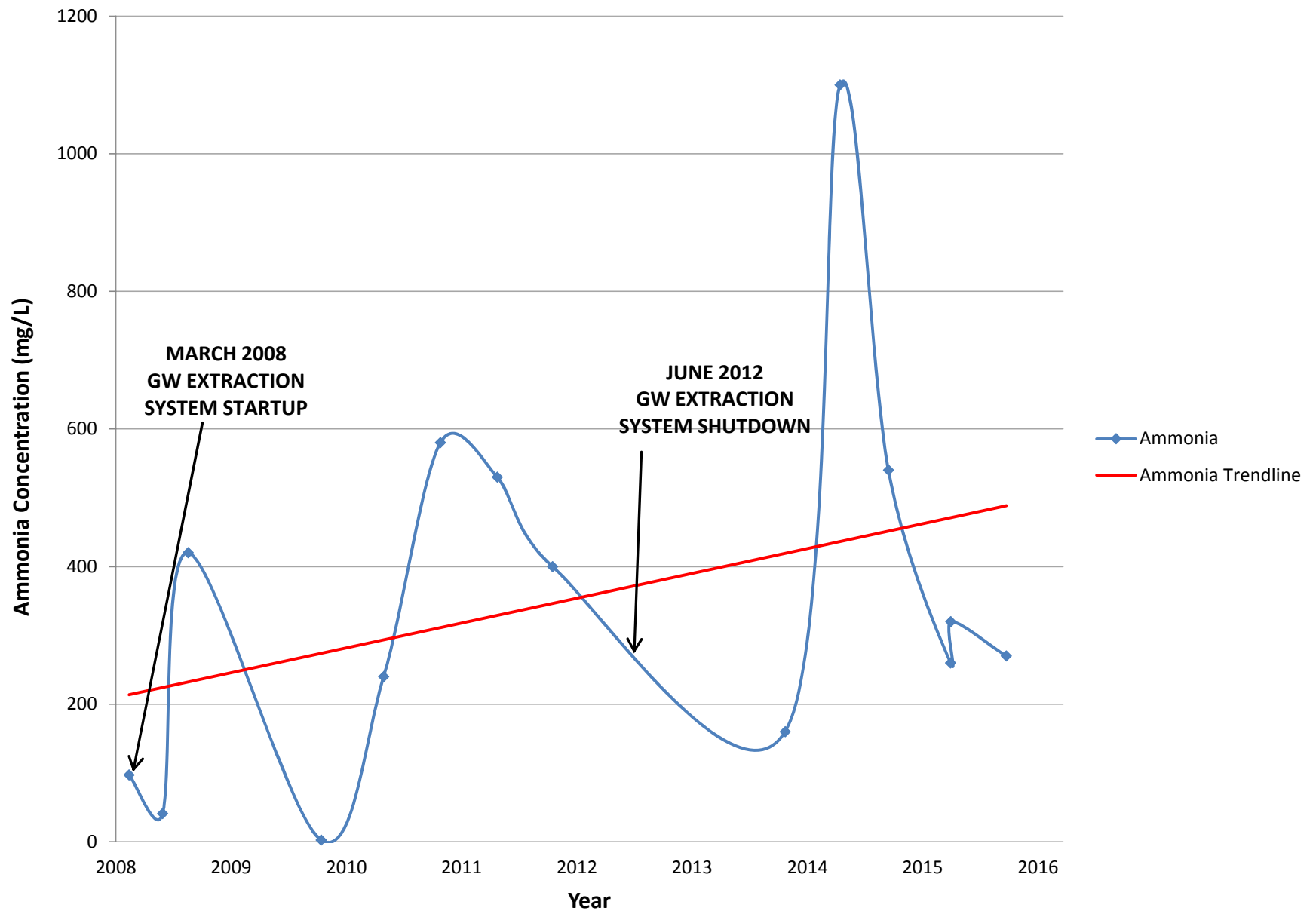
TMW-1 Phenanthrene



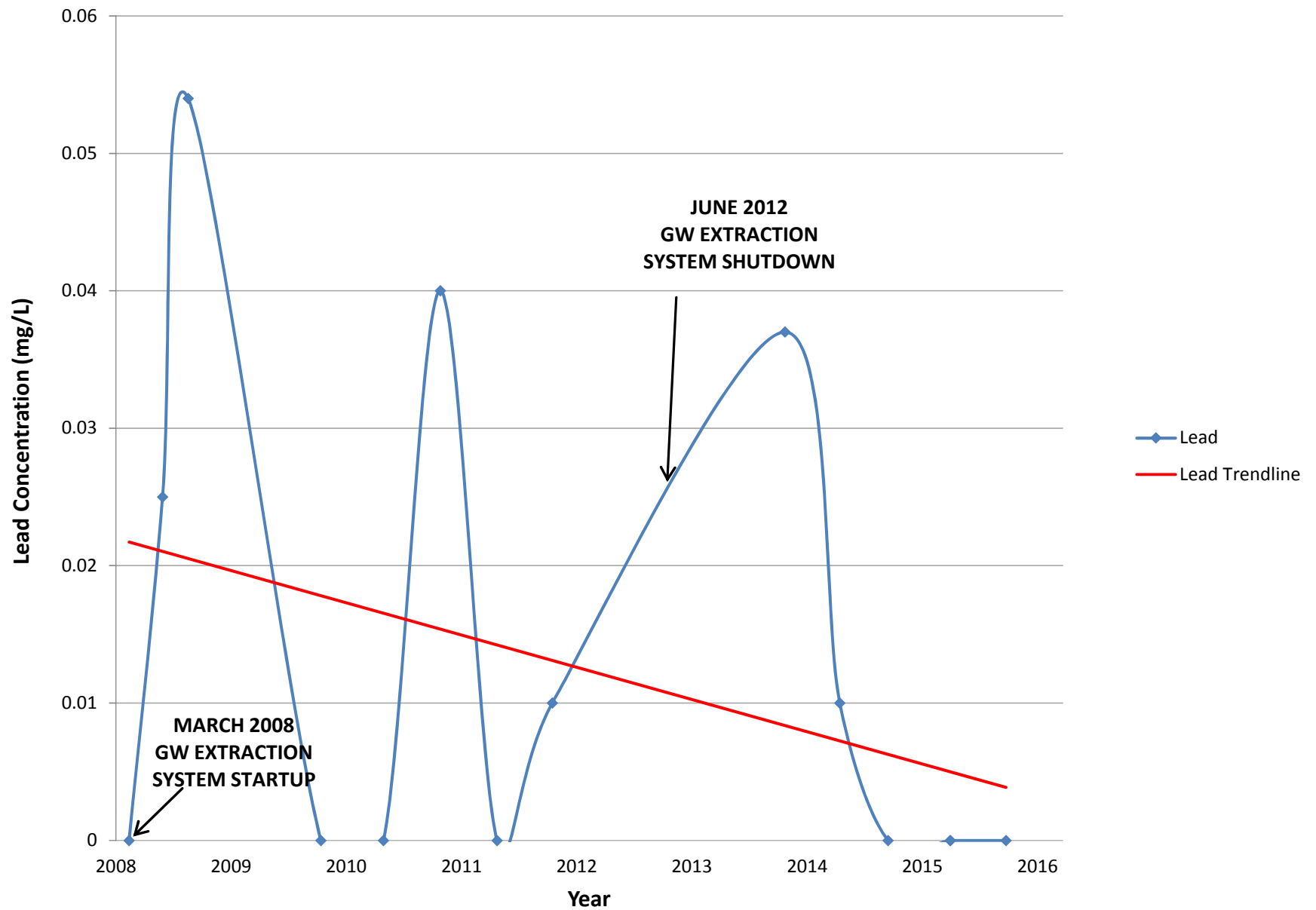
TMW-1 Naphthalene



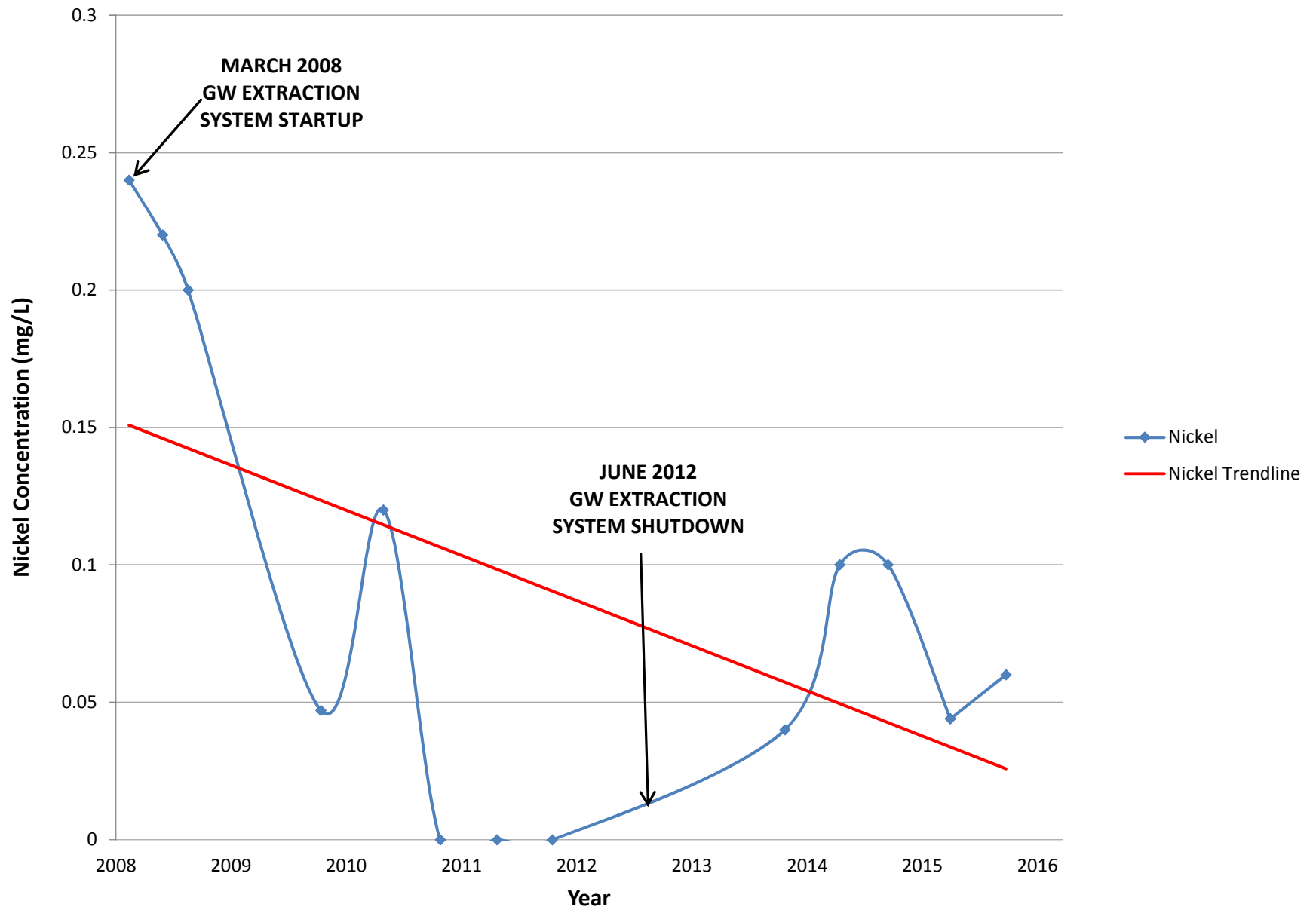
EW-1 Ammonia



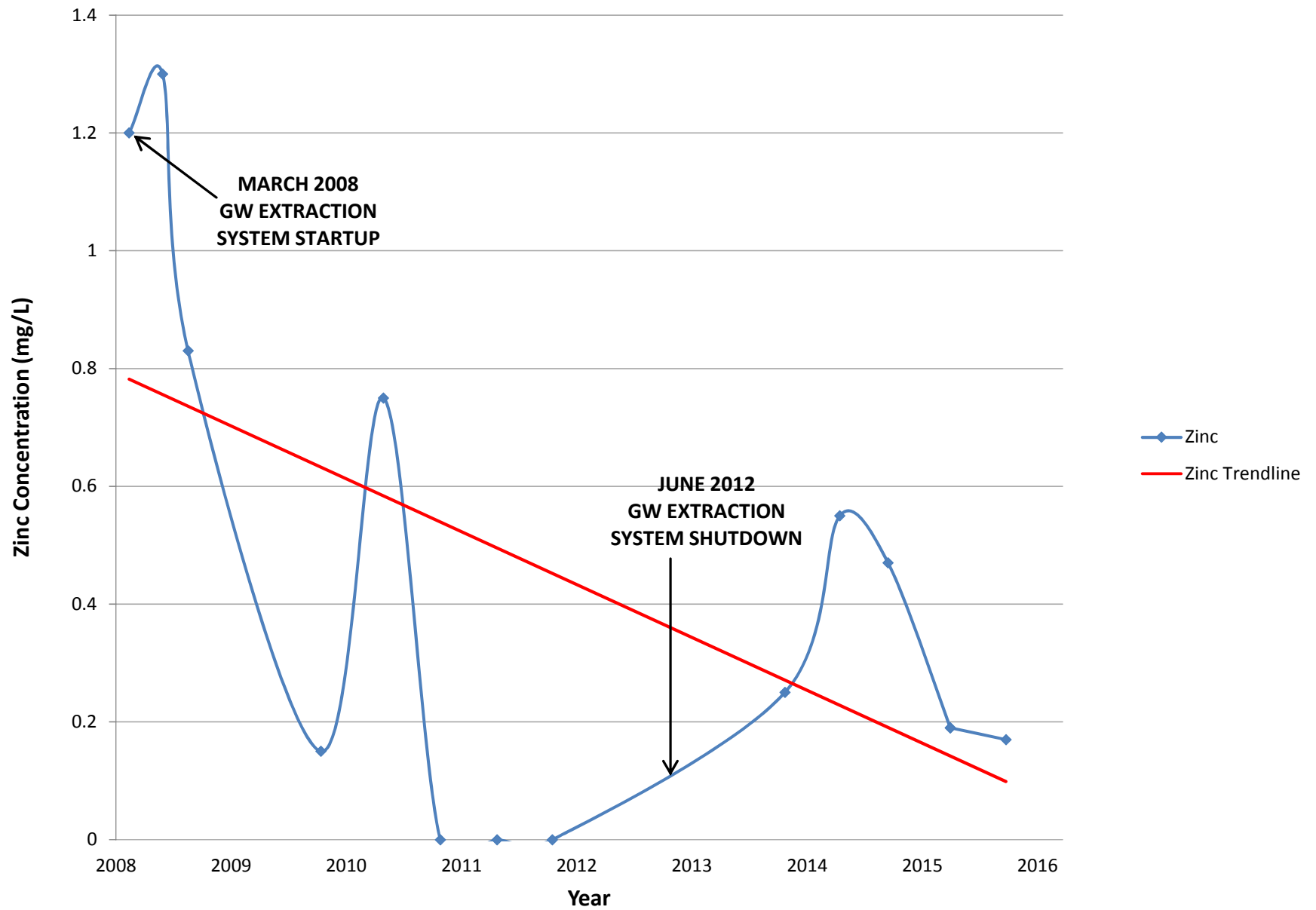
EW-1 Lead



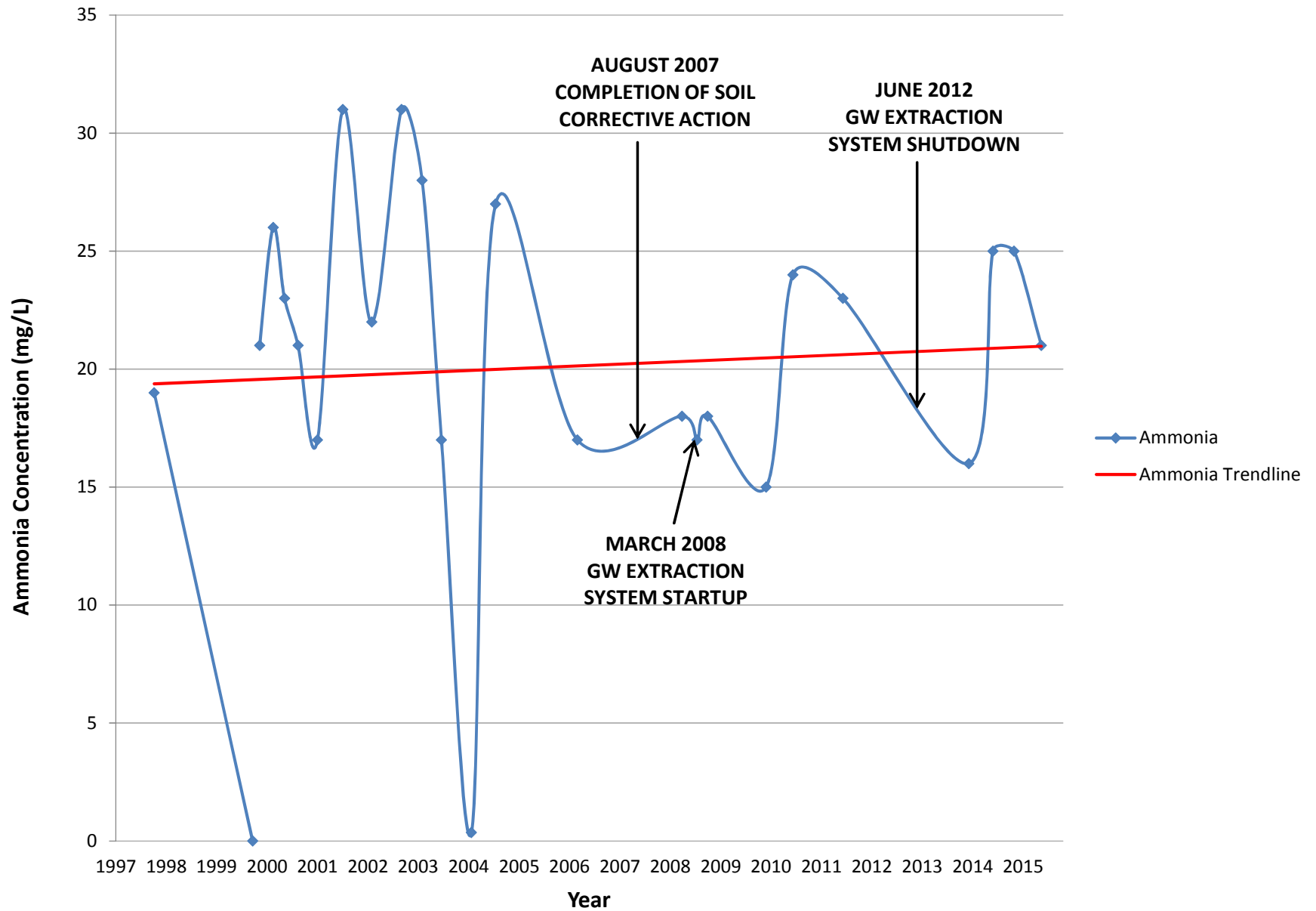
EW-1 Nickel



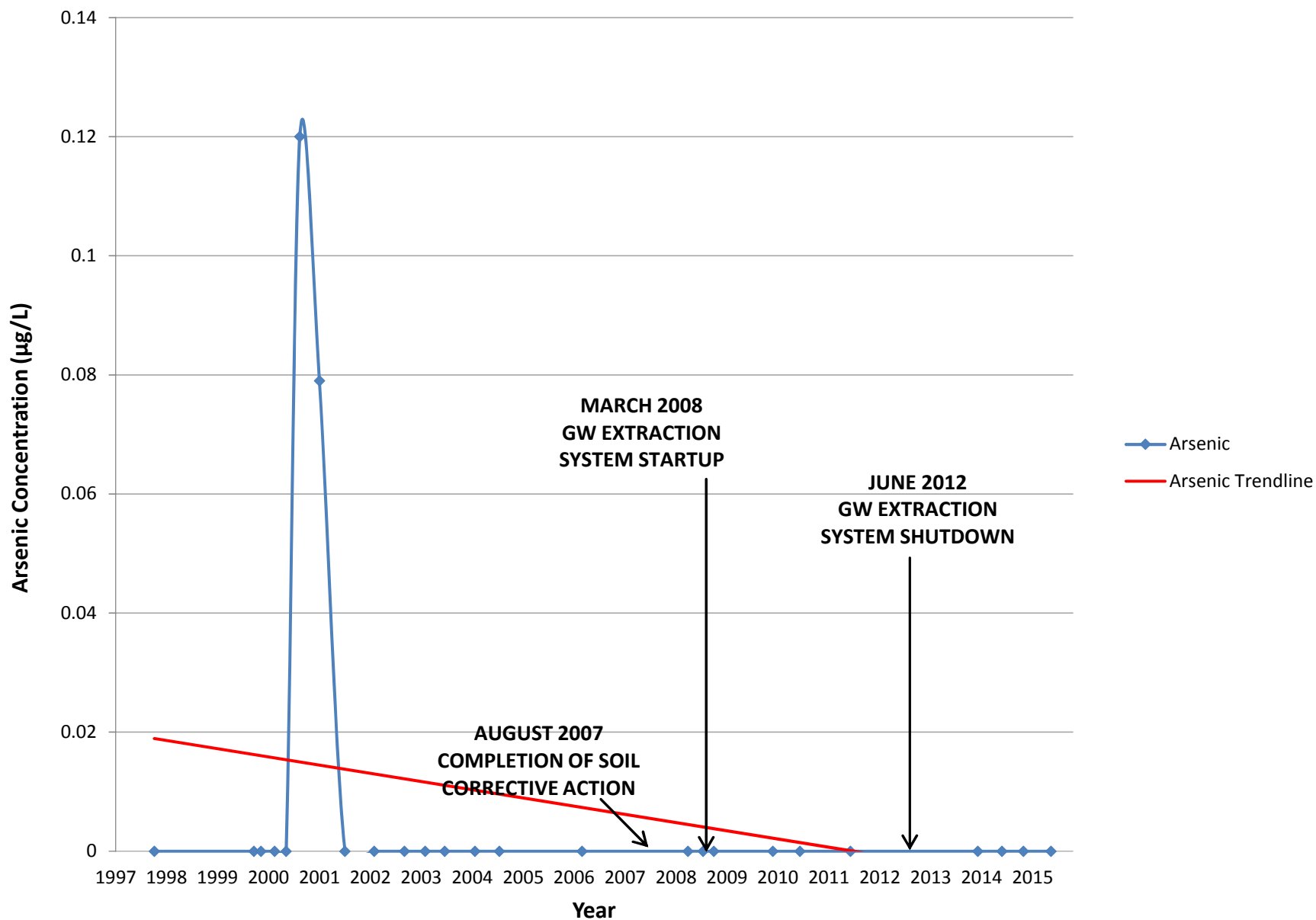
EW-1 Zinc



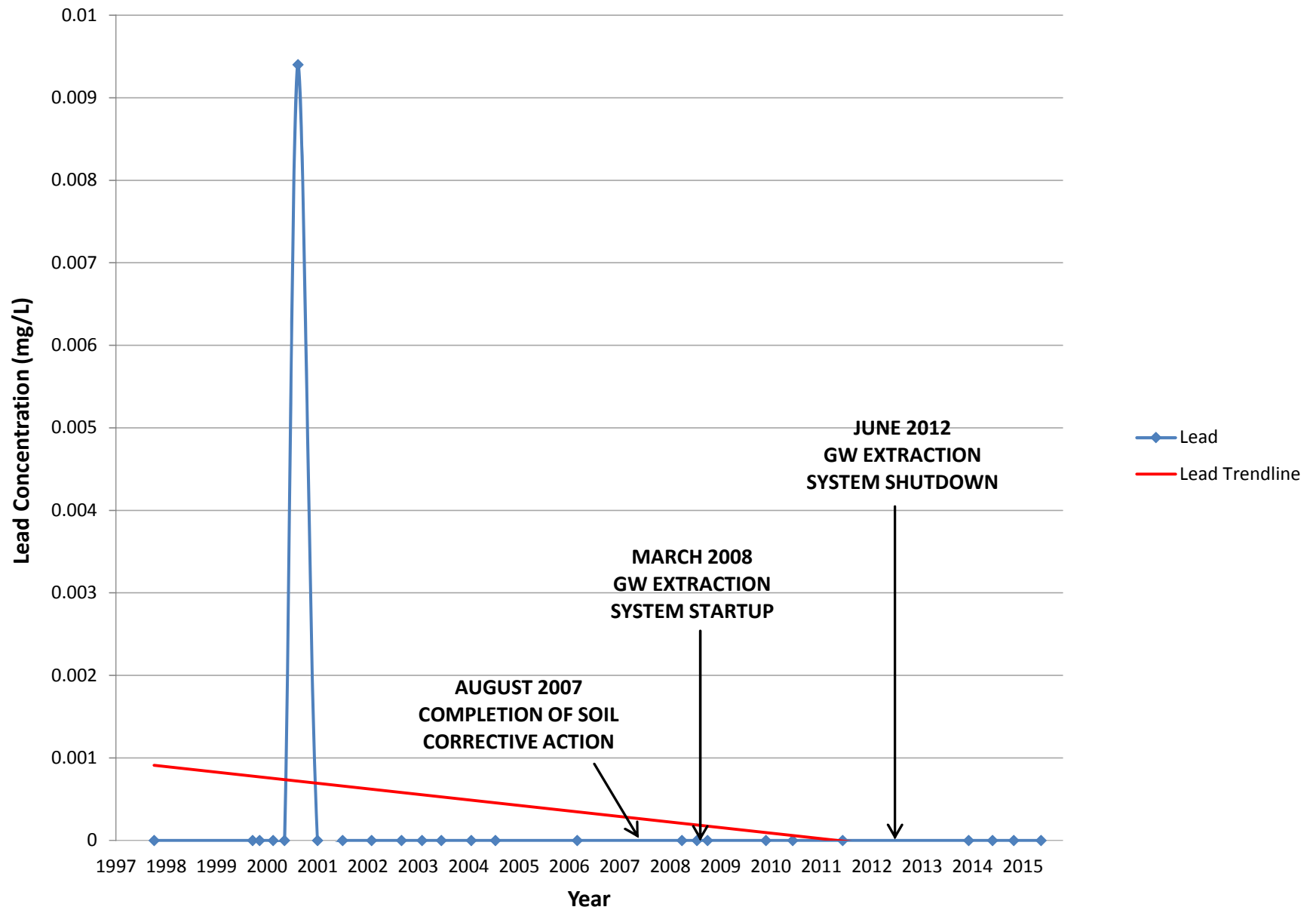
MW-1 Ammonia



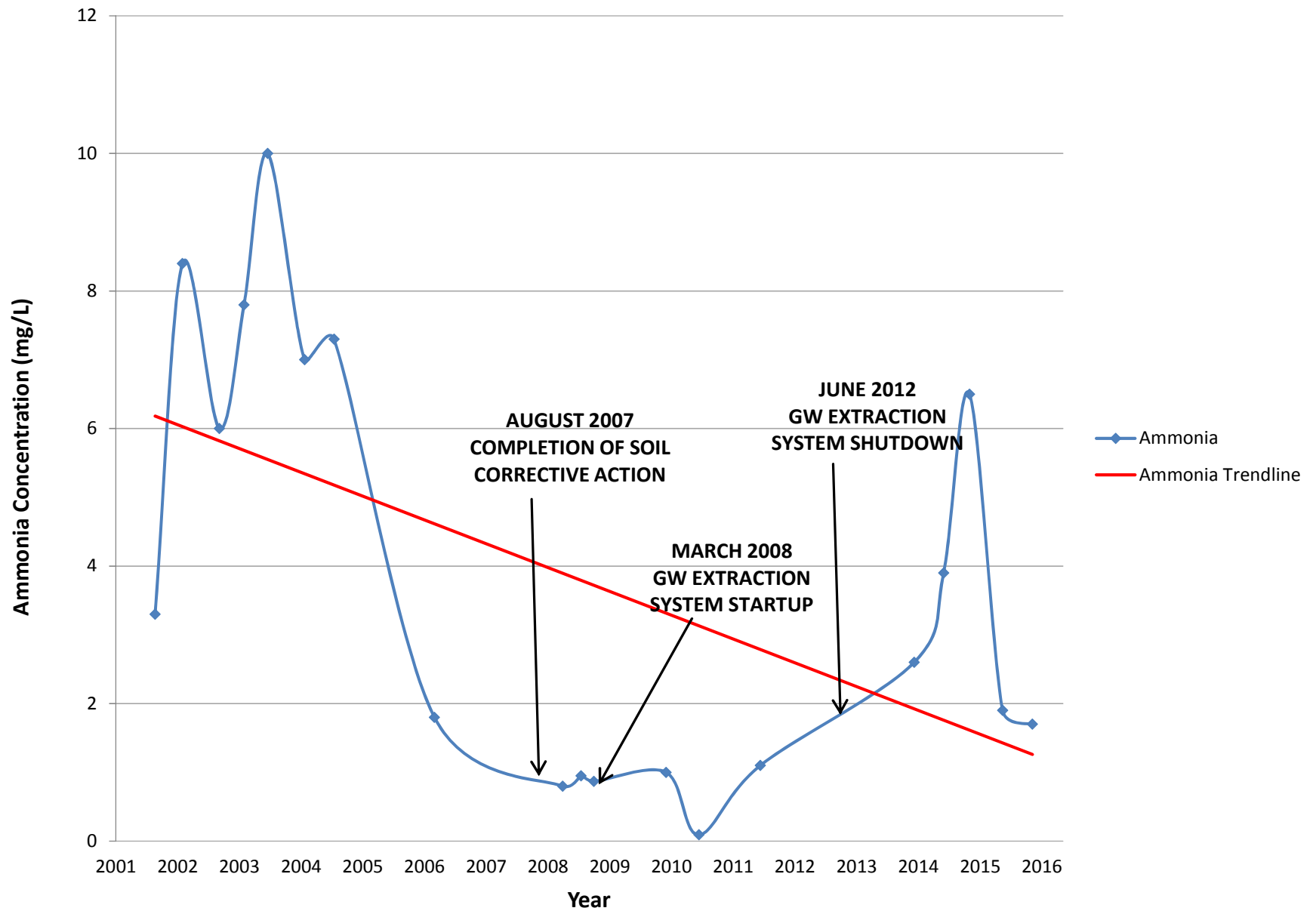
MW-1 Arsenic



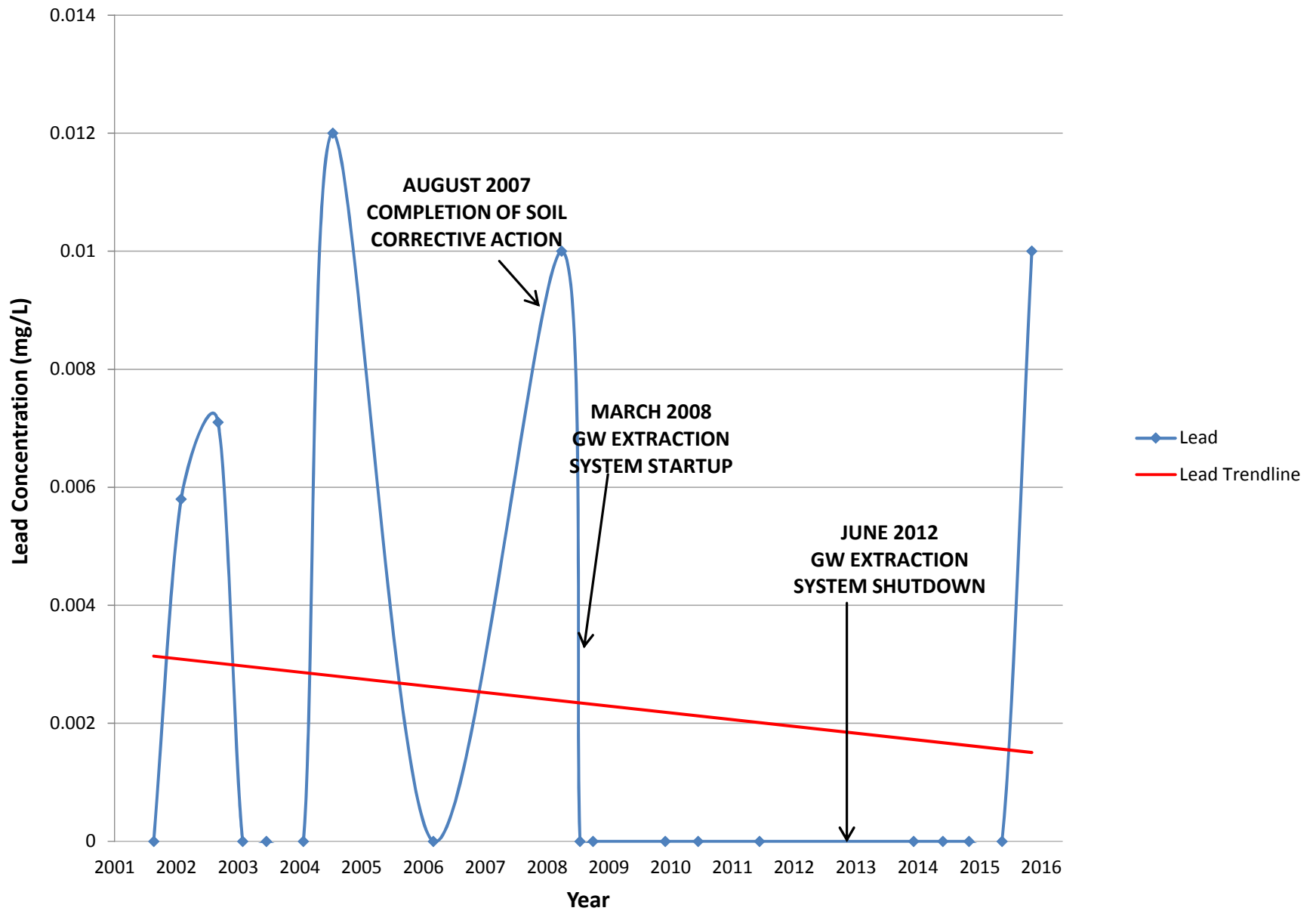
MW-1 Lead



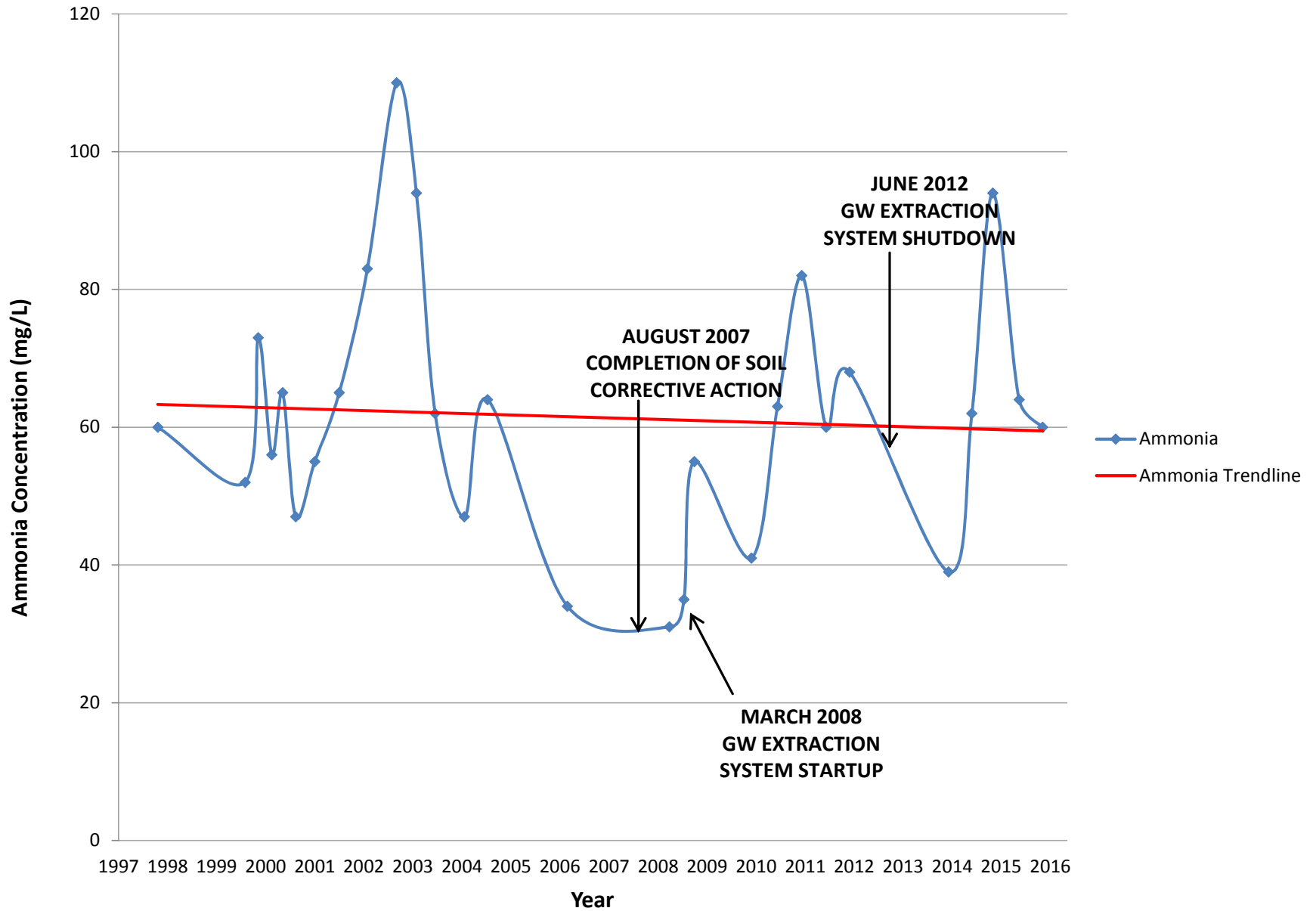
MW-3R Ammonia



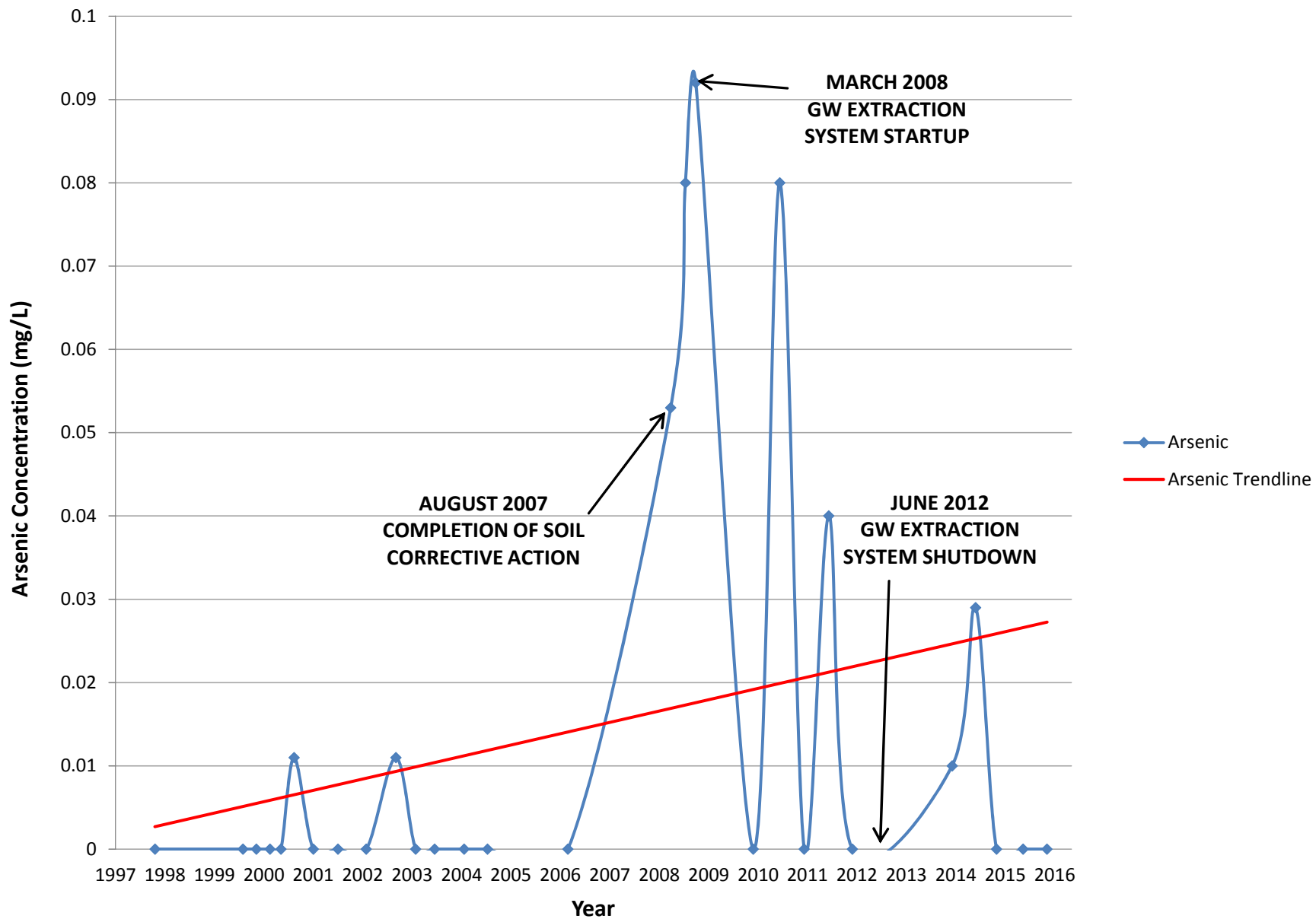
MW-3R Lead



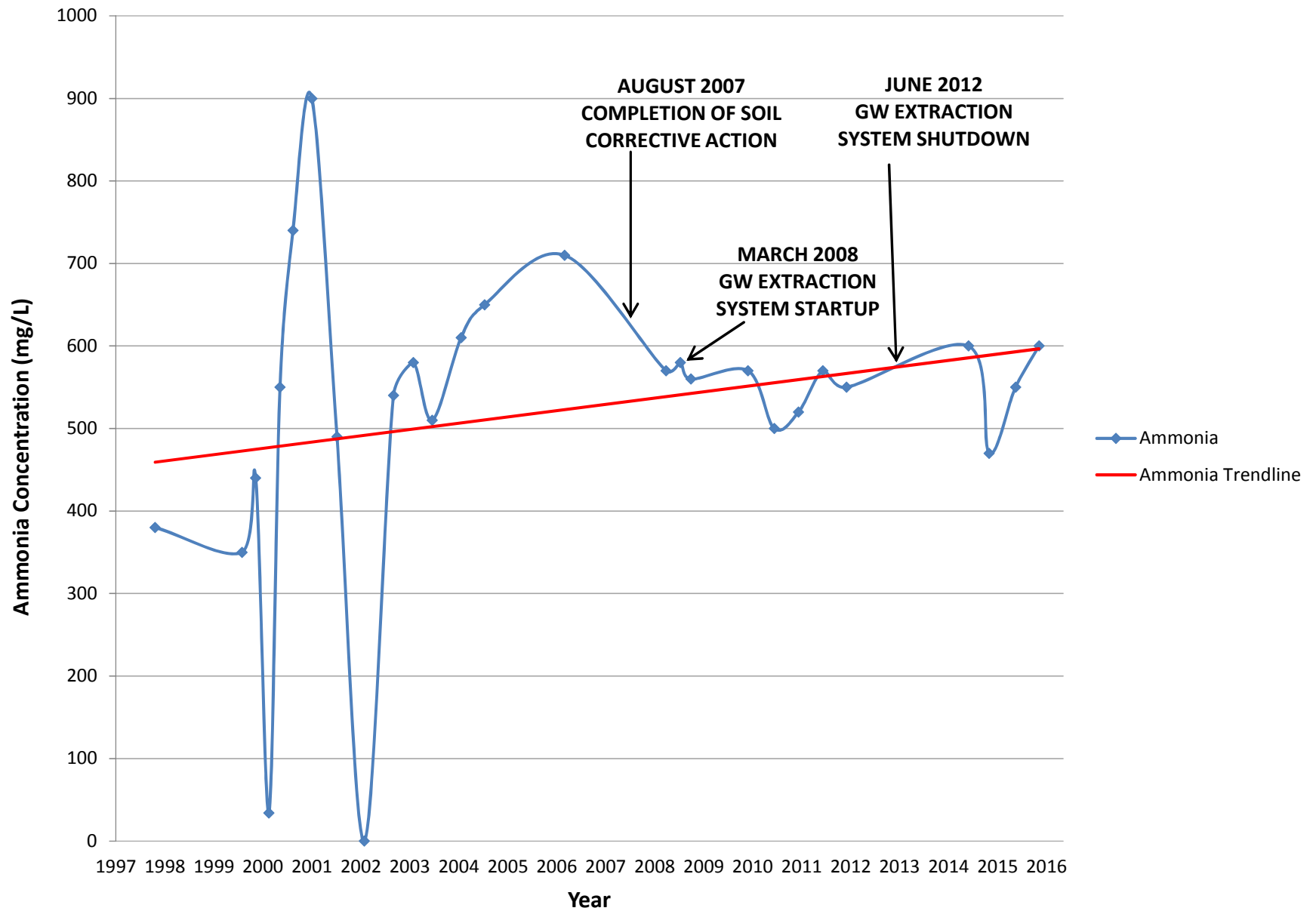
PDMW-8R Ammonia



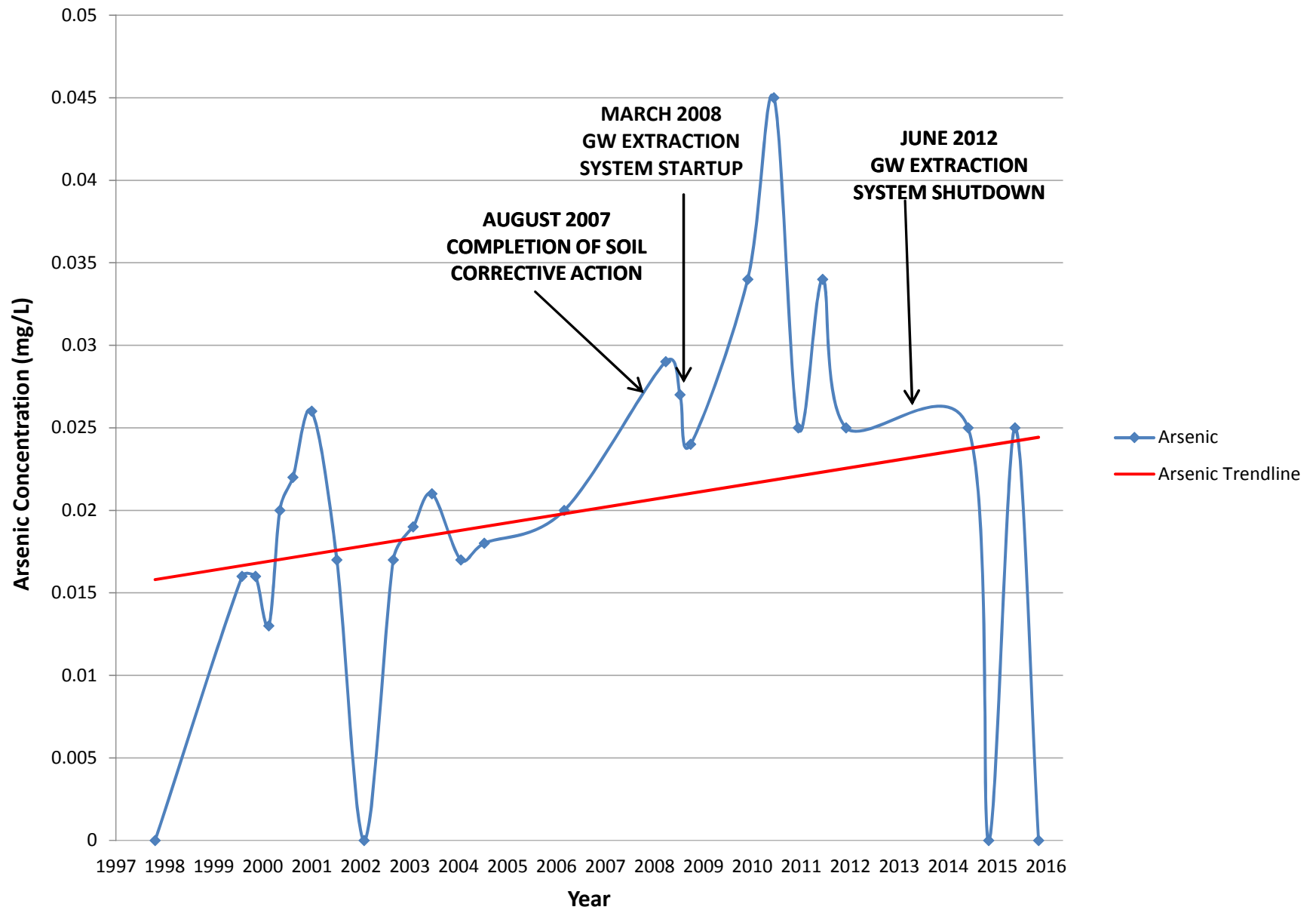
PDMW-8R Arsenic



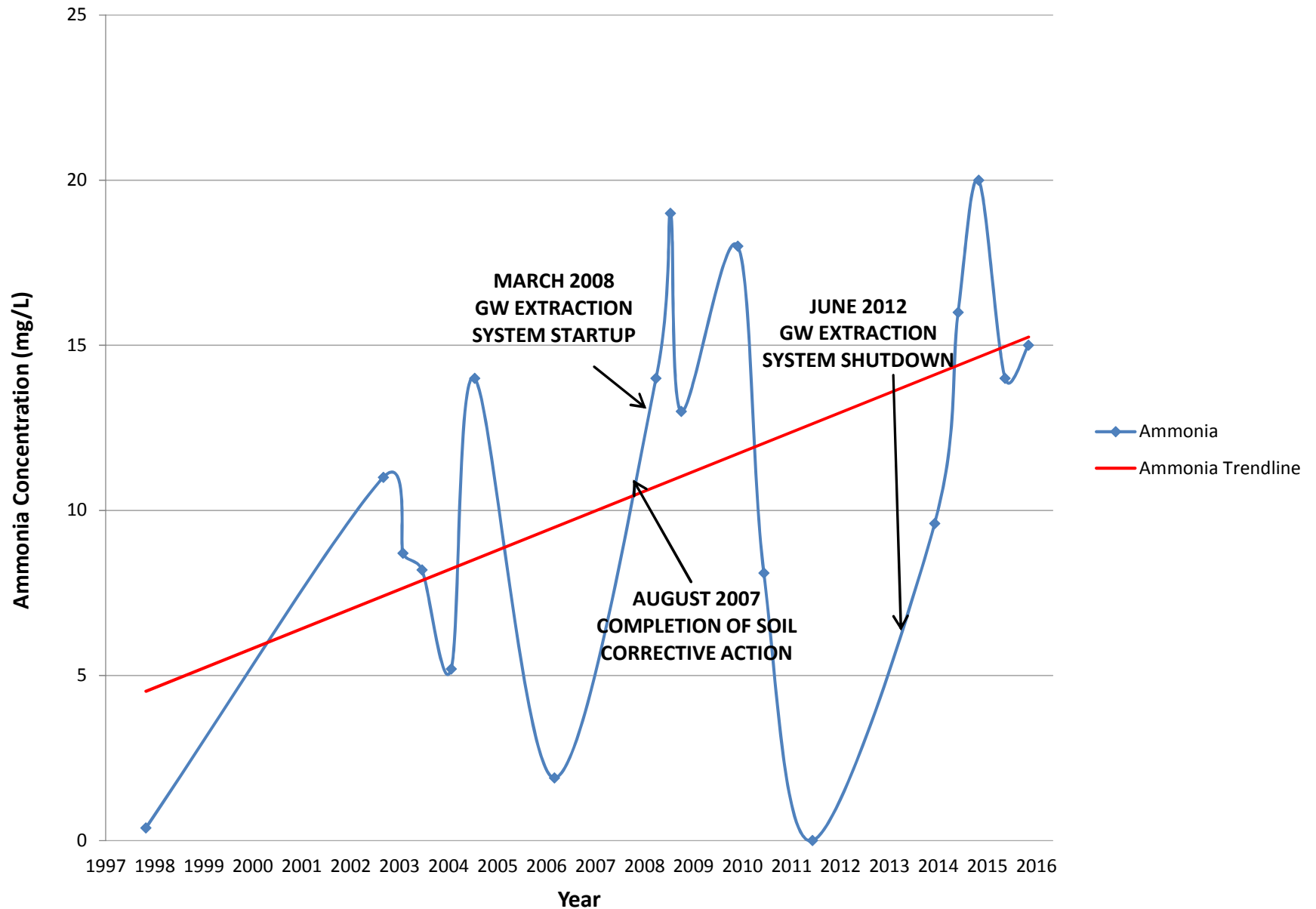
PDMW-26T Ammonia



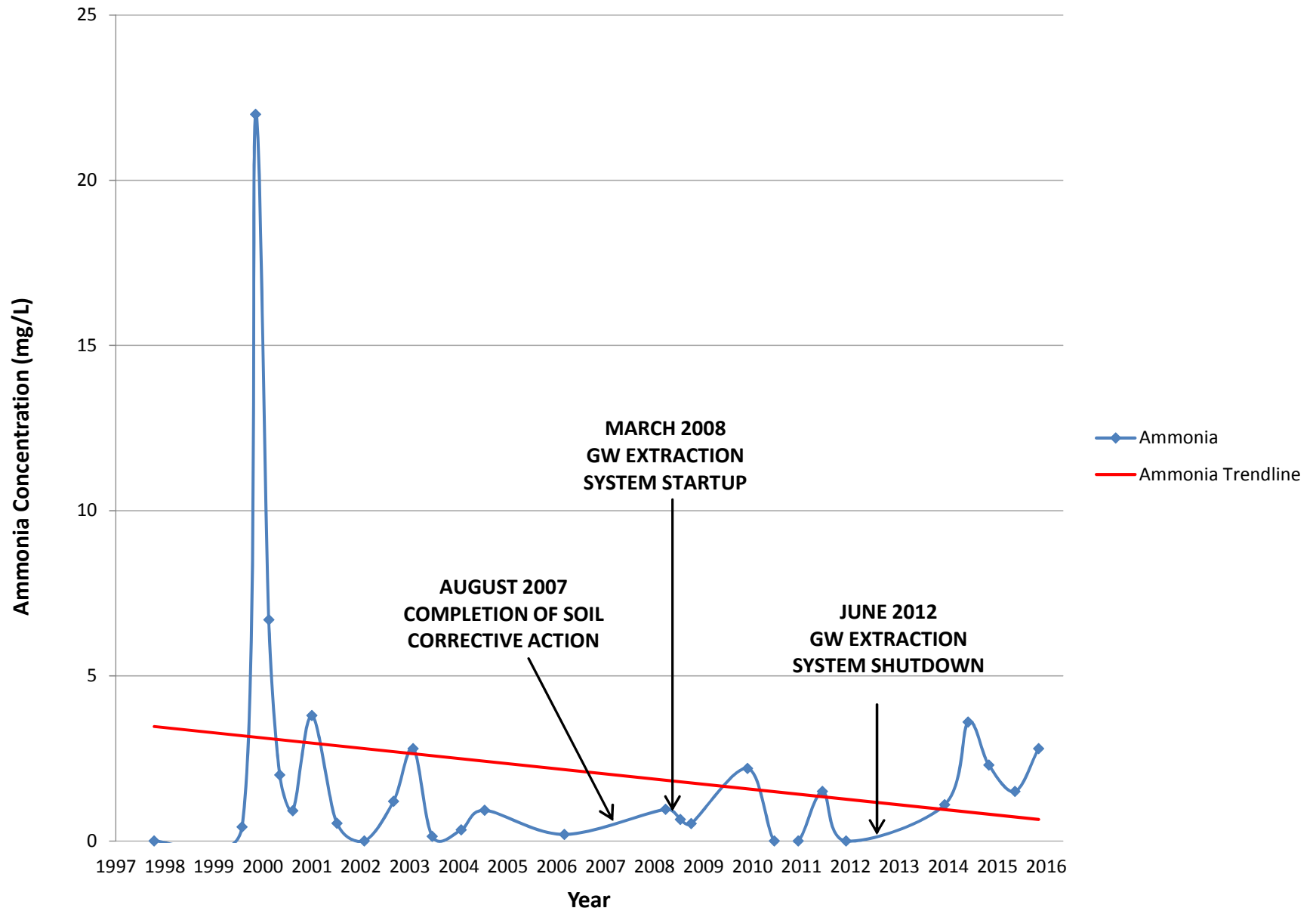
PDMW-26T Arsenic



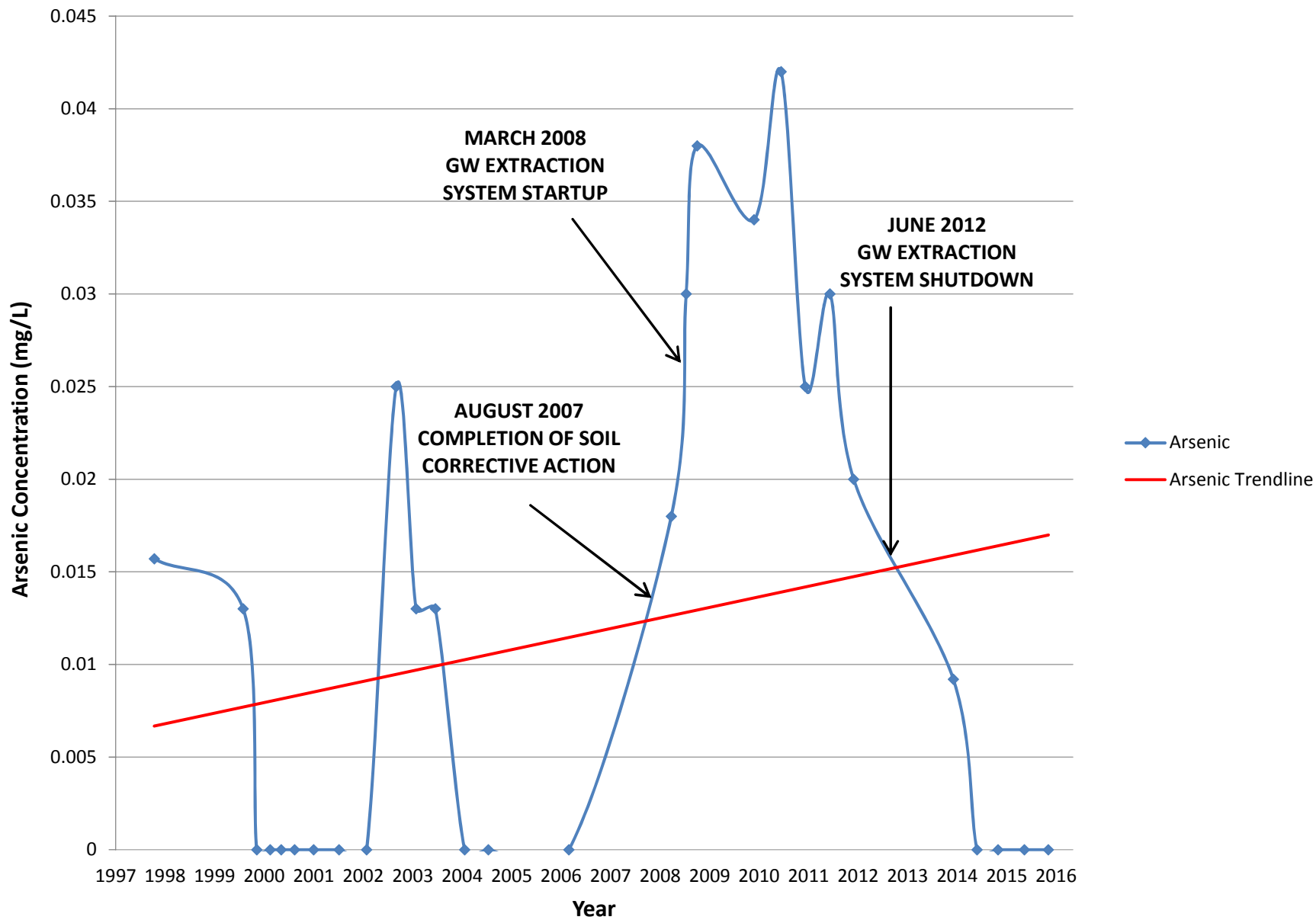
PDMW-33R2 Ammonia



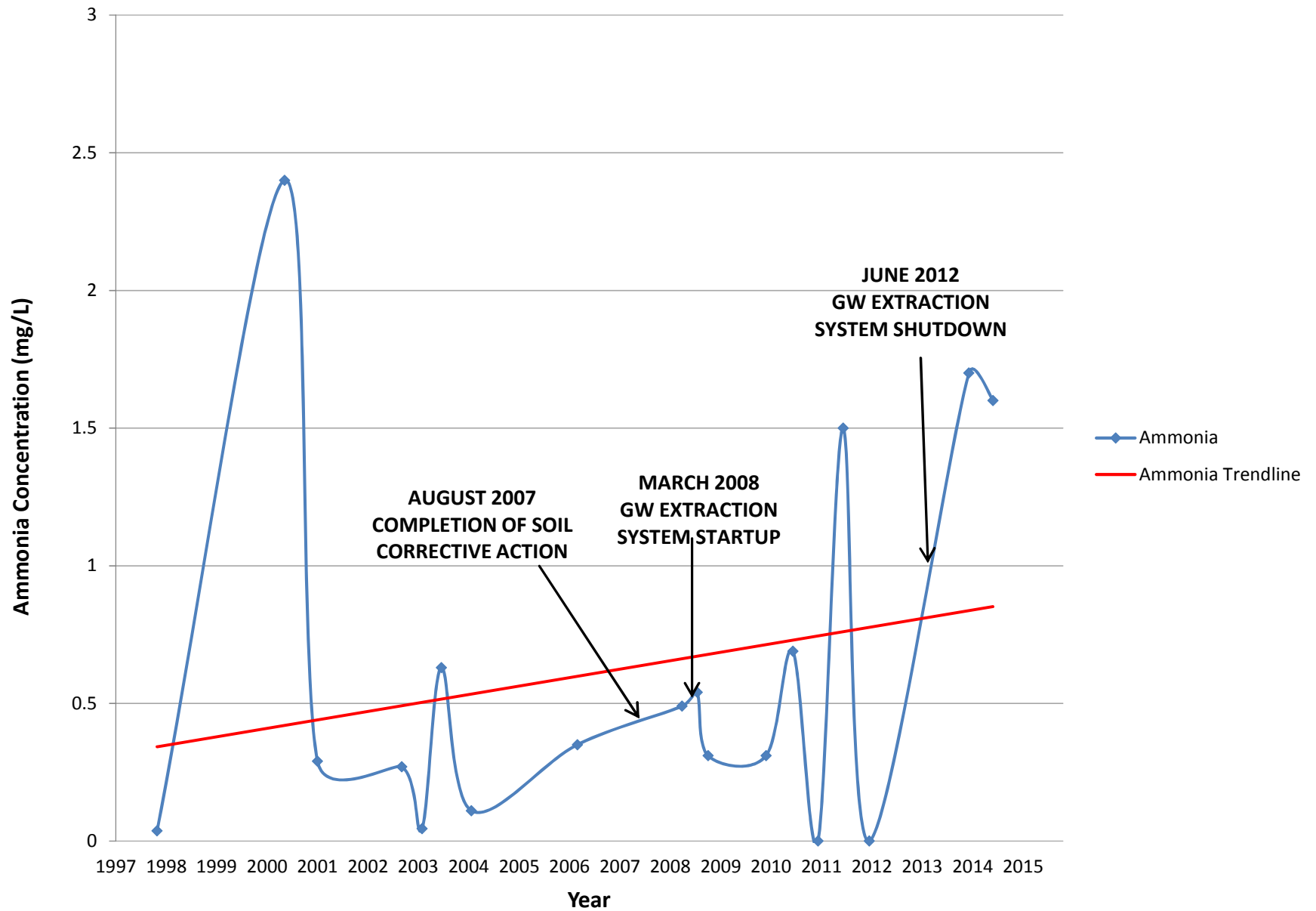
PDMW-23R Ammonia



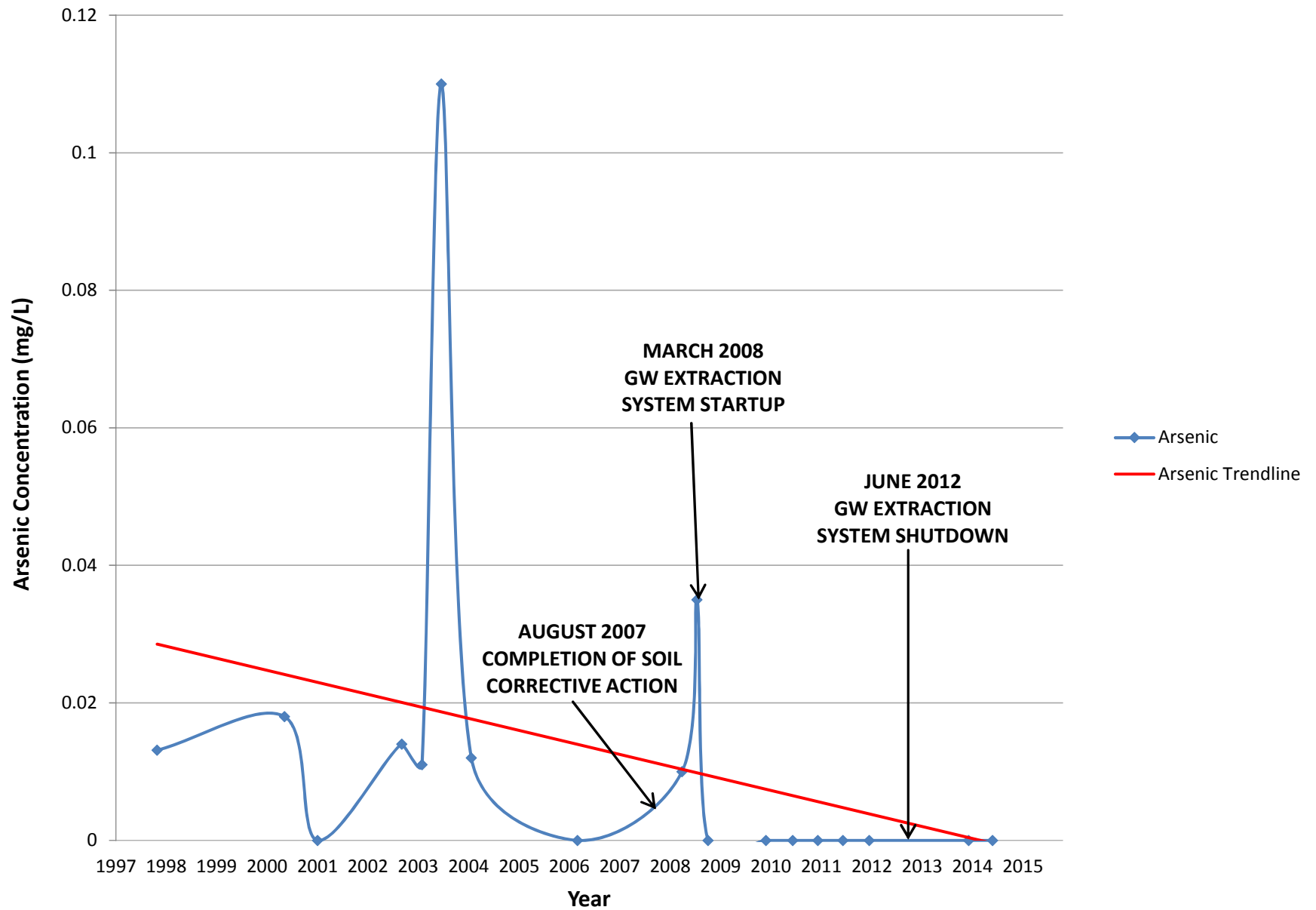
PDMW-23R Arsenic



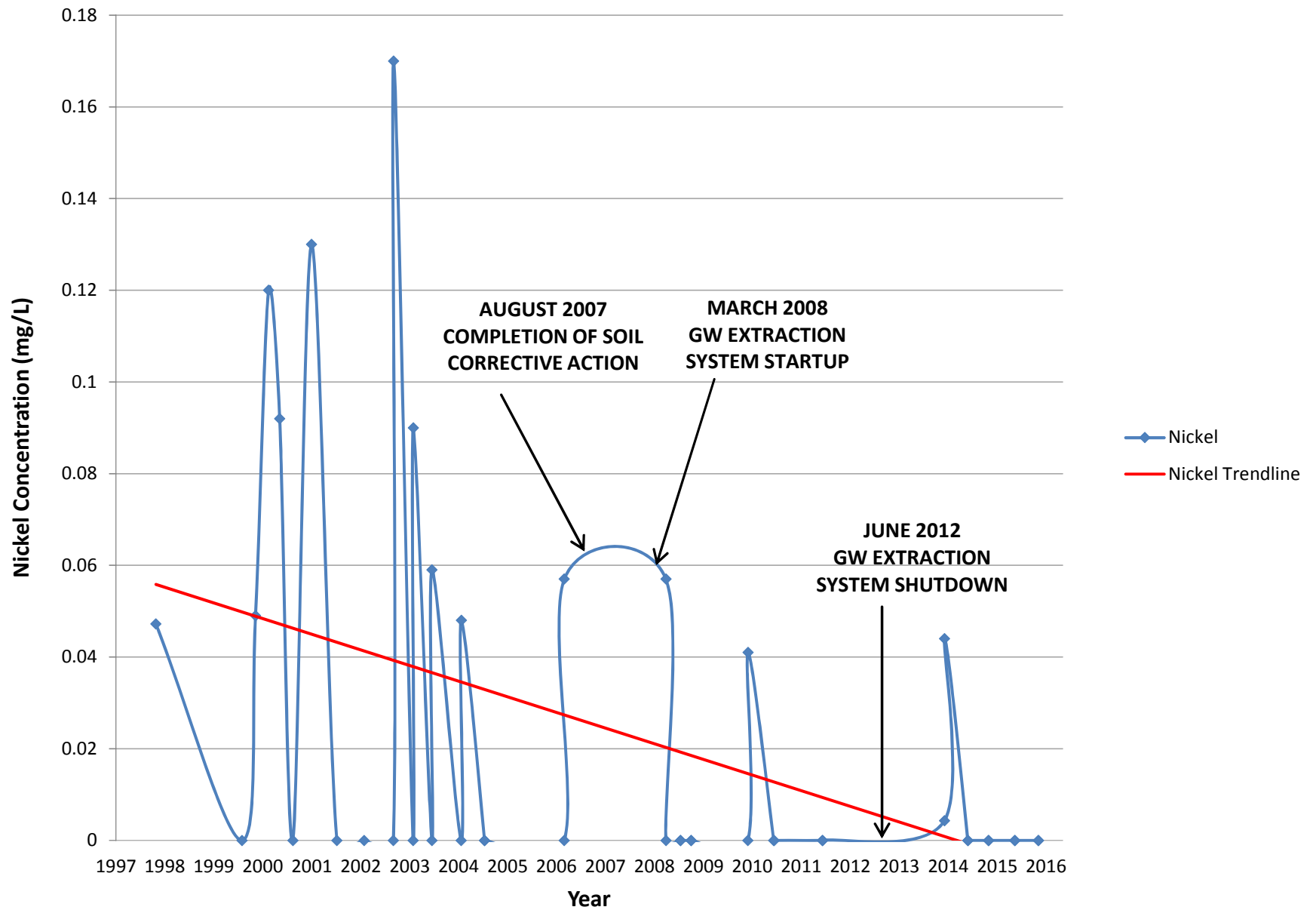
PDMW-30P Ammonia



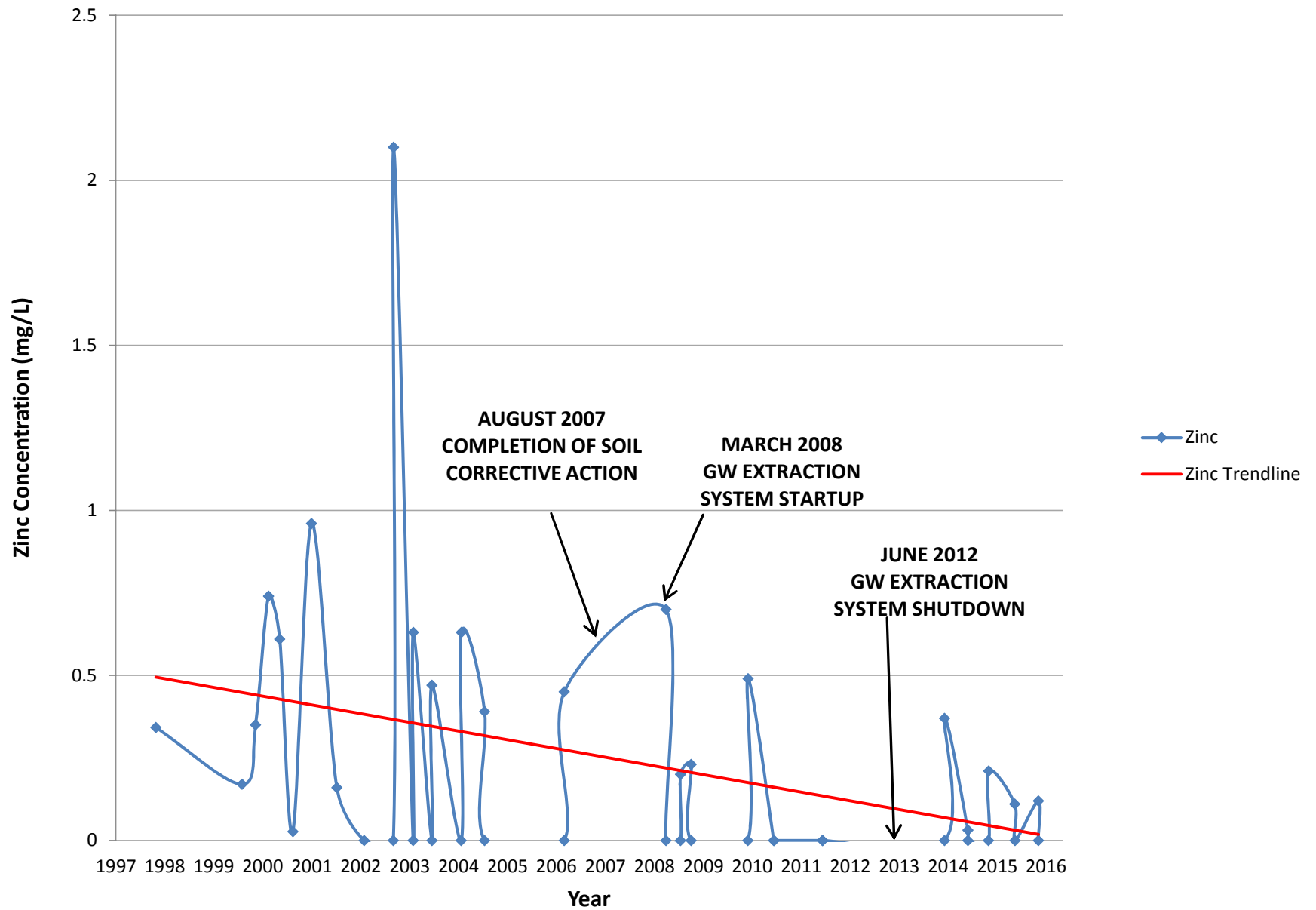
PDMW-30P Arsenic



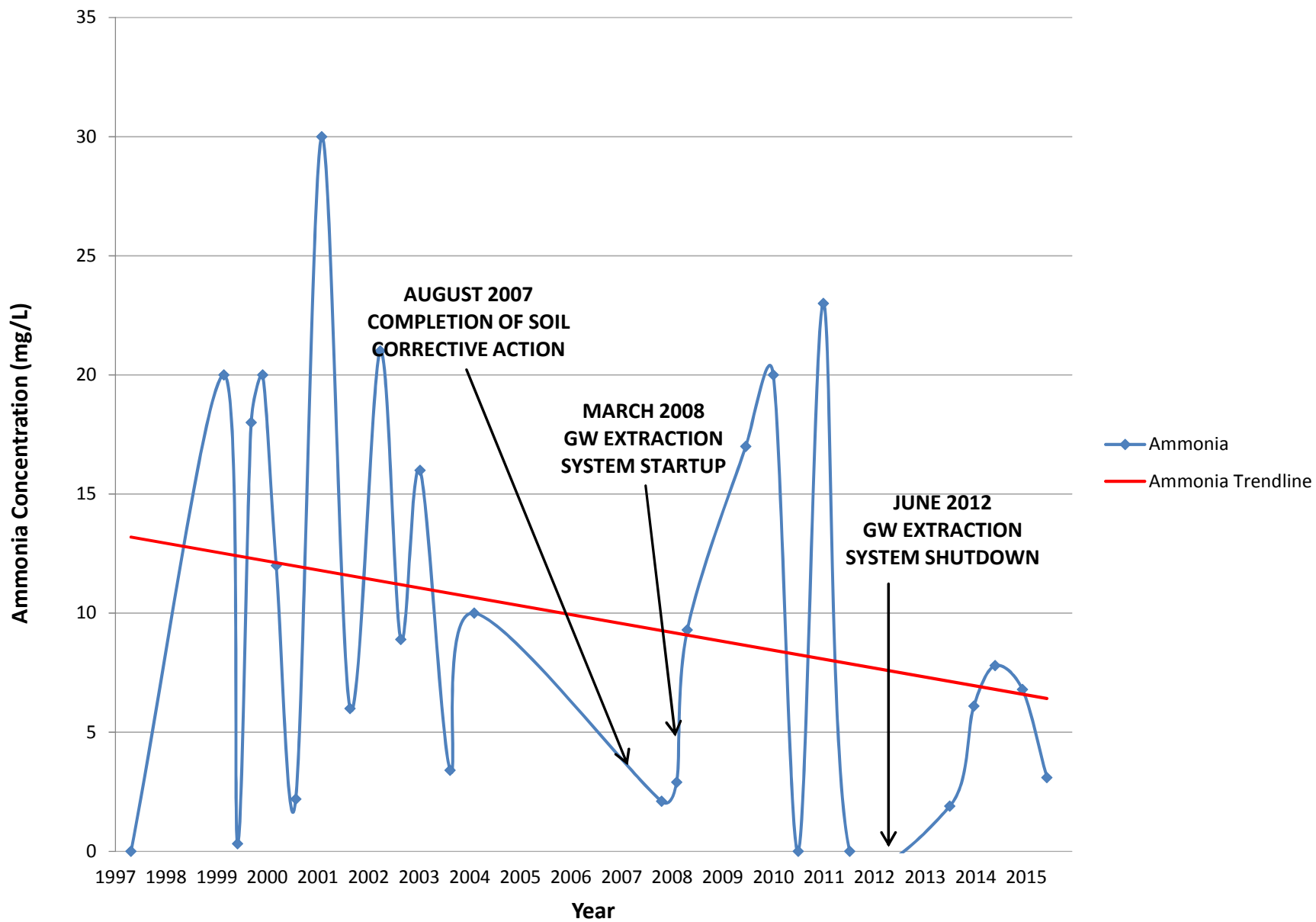
MW-32R Nickel



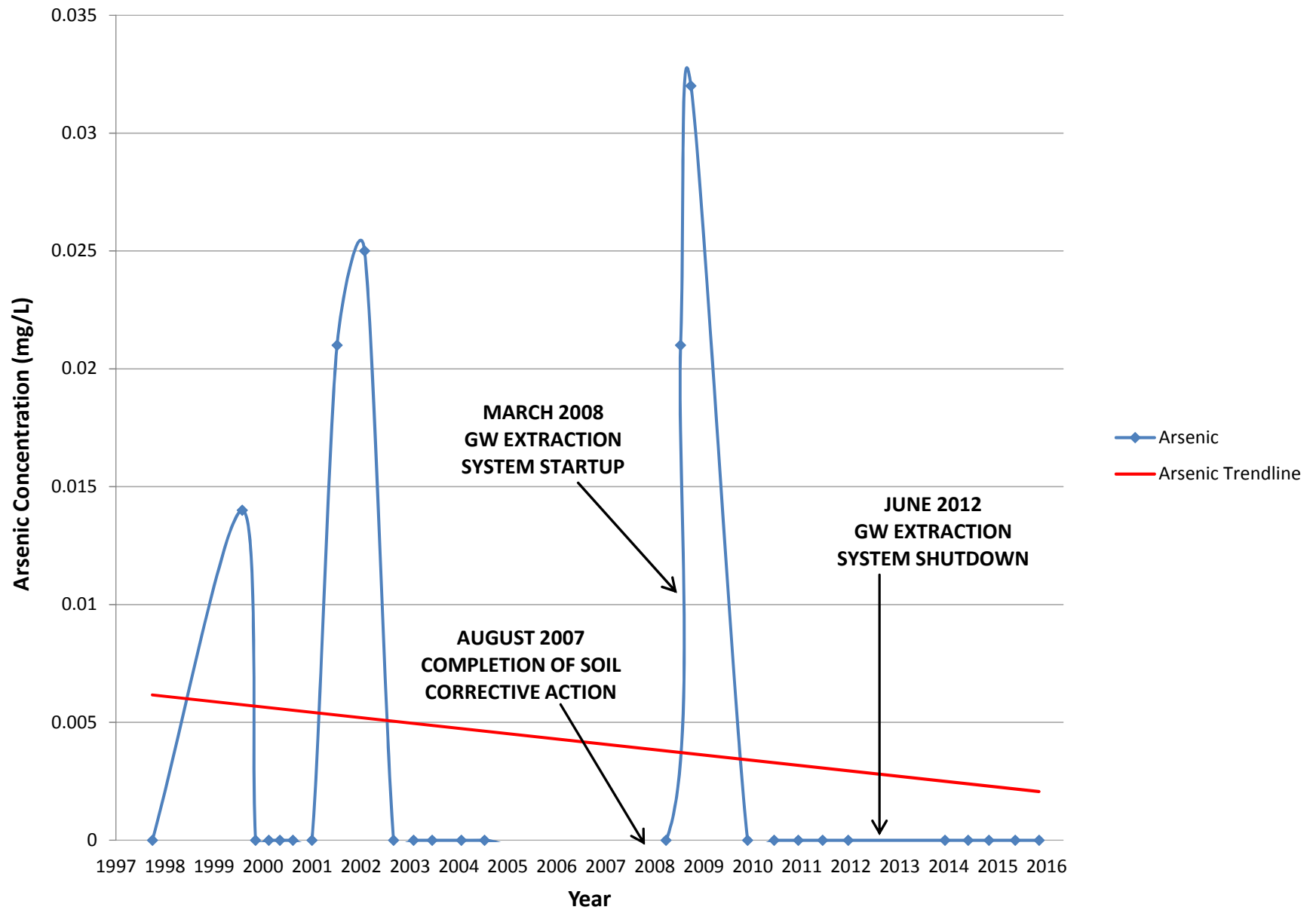
PDMW-32R Zinc



TMW-4R Ammonia



TMW-4R Arsenic



APPENDIX E
VAPOR INTRUSION MODELING

OSWER VAPOR INTRUSION ASSESSMENT
Vapor Intrusion Screening Level (VISL) Calculator Version 3.4, November 2015 RSLs

The primary objective of risk-based screening is to identify sites or buildings unlikely to pose a health concern through the vapor intrusion pathway. Generally, at properties where subsurface concentrations of vapor-forming chemicals (e.g., groundwater or “near source” soil gas concentrations) fall below screening levels (i.e., VISLs), no further action or study is warranted, so long as the exposure assumptions match those taken into account by the calculations and the site fulfills the conditions and assumptions of the generic conceptual model underlying the screening levels. In a similar fashion, the results of risk-based screening can help the data review team identify areas, buildings, and/or chemicals that can be

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR	1.00E-06	Enter target risk for carcinogens
Target Hazard Quotient for Non-Carcinogens	THQ	0.1	Enter target hazard quotient for non-carcinogens
Average Groundwater Temperature (°C)	Tgw	19.4	Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations

		Does the chemical meet the definition for volatility?	Does chemical have inhalation toxicity data?	Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Soil Source?	Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Groundwater Source?	Target Indoor Air Conc. @ TCR = 1E-06 or THQ = 0.1	Toxicity Basis	Target Sub-Slab and Exterior Soil Gas Conc. @ TCR = 1E-06 or THQ = 0.1	Target Ground Water Conc. @ TCR = 1E-06 or THQ = 0.1	Is Target Ground Water Conc. < MCL?	Pure Phase Vapor Conc. @ 25°C	Maximum Groundwater Vapor Conc.	Temperature for Max. Groundwater Vapor Conc.	Lower Explosive Limit**	LEL Source		Inhalation Unit Risk	IUR Source*	Reference Concentration	RFC Source*	Mutagenic Indicator	Target Indoor Air Conc. for Carcinogens @ TCR = 1E-06	Target Indoor Air Conc. for Non-Carcinogens @ THQ = 0.1
		(HLC>1E-5 or VP>1)	(IUR and/or RfC)	Cvp > Cia,target?	Chc > Cia,target?	MIN(Cia,c;Cia,nc)		Csg	Cgw	Cgw<MCL?	Cvp	Chc	Tgw or 25	LEL	N		IUR		RfC	I	i	Cia,c	Cia,nc
7664-41-7	Ammonia	Yes	Yes	Yes	Yes	4.4E+01	NC	1.5E+03	7.8E+04	--	6.88E+09	2.70E+08	19.4	15	N				1.00E-01	I			4.4E+01